

atory, in search of oil and/or natural gas. The well was proposed to reach a depth of 14,000 feet. However, only a trace of natural gas was found and the well was abandoned. Another proposed site for oil exploration is just north of the Brownsville Planning Area at Plainview. However, because of negative results at the previously mentioned location, this site may never be explored.

Semi-precious gems, mostly agates, jasper and petrified wood are found along the banks of the Calapooia River. The occurrence of these minerals increases as one moves up-stream. Names such as Calapooia Blue and Holley Blue Agates speak to the regional uniqueness of some of these minerals. The headwaters of the Calapooia River were productively mined for gold in the late 1800's. By 1812 the gold for the most part had been played out. (Mullen, 1971)

Vegetation Cover: Figure 9.0

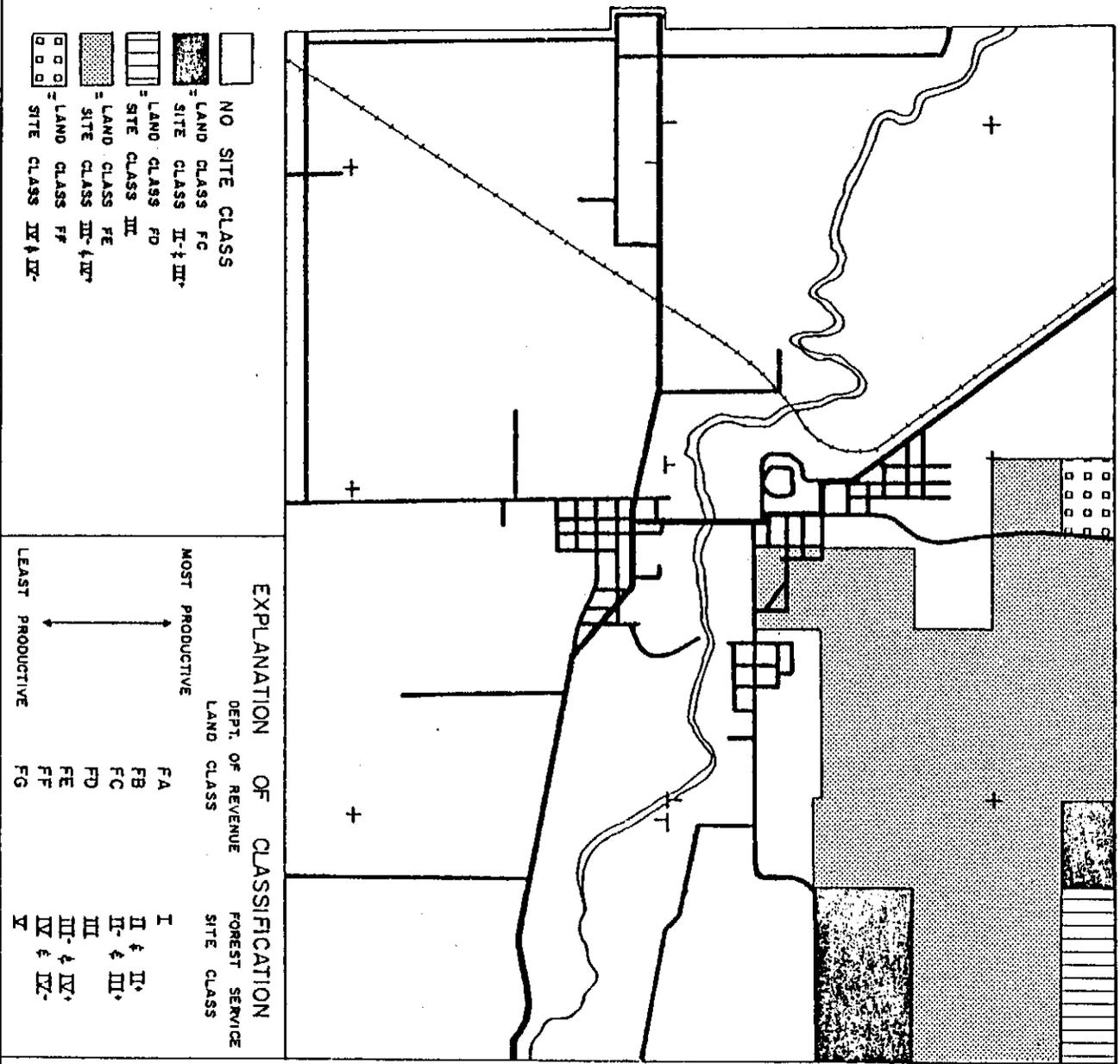
It is believed that the flat open spaces of the valley floors have never been covered with forest. Grasses and camas were most likely the natural vegetation. In support of this, the Indian name Calapooia refers to "place of plentiful grass." (Mullen, 1971) Fires set by the Indians may also have been responsible for some of the grass covered slopes adjacent to the valley floor. However, in most instances, as the valley floor gives way to the foothills the grass lands give way to the forest.

Forest Lands (Figure 10.0), like agricultural lands, are protected by State law. To aid in the identification of forest land, the State Department Revenue Land Classification, is used along with Forest Service Site Class system. Based on these classification schemes, the northeastern portion of the Planning Area has been identified as forest resource land. However, forest lands should be looked on as a resource and utilized to the fullest to produce forest products, urban buffers, windbreaks, wildlife and fisheries habitat, livestock habitat, scenic corridor, and recreational use.

The other important vegetation cover occurs along the river banks and stream channels. The term used to address the vegetation along a water channel is "riparian". Riparian vegetation has many important qualities. Probably its greatest value is in providing habitat for

Figure 10.0

FOREST CAPABILITY CLASSES



BROWNSVILLE
PLANNING AREA

SCALE: 1" = 1/2 MI.

wildlife. The relationship between riparian vegetation and wildlife is tied so closely to the natural system that removing the riparian vegetation would severely impact the survival of certain fish, birds, and animals.

Fish and Wildlife

Within the total environment, each native bird, mammal, reptile, and amphibian has its own habitat: a complex and often narrowly specific set of conditions to which it is adapted and without which it cannot survive. Loss of habitat need not be total to exclude an animal from a given area; it is enough to remove only one element which fills a critical need. Food, water, and vegetative cover or other natural features necessary for escape, shelter, and reproductive needs must be present in the kind, quantity, and distribution peculiar to the requirements of the individual animal. The key to maintaining diverse and abundant wildlife is simply to provide an abundance of habitats of a diverse nature suited to the needs of all species.

Big game species found within the Brownsville Planning Area include black-tailed deer and Roosevelt elk. While black-tailed deer are very common, the Roosevelt elk are scarce and usually appear during the winter months when the highlands (above 2500') are frozen.

The Calapooia drainage below 2500' has been identified as sensitive big game habitat particularly adjacent to forest lands.

Several species of birds and small animals are found around the Brownsville Area. Included in this group are ring-necked pheasant,* grouse, quail, doves, pigeons, and several varieties of song bird. Small animals include squirrel, raccoon, nutria, opossum, skunk, and many others.

Forest cover and riparian areas provide the habitat necessary for these species.

Fish: The Calapooia River and many of its small tributaries are important habitat for a variety of fish.

* The first China ring-necked pheasant in the United States was released in 1882 at Petersons Butte just north of the Brownsville Planning Area.

Large Chinook and Coho Salmon, Steelhead, and Rainbow and Cutthroat Trout use the waters of the Calapooia to spawn.

The State Department of Fish and Wildlife has identified the Calapooia River and Courtney Creek as having important riparian vegetation for the support of fish and wildlife. The Department of Fish and Wildlife has also identified the Calapooia River, Courtney Creek, Warren Creek, and Cochran Creek as sensitive habitat for fish.

Goal 5 requires an inventory of all applicable open space, scenic and historic areas, and natural resources. There are no potential or existing wilderness areas, or federal or state wild and scenic waterways within the planning area. No potential or approved Oregon recreation trails pass through the area.

CULTURAL RESOURCES

Cultural resources involve the activities of man on the natural environment. Brownsville is an area rich in cultural resources. In this section of the background studies the historic aspects of Brownsville will be reviewed along with information pertaining to: citizen involvement, land use, economics, public and private facilities, housing, transportation and urbanization.

HISTORICAL PROFILE

It is believed that the first people to inhabit the Brownsville area were the mound-builders whose earthen mounds line the Calapooia River from Brownsville to Albany.

When the first settlers arrived in the Brownsville area in the mid-1840's, the Calapooia people roamed the land. The Calapooia survived on the rich natural abundance as a hunting and gathering people.

The Calapooia used the canoe as a main vehicle of transport. By means of the canoe, families and whole communities went to their favorite fishing grounds, hunting terrain, nut and berry patches, or to places of abundant wild roots and plants.²

In 1847 through 1859, three Indian wars broke out. They were the Cayuse War 1847-1850, the Rogue River War 1850-1856, and the Yakima War 1852-1859. Although the Calapooia people were peaceful and most likely they did not participate in any of the wars, the fear of uprising must have contributed to the action which in 1856 displaced some 242 Calapooia to the Grand Ronde Indian Reservation.³

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1. Linn Benton Community College Archeologist M. Rosenson.
 2. History of Linn, Linn County Pioneer Memorial Association, a W.P.A. Project.
 3. Land of Linn, F. Mullen (out of context).

The Calapooia who were not displaced were gradually absorbed into the new culture. On August 22, 1922, Aunt Eliza, believed to be the last of the Calapooia people, died in Brownsville. She is buried at Pioneer Cemetery. On June 10, 1924, Oregon Indians were given full citizenship and no longer were compelled to live on reservations.⁴

Several mounds have been identified within the Brownsville Planning Area (Figure 10.5). The presence of these mounds would indicate a high level of prehistoric human activity within this area. The mounds which were identified and mapped by E. H. Margason, Lee Rohrbough, Dr. J. L. Hill, J. G. Crawford, Prof. John B. Horner and A. (Foot) Blevins are by no means a complete inventory of prehistoric sites. More information needs to be gathered on the Calapooia and all people who inhabited the area. If a conscious effort is not made to identify, protect and understand the cultural resources of the area many of these resources may be lost forever, as new development moves in, disrupts the land and new cultural resources begin.

The map shows two mounds within the Brownsville UGB. Discussions with city residents and the landowner indicate that the mound south of the Calapooia River has been destroyed by past industrial activities in the area and is not a valuable resource site. The second mound, north of the river, may be valuable as a resource site but the existing inventory is inadequate to accurately identify the location, quality and quantity of the site. Further study is needed to address the value of the second mound. [Paragraph added by Ord. No. 524, § 15, passed September 8, 1981.]

It is believed that in 1812 Donald McKenzie of Astor's Pacific Fur Company was one of the first white men to venture into the region. He was followed by Duncan M. Dougall who, while in search of beavers and other fur bearers, spent some months among the col-lap-poh-yea-ass.⁵

"...It was the immigration of 1845 that made the first settlement in this country, although they did not arrive

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4. Land of Linn, F. Mullen.
 5. History of Linn County.

Figure 10.5

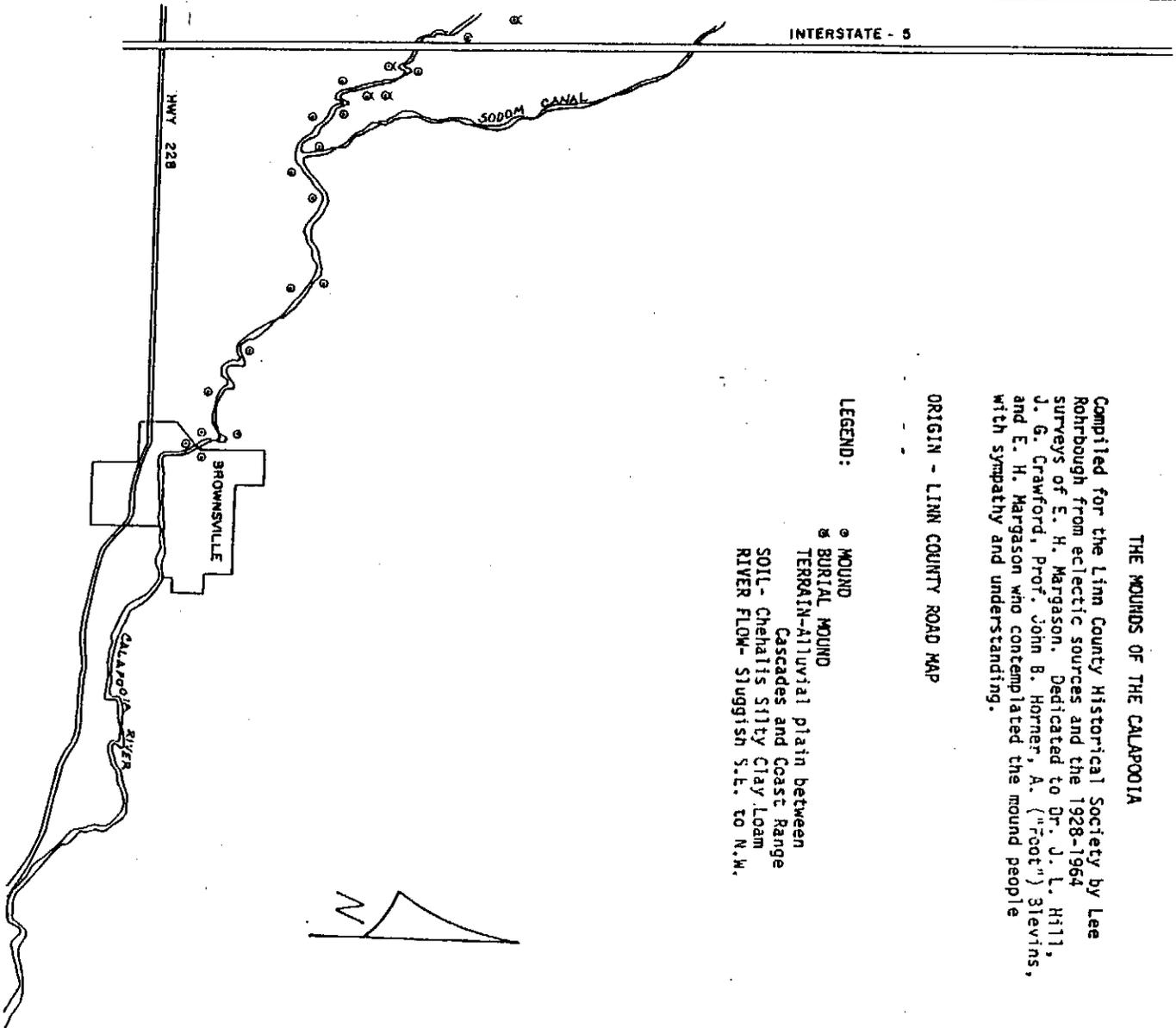
PRE - HISTORIC MOUNDS

THE MOUNDS OF THE CALAPOOIA

Compiled for the Linn County Historical Society by Lee Rohrbough from eclectic sources and the 1928-1964 surveys of E. H. Margason. Dedicated to Dr. J. L. Hill, J. G. Crawford, Prof. John B. Horner, A. ("Foot") Stevins, and E. H. Margason who contemplated the mound people with sympathy and understanding.

ORIGIN - LINN COUNTY ROAD MAP

- LEGEND:
- MOUND
 - * BURIAL MOUND
 - TERRAIN-Alluvial plain between
Cascades and Coast Range
 - SOIL - Chehalis Silty Clay Loam
 - RIVER FLOW - Sluggish S.E. to N.W.



BROWNSVILLE PLANNING AREA

here until the spring of 1846. Up until that time, there was only one settler east of the Willamette River and south of the North Santiam.⁵

The Willamette Valley was settled from the north to the south, the main route of immigration being along the valley edge. As the settlers moved south the trend was to move ahead of the crowd. It was this trend and the urge to see what was over the next hill that in 1845 or 1846 brought James Courtney, Isiah Hutchins, Josiah Osborne, William Finley, Elias Walters, and Austin Walters into the Brownsville area. These men were at the forefront of a wave of humanity that would continue moving south into the frontier. In the fall of 1846, James Blakely, Hugh L. Brown, Jonathan Keeney, and R. C. Finley arrived in the area. The following year, 1847, Alexander Kirk and his son Riley arrived.⁶

All water bodies posed a problem to the immigrants who wanted to reach the other side and beyond. In 1847, Alexander Kirk built a ferry which was used during the winter to cross the Calapooia River. The north ferry landing was in the vicinity of present day Pioneer Park. Because of the ferry, Brownsville was first called Kirk's Ferry or Kirk's Landing.⁷

When gold was discovered in California in 1848-1849, many of the first settlers headed for the riches of the gold fields. Brownsville witnessed this sudden increase in the human parade as the main overland route passed through Brownsville.

The 1850's were prosperous; a post office was established and named Calapooia. James Blakely and Hugh Brown started a store. In 1853 Blakely had Luther White survey and lay out a town site on the south side of the Calapooia River and named it after his uncle, Hugh Leeper Brown.

In 1856, a bridge was built over the Calapooia River and in 1858, a ditch was constructed to supply power.⁸ A grist mill was established. Also in 1858, the City of Amelia was laid out in what is now East Brownsville.⁹

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5. History of Linn County.
 6. Ibid.
 7. Ibid.
 8. Ibid.
 9. Ibid.

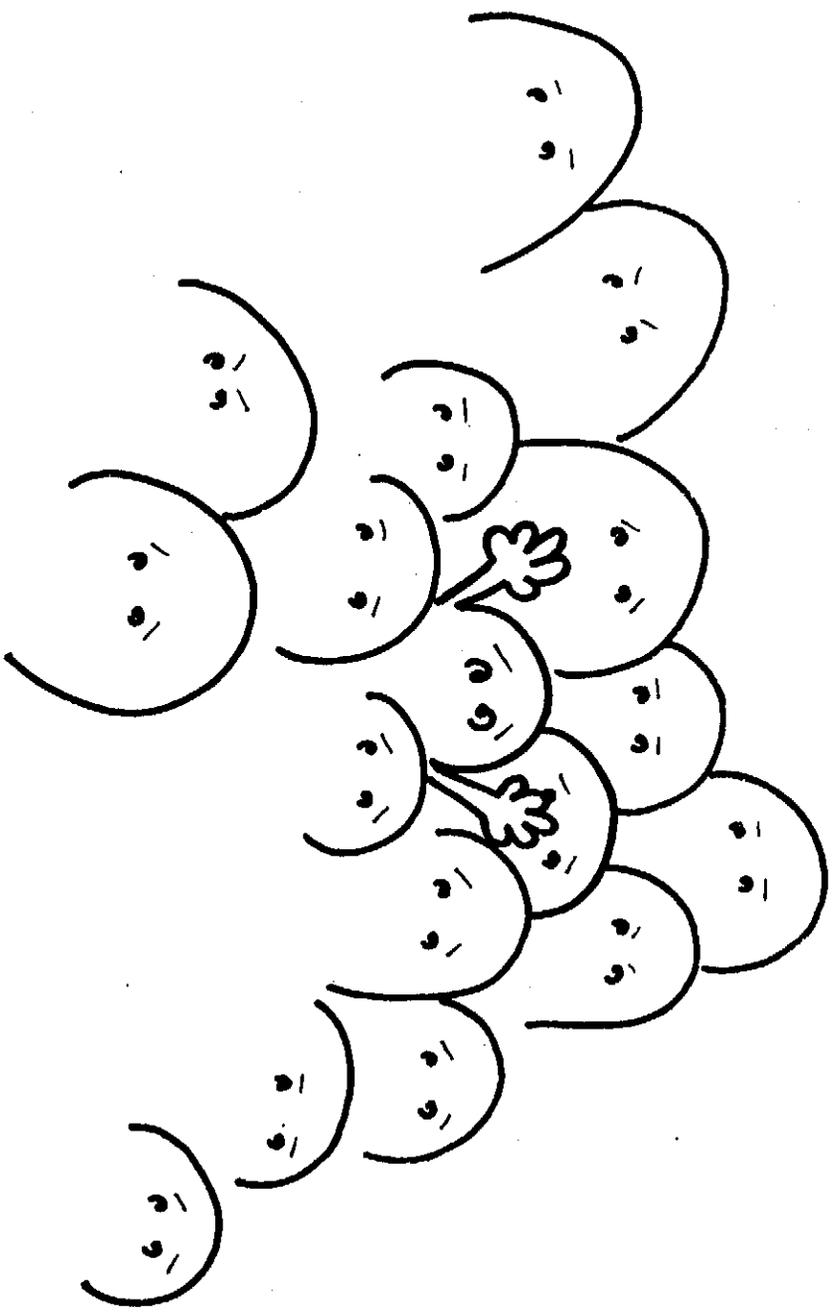
Industrial activity moved into full swing with the construction in 1861 of a woolen mill.¹⁰ The woolen mill was Brownsville's sustaining industry. Although it experienced the peaks and valleys of economic reality, it managed to continue far into the mid-1900's.

North Brownsville was laid out in 1863 creating a third city; all three were as close to each other as one city, and in 1895 the three cities were incorporated as the City of Brownsville.¹¹ Much has been written about Brownsville. As such, the preceding was only an effort to explain the beginnings of the community of Brownsville. Throughout the background studies, reference will be made to pertinent historical aspects of Brownsville. For those who are interested in further historical information on Brownsville, the following references should be explored.

1. Older residents or former residents of Brownsville.
2. History of Linn County: W.P.A. Writers Program.
3. The Land of Linn, by Floyd C. L Mullen.
4. Brownsville, Margaret Standish Carey and Patricia Hoy Hainline.
5. The Brownsville Times, files (Local Newspaper).

-
10. History of Linn County.
 11. Ibid.

CITIZEN INVOLVEMENT BACKGROUND STUDIES



CITIZEN INVOLVEMENT

Goal No. 1 of the Statewide Land Use Planning Goals provides for citizen participation and involvement in all phases of the planning process. Citizen involvement is not new to Brownsville. When Linn County's government was first organized, "all of the county officers with the exception of John McCoy, resided in the immediate locality of Union Point and Brownsville. Irregularly scheduled meetings from the date of organization to the spring of 1851 were held at the Spalding schoolhouse or at the residence of Alexander Kirk." (Mullen, 1971)

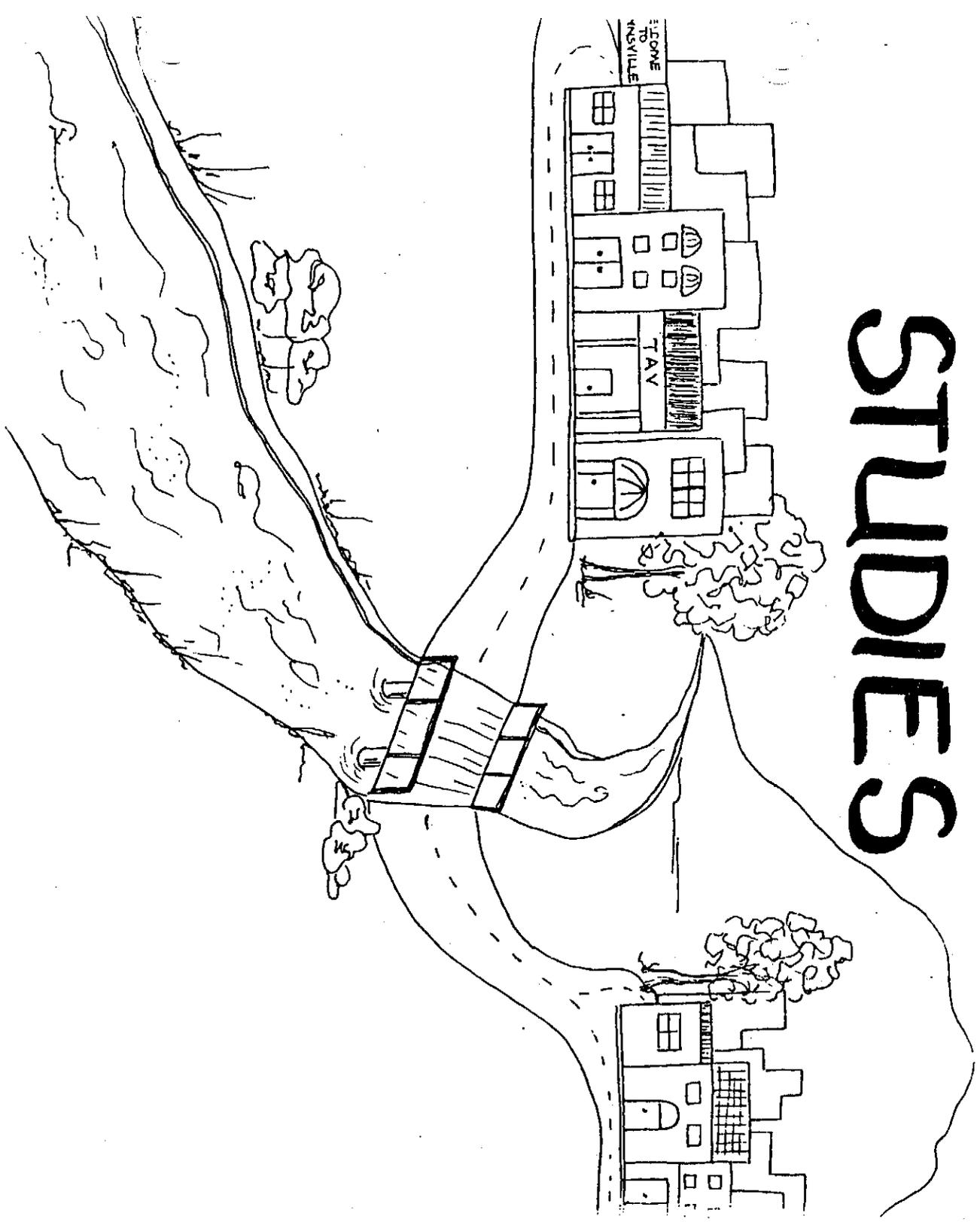
Today the citizens of Brownsville are actively engaged in the planning process through the planning commission and are afforded the opportunity to voice opinions and concerns at planning commission meetings, council meetings, and at City Hall.

While direct communication between the citizens and local officials has always been available, the level of understanding and the ability for the city to fully assess community attitudes has been difficult. As in many communities, citizens do not always become involved until the bulldozers start rolling down their street.

One of the intents of this document is to provide citizens with an understanding of the direction the city is moving. With this understanding, and continued efforts by the city to improve communications, the citizens and the city should be more able and prepared to focus on the aspects of Brownsville which are good, those that need improvement, and those other aspects which will be necessary to meet the challenge of the future.

LAND USE BACKGROUND

STUDIES



LAND USE BACKGROUND STUDIES

Current Land Use: Figure 11.0

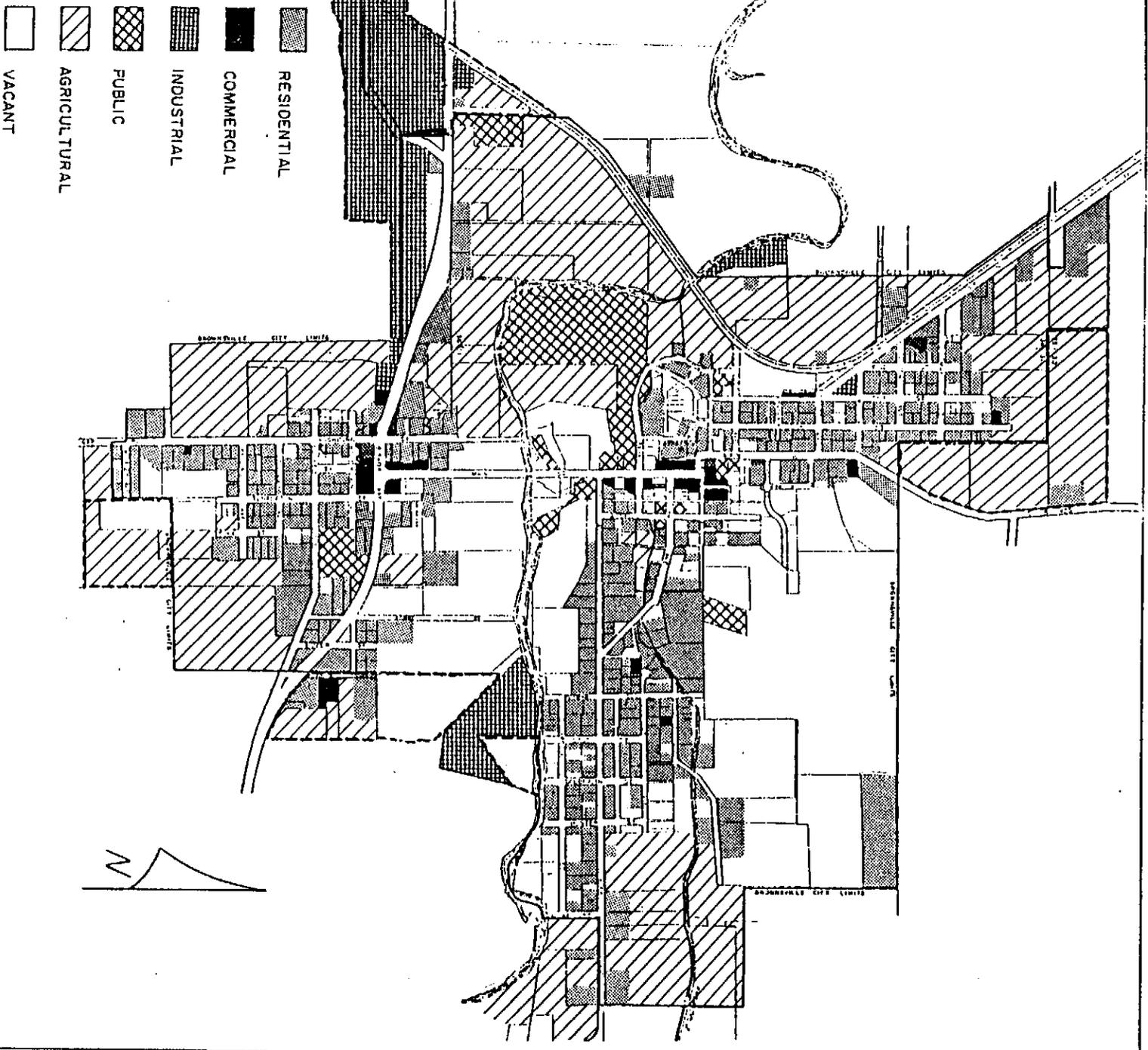
The City of Brownsville contains an area of 862.00 acres. There are currently seven (7) major land use categories. They are: Residential, Commercial, Industrial, Public, Transportation, Agriculture, and Vacant. (Table 3) A land use inventory conducted in 1976 shows the following breakdown:

Table 3
1976 Land Use Inventory

LAND USE	ACRES	PERCENT OF TOTAL
Residential	158.00	18.29%
Commercial	9.06	1.05
Industrial	18.06	2.095
Public	35.19	3.74
Transportation	172.45	20.31
Agriculture	184.00	21.23
Vacant	286.17	33.19
TOTAL	862.00	100.00%

Figure 11.0

CURRENT LAND USE



BROWNSVILLE

SCALE:

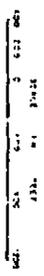


Table 15

Land Use Comparison of Existing and Proposed by Acres and Percent

Type	Generalized Land Use			
	Existing Uses		Proposed Zoning	
	Acres	%	%	Acres
Residential	158	18%	39%	302
Commercial	9	1%	4%	38
Industrial	18	2%	12%	131
Transportation*	172	20%	20%	172
Agricultural	184	21%	N/A	N/A
Vacant	286	35%	N/A	N/A
Public	35	4%	4%	35
Special Development	N/A	N/A	21%	184
TOTAL	862	100%***	100%	862
NOTE: Total Developed**	392**	45%	N/A	N/A

Table 16

Acres and Percent of Land by Proposed Zoning in Identified Floodway

Type	Flood Hazard Areas as Identified from F.I.A. Data, July 1979			
	Acres in the Floodway* (by zone type)		Proposed Zoning not Including Floodway Areas	
	Acres	%	%	Acres
Residential	40	34%	34%	262
Commercial	6	4%	4%	32
Industrial	17	15%	15%	114
Transportation*	N/A	22%	22%	172
Agricultural	N/A	N/A	N/A	N/A
Vacant	N/A	N/A	N/A	N/A
Public	23	2%	2%	12
Special Development	4	23%	23%	180
TOTAL	90	100%	100%	772

*Approximation.

**Developed land includes all land except agriculture and vacant.

***May not add due to rounding.

Industrial and Commercial Land Projections

Existing lands used for industrial and commercial lands amount to 27 acres: 9 commercial and 18 industrial. If these totals are divided by population, .7 acres per 100 population for commercial land and 1.4 for industrial, result.

These ratios are carried out to the years 1990 and 2000 populations, resulting in 12 commercial acres and 24 industrial acres forecast for 1990; 15 and 30 for 2000. This is shown in graphic form in the following table.

Table 17

Lands for Commercial and Industrial Development

Land Use Type	Selecting Acres in Use in 1978	Ratio of Acres to 100 Population**	Projected Land Year 1990*	Projected Land Year 2000**	Comprehensive Plan 5000 Acres	Year 1990 Acres per 100 Popu-lation Ratio***	Year 2000 Acres per 100 Popu-lation Ratio***	Land in Excess of Projected Need
Commercial	9	.7 Acres:100 pop.	12 acres	15 acres	35 Acres	2.25 Acres:100 pop.	1.75 Acres:100 pop.	23
Industrial	18	1.4 Acres:100 pop.	24 acres	30 acres	131 Acres	5.9 Acres:100 pop.	4.08 Acres:100 pop.	101
Total	27	N/A	36 acres	45 acres	166 Acres	N/A	N/A	124

*Based on 1978 Portland State University population estimate.

**Based on 1978, acres to 100 population ratio adjusted to year 1990 population projection of 1700.

***Based on 1978, acres to 100 population ratio adjusted to year 2000 population projection of 3155.

**Based on Comprehensive designation and total acres for specific use divided by 100 population projection for year 1990.

***Same for year 2000.

The proposed zoning allows 38 acres for commercial and 101 acres for industrial development, fulfilling the projected acreage (as shown above).

The proposed zoning also allows 23 more acres of commercial land and 71 more acres of industrial land than is projected. The total areas zoned, if developed completely, would bring Brownsville up to the statewide average* of 4% developed land for commercial and would be very close to the statewide average of 11% for industrial land.

* Average figures were based on cities below 2500 population in Land Use in 33 Oregon Cities.

The Plan calls for more land for industrial and commercial uses than projected for the following reasons:

- 1) A need to have available land to provide a choice in the market as required by Goals 14, 2, and 9.
- 2) Locational factors related to both commercial and industrial land as identified in the Plan.
- 3) Energy consequences which have drastically changed. This change will result in one of two situations if not both:
 - a) People will move out of Brownsville to larger population centers where employment, commercial and other social services and activities are available, or
 - b) There will be an increase in the amount of employment, commercial and other services and activities available in Brownsville.
- 4) Although uncertain at this time and also subject to energy constraints the county is planning to provide for rural residential development within the Brownsville sphere of influence. An increase in development of this type (rural residential) will increase the existing population of the region (Brownsville sphere of influence) resulting in increased commercial activity and the increased need for employment and social services and activities.
- 5) Both commercial and industrial zones allow other uses which although they may be conditional will remove a portion of the land for commercial or industrial use. This fact coupled with existing nonconforming uses, will reduce the overall amount of land.
- 6) All of the above factors can also be summed up by the community's awareness of the energy problem and their desire to become increasingly self-sufficient. The knowledge that if the city fails to provide land for the various uses, and also be ready with a plan to guide the development and growth of community, then many citizens of the community will be forced through economics to move.

Residential Land Use

Residential land accounts for 18.29% of all land within the City of Brownsville. (Table 4) The residential land use category includes all housing types: single family, multiple family, and mobile home. A further breakdown of residential land shows the following:

Table 4

Residential Land Use in the City of Brownsville

Residential Land	No. of Units	Acres	Percent of Total Residential Land (157.68 = 100%)
Single Family	411	146.51	93.0%
Multiple Family	25	2.38	1.5
Mobile Homes	42	8.79	5.5
TOTAL	478	157.68	100.0%

There are three distinct residential neighborhoods in Brownsville. The neighborhoods correspond to the Old Town sites of Brownsville, Amelia and North Brownsville.

Most of the new construction has taken place in East Brownsville (Amelia) with framed single family dwellings the predominant housing type.

North Brownsville has also experienced an increase in new housing starts; the predominant type being framed single family dwellings.

Multiple family housing (duplex and up) has for the most part located around the old woolen mill site of East Brownsville. At present, there is a total of 25 dwelling units within the multiple family type. An increased demand in the housing market coupled with rising construction and land costs may bring about a rise in the numbers of multiple family dwellings constructed in the next twenty years.

Mobile homes (which include all factory fabricated living units) are being sited in Brownsville in increasing numbers. At present, there are 42 mobile homes. Approximately 25 mobile homes are located in two mobile home parks. The largest mobile home park with 21 living units is located in South Brownsville along the north side of Highway 228. The second mobile home park is located in North Brownsville along Linn Way; it has 4 mobile homes.

The remaining mobile homes are scattered throughout the three neighborhoods on individual lots.

Mobile homes provide many aspects which make them desirable as living units; they can be sited quickly, have low maintenance responsibility, and (to some extent) are economical.

Many of the residential structures in Brownsville are of a historic nature; built before 1920. An inventory compiled by local citizens identified 177 residential structures which were believed to predate 1920; many of these structures were built before 1880.

The community has shown a real interest in identifying and researching historic structures. Each structure identified in the inventory has a fact sheet where pertinent information regarding construction, occupants and local history is recorded. While some fact sheets are more complete than others, the overall effort should prove to be very beneficial.

Commercial Uses

Commercial uses are all general business and service stores, including retail and wholesale outlets, service stations, garages and small workshops.

The largest concentration of commercial activity in Brownsville is in the Old Town commercial area; situated on the north side of the Calapooia River. The Old Town commercial area lines both sides of Main Street from Stanard to Kirk, both sides of Stanard Avenue from Main to Averill, Spalding Avenue to Averill Street, Park Avenue from Main Street to Averill Street and Averill Street from Stanard to Kirk.

The Old Town commercial area lends itself to the walking shopper as the density of commercial activity is rather high and parking can be viewed as limited even though a large parking lot is present between Stanard Avenue and Spalding Avenue.

Many of the commercial buildings in Old Town were constructed around the turn of the century. The City of Brownsville has for some time taken a special interest in preserving the historical charm of the Old Town commercial area. Several buildings have been restored in a style common to the early 1900's and late 1800's. Through resolution, the Planning Commission has the responsibility of reviewing all construction and improvements to determine if the work is in keeping with the community's desires towards historic preservation. The methods and controls used to date have been weak in that the Planning Commission could only advise. To assure the desired results, the City will need to establish guidelines.

A limited amount of commercial activity is also present along Highway 228 south of the Calapooia River; and also in North Brownsville removed from the Old Town area. Existing commercial land totals only 9 acres, with zoning allotting 38 acres.

The following is a list of commercial establishments presently located in Brownsville:

1. Ace Sporting Goods and Liquor Store
2. Blackie's Arco
3. Bob's Car Wash
4. Brownsville Feed and Seed
5. Brownsville General Store (Natural Foods)
6. Brownsville Meat Lockers
7. Brownsville Parts and Service (Auto Parts)
8. Brownsville Tavern
9. Brownsville Times (Newspaper)
10. Calapooya Drive-In
11. Carlson Hardware
12. Central Linn Insurance Agency
13. Citizen's Valley Bank
14. Community Drug Store
15. Donna Jean's Beauty Shop
16. Hair Mill (Men's and Women's Hair Fashions)
17. Joe's Deli
18. Johny's Rocket (Gas Station)

19. Landra Queen (Coin Laundry)
- \ 20. Norm Morgan Realty
21. Norm's Electric (Sales and Repair)
22. Pioneer Market (Grocery)
- \ 23. Potpourri (Sundries)
- \ 24. Sew What's New (Fabric Store)
- \ 25. Schaffer Shoe Repair
- \ 26. Then and Now Beauty Shop
27. Town Shop (General Store)
- \ 28. Victorian Cafe
29. Village Pantry (Grocery Store)
- \ 30. Wagon Wheel Realty
- \ 31. Western Auto (Hardware)

Home occupations provide some residents with income. While the commercial activity generated through home occupations is limited, the overall impact on the community has a positive economic effect.

Industrial Uses

Industrial activities include the assembly, fabrication, milling, processing, manufacturing, storing, and warehousing of materials both raw and partially processed or recycled, and any related activity. Currently, industrial activities in the city occupy 18 acres, with a total of 101 acres being zoned for industry.

Industrial uses within the City of Brownsville are limited. A small electronics assembly plant, Quality P.C., has recently opened in Brownsville, and another industrial use includes fuel storage. Major industrial activities are located along the Southern Pacific Rail line which passes through the City. These major industries which are outside the city limits all involve wood products to some extent, however, the nature of the industries are somewhat diversified. Bohemia, Inc., the largest industrial employer, mills lumber and other wood products. Woodex utilizes wood waste and bio-mass to manufacture fuel pellets, an alternative energy form. Linn Plyboard uses veneer and wood chips to manufacture a unique type of building material similar to plywood or particle board.

The physical landscape and land use patterns in Brownsville make certain areas of town more desirable for industrial location than others.

The Southern Pacific Railroad which passes through Brownsville provides a transportation link which can be desirable to many industrial activities. Highway 228 provides direct links to Sweet Home, Halsey and to some extent Harrisburg; but the most important link that 228 provides is to Interstate Highway 5.

The location of Highway 228 south of the Calapooia River can provide industrial activities with access that does not pass through the major residential or commercial areas of Brownsville.

Semi-Public

Brownsville is the home of seven churches. They are: Assembly of God, Baptist, Christian, Latter Day Saints, Lutheran, Mennonite, and Presbyterian.

Other semi-public clubs and organizations include: Friends of the Library, Pioneer Association, Womans Club, Pollyanna, Wind-Jammers (C.B. Radio), Chamber of Commerce, Garden Club, Senior Citizens, Lions Club, Alcoholics Anonymous, History Club, T.O.P.S. (taking off pounds sensibly), Pioneer Saddle Club, Medical Board, Recreation Center Board, Masons, Eastern Star, Rainbow, Womans Study Club, IOOF, Four-H, Boy, Girl Scouts, and Blue Birds.

Public Uses

Public uses include the Library, City Hall, Fire Department, Post Office, Linn County Museum, Moyer Historic House, Brownsville Elementary School, Brownsville Recreation Center, Pioneer Park, Tennis Court-Playground Park, Blakely Park, Monument-Library Park, Pioneer Cemetery, Corner Park, and city streets. Public uses occupy 35 acres in Brownsville, with zoning not proposing any change in amount.

Public uses provide the residents of Brownsville with access to government, education, information, recreation and open space.

Transportation

Transportation facilities are the third largest use of land in Brownsville. The major land requirement for

transportation is street right of way. Street right of ways are somewhat confusing in that a right of way may be 40 or 60 feet wide, while the actual street may be rather narrow and in many cases the actual street is not in the center of the right of way. Lands devoted to transportation are estimated to occupy approximately 172 acres.

The right of way is designed to provide the area for the street, sidewalk and utilities. Often the right of way is wider than the street. Right of ways are also important when a street is widened, providing the additional area without necessitating costly land acquisition.

Agricultural Use

Within the city limits of Brownsville, several parcels of land are being productively farmed. In some cases, the city limits divide a parcel with much of that parcel lying outside the city limits. Brownsville is surrounded by agricultural land (particularly on the south, east and north) which makes it difficult for the casual observer to determine where the city ends, and agriculture land begins. Agricultural land occupies approximately 184 acres in the city.

Many residents of Brownsville raise livestock, have large gardens, and grow fruit trees. For all intent and purpose, Brownsville can be considered an agricultural community. The lifestyle which both small and large scale agriculture provide is important to many residents of Brownsville. To a large extent, this mix of agriculture and community living contributes to the character of Brownsville.

Vacant Land: Figure 12.0

Vacant land includes all parcels which have not been developed or [for] which no use is now present and no structure exists. Vacant land was also viewed as over-size parcels (1 acre) with a structure. Under these situations the structure was excluded along with 10,000 square feet. The remaining land was then considered vacant. A third type of vacant land was also considered. The third type is those parcels which are too small to meet the minimum lot size of the zone in which they are located.

Vacant land accounts for 33.19% of all land in Brownsville (286 acres). Vacant land is not confined to any one area of Brownsville although large tracts of vacant land form significant blocks on the hill north of Old Town, in the northern portion of the city between Linn Way and the Brownsville-Lebanon Road, in the southern portion of Brownsville to the west of Gap Road, and along the Calapooia River.

Brownsville Planning Area: Figure 13.0

As part of the planning process, the area outside the Brownsville city limits was also inventoried, using the same land use classifications as were used inside the city. The following breakdown is presented:

Table 5

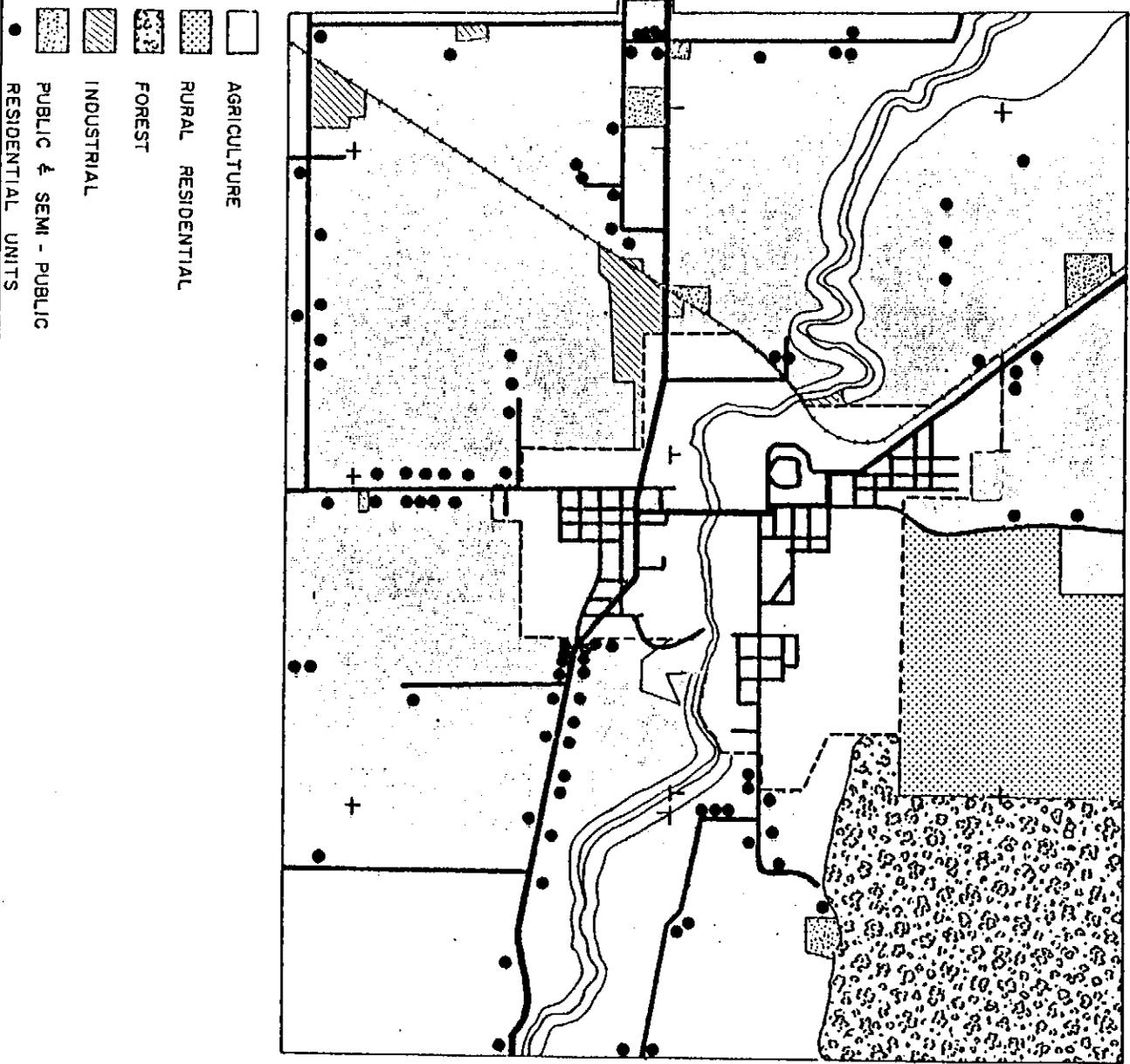
LAND USE IN THE PLANNING AREA

<u>Land Use</u>	<u>Acres</u>	<u>Percent of Total</u>
Residential	377.09	7.65%
Commercial	10.92	.22
Industrial	90.15	1.83
Public	45.20	.92
Transportation	278.08	5.64
Agriculture	2484.72	50.45
Vacant	1639.09	33.28
TOTAL	4925.25	100.00%

Residential land uses in the Planning Area are of two types: farm related residence and non-farm related residence. By far there are more non-farm related residences in the Planning Area. The largest concentration of non-farm related residences are located in the Oak View Park Land Division (platted Oct. 1968 Survey #10047) adjacent to the northern city limits of Brownsville. Oak

Figure 13.0

LAND USE OUTSIDE CITY LIMITS



BROWNSVILLE
PLANNING AREA

SCALE: 1" = 1/2 MI.



View Park consists of 63 parcels ranging in size from two (2) to seven (7) acres. All residential uses in Oak View Park are on individual well and sewage systems (septic).

Other non-farm related residences are scattered along Gap Road, and Highway 228. For the most part it can be said that the remaining residences which are present in the planning area are farm related.

Mobile homes appear to be the leading new housing type locating in the planning area. The reason for this is unknown but may be related to the cost of land being high.

Commercial activity in the Planning Area is limited to home-operated service outlets. The City of Brownsville is fortunate that more commercial activity has not located along the major roads leading to the city. Commercial development along major highways such as 228 is not in the best interest of the community as this type of development makes it difficult for local shoppers to walk between stores and necessitates shopping by car - an energy intensive activity. The presence of commercial activity will increase the amount of local traffic and damage the function of the Highway, which is to move traffic through an area.

Industrial activities in the Planning Area are for the most part located in the southwest. Bohemia, Inc. wood products is located adjacent to the south city limits along the south side of Highway 228. Bohemia, Inc. has direct access to Highway 228 and the Southern Pacific Railroad. Woodex (fuel pellets) is located in the southwest corner of the Planning Area. Woodex has indirect access to Highway 228 over County Road 507, and direct access to the Southern Pacific Railroad. Linn Plyboard is located on the same 25.41 acre parcel as Woodex and shares the same access. Both Woodex and Linn Plyboard are removed from the city by a distance of just over one mile.

The active gravel operations which were discussed in the Natural Resources section were included in the Industrial inventory when compiled in 1976.

Public and Semi-Public uses in the Planning Area are the city's north and south sewage lagoons, Pioneer Cemetery, and Pacific Power and Light's Substations.

The north sewage lagoon is located approximately 1/4 mile northwest of the city along Linn Way. The south sewage lagoon is located west of the city limits along the north side of Highway 228 and west side of the Southern Pacific Railroad.

Pioneer Cemetery is owned by the City of Brownsville but is located about a 1/4 mile east of the city limits.

The Pacific Power and Light Substations are located west of the city on both sides of Highway 228.

Transportation uses include State Highway 228, County Roads 425, 427, 428, 504, 505, 506, 507, 509, 767, 768, 770 and Market Road 11. The Southern Pacific Railroad also passes through the Planning Area and adjacent to the west city limits.

Agriculture uses in the Planning Area include rye grass and related grass seed and pasturing. Although these types of agriculture activities are low intensity for a large part of the year, related agriculture practices such as field burning can impact the local environment rather strongly.

On several occasions smoke from field burning fills the city air. Field burning smoke is not only generated from fields within the Planning Area but comes from as far away as the Halsey-Harrisburg area.

Another related grass seed farming activity is winter sheep grazing; while sheep grazing does not impact the city, the proximity of the city can be hazardous to the sheep. Dogs owned by city residents can cause injury and death to sheep. However, no incidents of sheep being killed by dogs have occurred in the Brownsville Planning Area, though they have happened in other areas of Linn County.

Vacant land was considered to be all land not being farmed or used in any other manner. As a result, forest land fell into the vacant land classification by default.

Forest land is concentrated in the northeast section of the Planning Area. By its nature, forest land takes many years to be productive, with productivity increasing for as many as 40* to 80** years. To maximize the forest resource, potential forest lands should be allowed to grow to maximum productivity.

For the most part, vacant land is nonproductive to man, or its potential has not yet been realized. Most vacant land in the Planning Area is found along the Calapooia River where seasonal flooding makes it undesirable for use. However, vacant land is a resource as it provides habitat for wildlife, and should be considered as habitat.

The Impact of Land Use on the Environment

It is important to realize that human activities and land uses have an impact on the natural environment; conversely, the natural environment can have an impact on human activities and land uses.

A byproduct of human activity is pollution. Air pollution is most noticeable in Brownsville where the air is usually clean and fresh. Air pollution can come from several sources such as automobiles, field burning, slash burning and even wood stoves. At present industrial air pollution is not a problem in the Brownsville area.

The air flow in the Willamette and Calapooia Valleys can usually be counted upon to move any pollutions out of the area. However, because of the physical shape and dimension of the valleys, periods of poor air circulation brought on by inversions and other weather phenomena can cause pollutions to become trapped, resulting in slow dissipation and less than clean fresh air.

Under the U.S. Environmental Protection Agency (E.P.A.) regulations, clean air regions are designated in one of three classes known as Prevention of Significant Deterioration classes (PSD). Brownsville is located in a Class II P.S.D., as is most of the Willamette Valley.

Significant deterioration is caused by air pollution. In the Brownsville area field burning is the leading cause

* State of Oregon Department of Forestry growth cycles.

** United States Forest Service growth cycles.

of reduced air quality. The method used in judging significant deterioration considers the cumulative effect of the pollution. Increase in the number of acres allowed to be burned will reduce or eliminate the chance of new industry obtaining pollution permits. Therefore, the continued practice of field burning may result in only non-air-polluting industries locating in the area.

The Oregon Department of Environmental Quality (D.E.Q.) is responsible for implementation of the 1972 Clean Air Implementation Plan. The Oregon Environmental Quality Commission (E.Q.C.) has legal authority to adopt administrative rules concerning environmental quality. The D.E.Q. as the administrative body of the E.Q.C. solicits comments on proposed regulations of the E.Q.C. Notice of all applicable proposed rule-making action is sent to the City of Brownsville for comment.

Noise Inventory

There are no significant generators or sources of noise in the City of Brownsville. Noise levels are low enough not to exceed D.E.Q. standards. Occasionally there are background noises from passing automobiles, trucks, and train traffic. Observance of applicable D.E.Q. regulations for any future development of potential noise sources should maintain the low noise level currently around Brownsville. ["Noise Inventory" added by Ord. No. 524, §4, passed September 8, 1981.]

Energy

The City of Brownsville, as most of the country, is at the mercy of external energy supplies for everyday activities. The leading types of external energy are fossil fuels (oil and gas), electricity (hydro and nuclear), and wood.

With the exception of wood, Brownsville must import all its energy. This has not always been the case. Prior to the 1920's, electricity was not available to many rural areas from power companies. (Mullen 1970) Brownsville's first power source for commercial and industrial use was water power, supplied by the Brownsville ditch constructed by James McHarg. Water power ran a grist mill and later the Brownsville woolen mill. (History of Linn County, p. 33)

During the winter the stream flow of the Calapooia is substantially increased. The potential is therefore available to produce seasonal energy from the Calapooia. Other sources such as solar and wind could also be utilized to generate electricity and reduce dependence on external energy.

An energy audit would be required to understand where (and how much) energy is being used in Brownsville. Such audits are available through Pacific Power and Light (P.P.&L.) for homes and businesses under P.P.&L. Weatherization Program, and through Northwest Natural Gas Weatherization Program. Both weatherization programs are in part financed by the State of Oregon in that if a person wishes to improve their weatherization through P.P.&L. or Northwest Natural Gas, they may apply for a loan at 6 1/2% interest over a 10 year period. Weatherization, which is primarily improved insulation, can save energy and money through time.

The following diagrams (Figure 13.5) show how energy is used on a statewide basis. Knowing where the major energy use is can be helpful in targeting conservation measures.

In an effort to utilize all electrical energy potential, Pacific Power and Light Company was granted permission from the State Public Utility Commission to buy electricity from any and all generating sources. Pacific Power and Light will now buy electricity at the same standard rate per kilowatt hour which it charges its customers.

Energy used in transportation accounts for 56.42% of all personal energy used in Oregon. Because of Brownsville's location and low employment and commercial opportunities, residents travel to larger centers for a wider and more competitive range of goods and services.

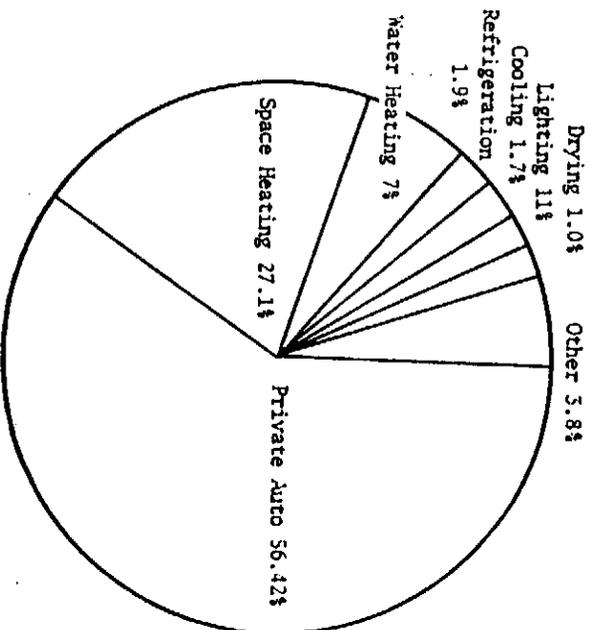
Unless Brownsville, as a community, is successful in attracting more commercial and employment opportunities, energy for transportation will continue to cut deep into the total energy picture.

It should, however, be pointed out that Brownsville can take positive action in the reduction of energy from external sources. The key to reducing energy is knowing where and how much energy is used. In other words: Patching up the leaks will save energy.

ENERGY USES

Figure 13.5

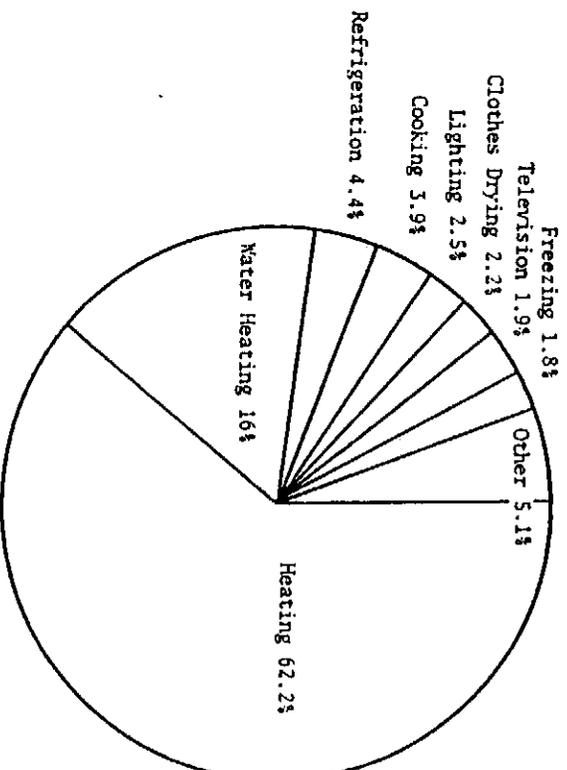
PERSONAL USE OF ENERGY IN OREGON



Personal consumption was 15% of total direct energy used. 100 million Btu's per capita.

Source: Community Energy Planning, Oregon Department of Energy

OREGON'S RESIDENTIAL DIRECT ENERGY USE 1977



Source: Community Energy Planning, Oregon Department of Energy.

History Inventory: Figure 14.0

A requirement of Goal #5 of the Statewide Land use planning goals is inventory the location, quality and quantity of historic areas, sites, structures, and objects.

To aid in this inventory, the State Historic Preservation Office has developed the Statewide Inventory of Historic Sites and Buildings. However, no structures, sites or objects for Brownsville are identified in the State inventory.

The National Register of Historic Places identifies the Moyer House, built in 1881 by John M. Moyer. The Moyer House exists today as an example of Italianate architecture and is located at 204 Main Street, Brownsville.

The C. J. Howe Building located on the southeast corner of Main and Spalding has been nominated to the National Register of Historic Places. The C. J. Howe Building is a two story brick commercial building, circa 1900.

The home of John and Amelia Brown located about one mile east of Brownsville on Highway 228 is also identified on the National Register of Historic Places. The Brown home, currently named "Atavista Farm", is an example of Italianate architecture built in 1876. It is restored and is now owned by Nelson Jones and Jack Swearingen.

In an effort to identify and inventory historic structures, sites, and objects in Brownsville a group of local citizens volunteered their time and set out to inventory and investigate the history of Brownsville. Aided by Phil Dole (Historic architect) the group developed a method and began the survey. To date, 177 residential structures and 15 historic sites have been identified. The survey is by no means complete, as Brownsville has a wealth of historic resources. The surveys are on file at the City Library and at City Hall.

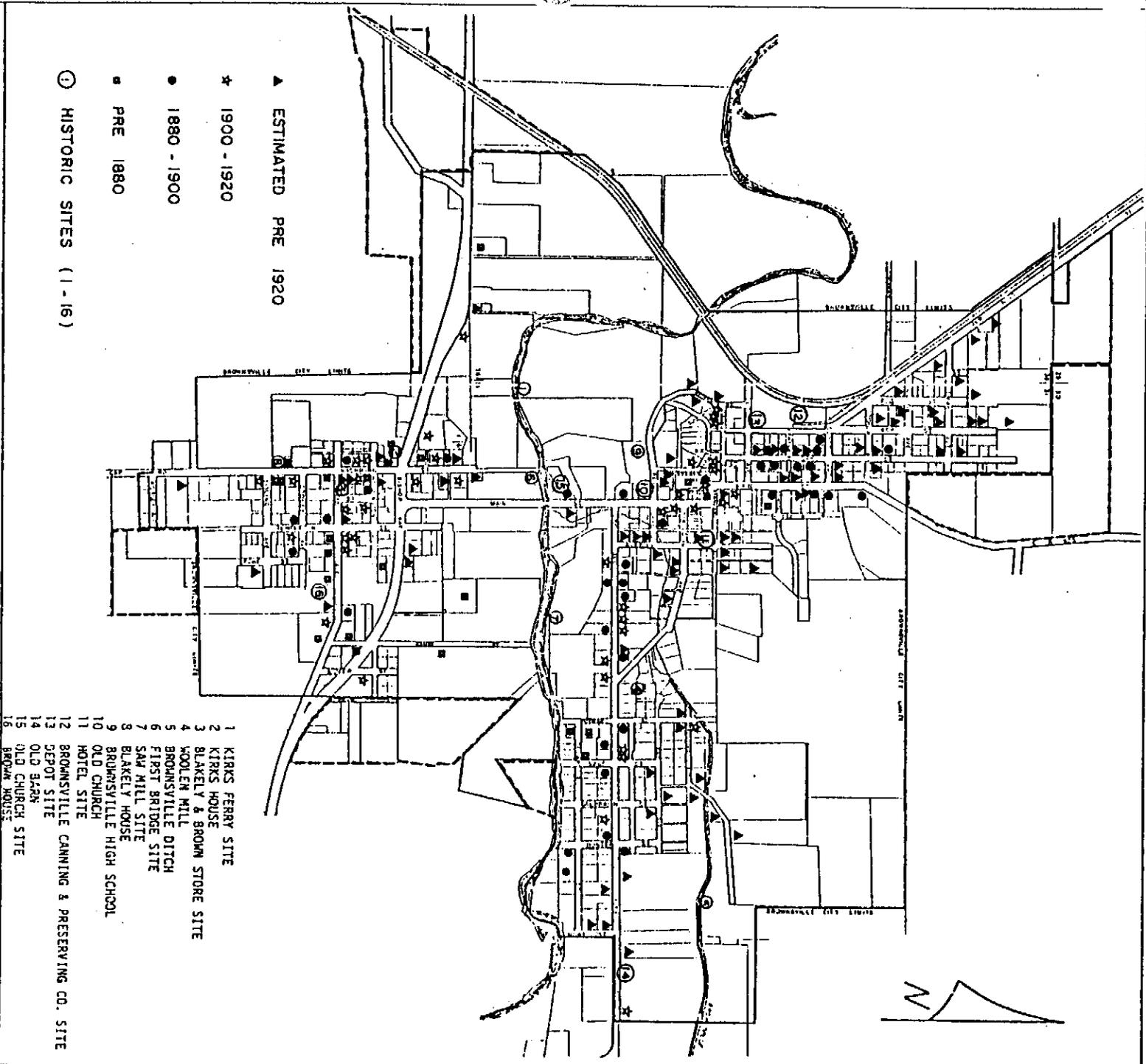
Several federal and state laws address historic sites, structures and objects. The following is a list of existing federal and state legislation:

Federal:

1. Historic American Sites Act (1935) made protection of historic resources a national policy and established the National Register of Historic Places.

Figure 14.0

HISTORIC INVENTORY



BROWNSVILLE

2. National Trust for Historic Preservation (1941) is a private, nonprofit organization intended to educate the public about historic preservation.
3. National Historic Preservation Act (1966) established a Program of matching grants-in-aid to states and the National Trust and established cooperation with the state for administration within their jurisdictions of the National Register program.
4. Transportation Act (1966) provides for protection of historic sites threatened by highway construction.
5. National Environmental Policy Act (1969) requires consideration of federal project impact on cultural resources as part of the overall environmental assessments.

State:

1. H.B. 2476 provides for special tax relief on buildings listed in the National Register of Historic Places.
2. H.B. 2333 encourages retention of single-family residences in industrial or commercial zones by assessing property value as a residence.
3. H.B. 2342 allows for a tax exemption on improvements made on rental properties that are 25 years of age or older.
4. H.B. 2344 exempts from assessment increased maintenance repairs or replacement work done on an existing dwelling.

Local Ordinances

To further encourage preservation of historic sites in Brownsville the City can adopt an ordinance which would encourage historic preservation.

Water Resources

As it has been stated, the Calapooia River is the major water body within the Brownsville Planning Area. The

water supply for the City of Brownsville comes from the Calapooia River. Presently an infiltration gallery is functioning and in the future five (5) shallow wells adjacent to the river in Pioneer Park will supply city water.

Concern has been voiced about the amount and quality of water within the Calapooia River. Although the Calapooia provides year round water, seasonal fluctuation can be great.

The Water Resources Board of Oregon under authority of ORS 536.300 has completed a study of the Middle Williamette River Basin, of which the Calapooia River is a part. As a result of the study, the following resolution was adopted June 22, 1964:

For the purpose of maintaining a minimum perennial streamflow sufficient to support aquatic life, and of attaining the highest and best use of waters released from storage, no appropriations of water except for domestic or livestock uses or waters to be legally stored or legally released from storage shall be made or granted by any state agency or public corporation of the state for the waters of:

1a. The Calapooia River or its tributaries above USGS Gage No. 14-1720 (SE 1/4, Section 15, Township 14S, Range 1W.) at Holley, Oregon for natural flows of the Calapooia River below 30 cubic feet per second plus waters released from storage of up to 340 cubic feet per second measured at the aforementioned gage.

1b. The Calapooia River or its tributaries above USGS Gage No. 14-1735 (NW 1/4, Section 13, Township 11S, Range 4W.) at Albany, Oregon for natural flows of the Calapooia River below 30 cubic feet per second plus waters released from storage of up to 340 cubic feet per second measured at the aforementioned gage.

Other groups and agencies who are actively involved and interested with the waters of the Calapooia are:

1. The Calapooia Irrigation District (Figure 15.0).
2. The Division of State Lands.
3. The Department of Fish and Wildlife.
4. The Department of Commerce: Building Codes.
5. The Public Utilities Commission.
6. The Department of Environmental Quality.
7. The U.S. Army Corps of Engineers.
8. The Federal Insurance Administration (Flood Hazard Mitigation).
9. The U.S.D.A. Soil Conservation Service.

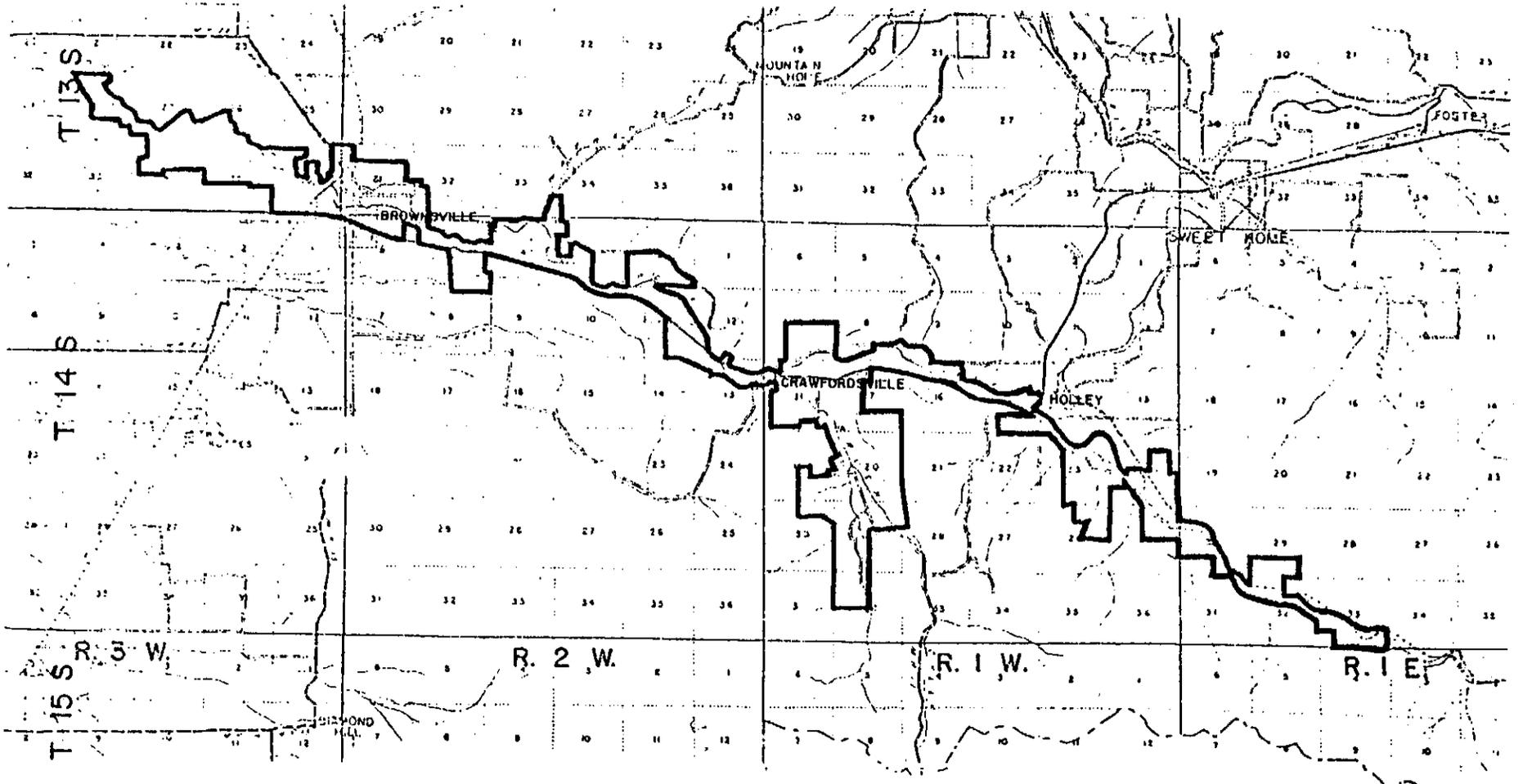
At present, the Calapooia River is classified by the U.S. Army Corps of Engineers as a non-navigable river (waterway). This classification lessens the degree of controls and the number of Federal agencies involved in activities of the River. However, the Calapooia River is addressed under Section 4 of the Clean Water Act.

The Division of State Lands is currently studying the history of the Calapooia River to determine if under state classification (different than Federal) the Calapooia should be classified as navigable. Such a determination would change requirements related to resources and activities within the high water line of the Calapooia River. Although no official determination has been made to date, it is likely that the Calapooia River will be recommended for the navigable classification by the Division of State Lands. The key to the recommendation is based on historic information that the Calapooia River was used to raft logs from river mile 156 (near Dollar) to Albany.

Comprehensive Plan Designations: Figure 15.5

In developing the Comprehensive Plan for the City of Brownsville, the natural environment and human environment were studied. The results of these studies are manifest in the Comprehensive Plan Map and in the goals and policies.

REVISED CALAPOOIA IRRIGATION DISTRICT



BROWNSVILLE

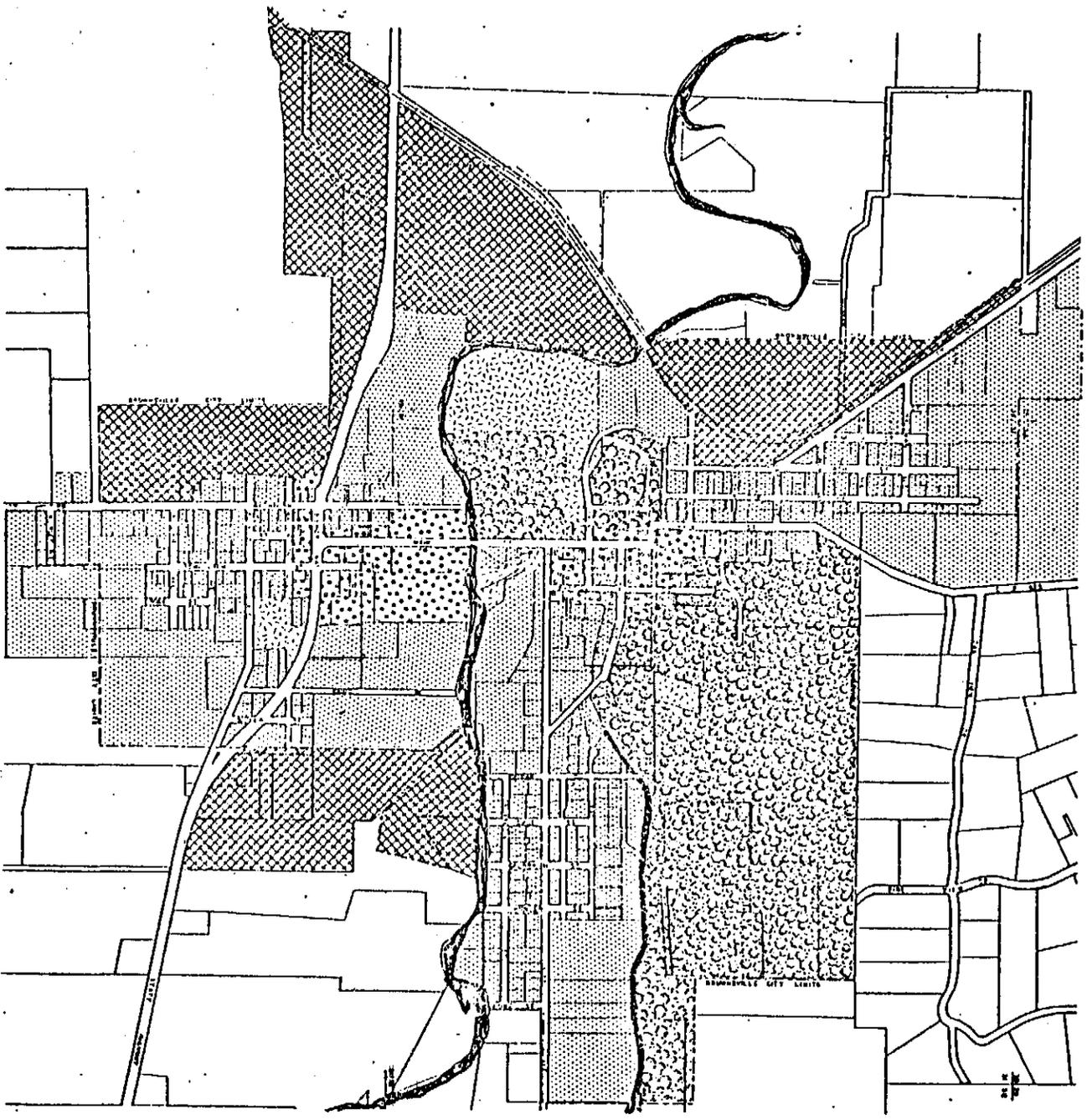


SCALE 1/2" = 1 MI.

Figure 15.0

Figure 15.5

COMPREHENSIVE PLAN MAP



[Figure 15.5 amended by Ord. No. 524, sec. 10, passed Sept. 8, 1981.]

BROWNSVILLE

LEGEND

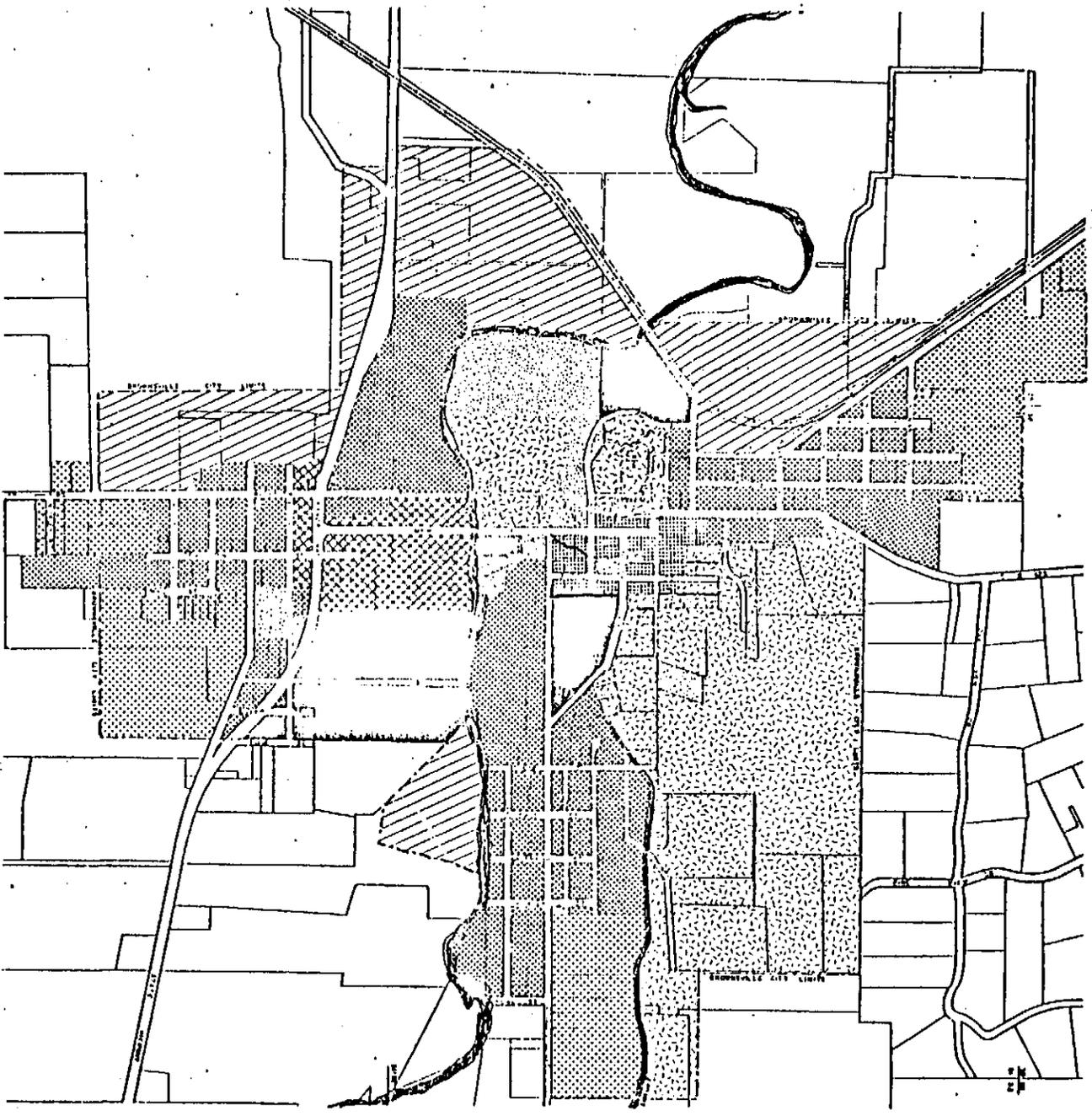
-  SPECIAL DEVELOPMENT
-  RESIDENTIAL
-  COMMERCIAL
-  INDUSTRIAL
-  PUBLIC

SCALE: 1/2 MI. = 2.8"



Figure 15.6

ZONING MAP



[Figure 15.6 added by Ord. No. 524, sec. 11, passed Sept. 8, 1981.]

BROWNSVILLE

LEGEND

-  PUBLIC
-  LT. INDUSTRIAL PARK
-  SPECIAL DEVELOPMENT
-  VOLUME COMMERCIAL
-  OLD TOWN COMMERCIAL
-  LOW DENSITY RESIDENTIAL
-  MEDIUM DENSITY RESIDENTIAL
-  HIGH DENSITY RESIDENTIAL

SCALE: 1/2 MI. = 2.8"



In an effort to aid the reader and the citizens of Brownsville, a brief discussion of the Comprehensive Plan designation is in order.

The Comprehensive Plan Map* shows five (5) use designations. They are: Public, Special Development, Residential, Industrial, and Commercial. In addition to these designations, two (2) overlay designations are also included. They are: Flood Hazard and Resource.

Public: The Comprehensive Plan identifies areas as public. Public areas are those areas which are now owned by the City of Brownsville, Linn County, School District #552 or the State of Oregon. Public areas identified on the map are used for the benefit of the citizens by the citizens. They include City Hall, Parks, the Moyer House, etc.

The importance of identifying these areas on the map is to promote their continued use by the public and to aid in their quick identification when projects are proposed in the area.

Special Development: The Comprehensive Plan Map identifies areas of Special Development.

Within the city limits of Brownsville are three unique areas that require special land use planning attention and consideration in order to prevent future land use conflicts or hazards and promote proper standards of health, safety, and welfare. These areas consist of approximately 184 acres and are designated in the Comprehensive Plan and Zoning Ordinance as Special Development (SD). The smallest contains approximately 9 acres and is called Holloway Heights. The second area is about 20 acres and is bordered by City Hall to the north, the City Park to the west, the Calapooia River to the south, and Main Street to the east. The third and largest area, occupying about 155 acres, is located on the hills above "Old Town." These areas have five characteristics in common: steep slopes, extensive woodlands, all environmentally sensitive, adjacent to the center of town, and aesthetically appealing.

* The official map is on display at City Hall in Brownsville.

In planning for these areas, the city determined that major portions of the two largest are not physically capable of handling development at normal urban densities. Combined effects of steep slopes and adverse soils cause these areas to be potentially hazardous. These hazards could appear in three forms: mass movement, erosion, flooding.

* In western Linn County mass movement occurs in areas underlain by the Little Butte Formation on slopes greater than 15 percent. Almost all of Brownsville's Special Development acreage is underlain by materials associated with the Little Butte Formation and with slopes between 10% and 50%. Mass movement is also associated with soils that contain a heavy concentration of clay. About ninety-five percent of the soils in the Special Development Zone have a high clay content. Clay soils also create building foundation and slump problems due to their high shrink-swell potential and low bearing strength when wet.

Most of the City's Little Butte Formation areas also contain mixtures of sandstone. When vegetation is removed from steep areas containing sandstones, erosion can begin removing precious topsoil and eventually lead to gullying and an accumulation of the topsoil in fan formations at the bottom of a hillside. Erosion problems can begin occurring where slopes exceed 15%.

Brownsville's S.D. areas contain extensive wooded areas which provide protection to the city's drinking water, supplied by five wells. With the existing woodlands on steep slopes, runoff from precipitation is decreased dramatically by the absorptive qualities of vegetative litter on the forest floor. ** These absorptive qualities also greatly slow down the flooding process. If high density development were to occur in the city's hillside areas, without protecting existing woodlands, increased siltation of the city's water system could create water quality problems.

In determining buildable acreage for vacant areas within the 184 acre Special Development Zone, the city made a detailed analysis of the three areas. Lands suitable for development were determined using the following assumptions: 1. Identify areas that are already committed; 2. are unbuildable due to slopes of 25% or more; 3. are inaccessible because of potential access roads being too

steep; 4. are within a floodway of 100-year flood plain; and 5. the total development costs would be excessive.

In determining how large the committed portion of a parcel should be, the city allowed for size differences according to whether a parcel was connected to city services. If a parcel was connected to city services, the size of the committed portion was determined according to the following standards: 1. The entire parcel shall be considered committed if it is vacant and substantially less than one-half acre in size; 2. if the parcel is one acre or larger with an existing house, one-half acre shall be considered committed. If a parcel was not connected to city services, the size of the committed portion was determined according to the following standards: 1. The entire parcel shall be considered committed if it is vacant and substantially less than one acre in size; 2. if a parcel is one acre with a house, the entire parcel is considered committed; 3. if the parcel is two acres or larger with an existing house, one acre shall be committed.

In determining that unbuildable conditions should be related to excessive development costs the city used information contained in a 1976 report submitted to the Council of Governments by the Oregon Home Builder's Association and included in the D.L.C.D. Housing Handbook, and policies described in the City's Comprehensive Plan to draw this assumption. In that report the Association described that development on steep sloped areas required extreme cost increases. According to the data presented, it was shown that new development costs per dwelling on hillside areas having hazardous geologic and soil conditions with slopes of only 15% to 18% will normally raise the cost of a new home by as much as 50% to 100% or more. These are costs that the city feels are exorbitant to the average home buyer in Brownsville. Certainly doubling the cost of a home does not render a parcel totally unbuildable but it goes a long way towards discouraging development, because of marketability factors, which the city feels is another way of interpreting what is unbuildable.

Why these increased costs would be relevant to Brownsville's Special Development areas can be recognized by understanding how certain policies in the city's comprehensive plan actually commit the costs of extending services for new development to the builders. On page 189

of the plan, policy 58 describes that "the City of Brownsville shall establish a systems development charge for all new development. The systems development charge will go towards providing over-sized public facilities (such as water lines, sewer lines, streets, etc.) in developing areas of Brownsville so that the facility will be able to meet future needs without being re-engineered and improved at a later date and at a higher cost." On page 181 of the plan policy 21(E) states that "new street development and extension shall be the financial responsibility of the principals behind the development project for which the street is being built or extended to serve. A systems development charge will be used to oversize a street such as a collector." On page 201 of the plan, policy 2(C) points out that the city will "require the developer to absorb the cost of facility extension."

In analyzing the Holloway Heights area of about 9 acres, the city determined that only about two acres are vacant and buildable. Most of the area is already physically committed because of 17 existing residences connected to city sewer and water. With the area's density averaging about one-half acre for each dwelling, there is probably only enough buildable room for 2 or 3 more houses. There may be 2 or 3 additional building sites on the northern end; however, the slopes on these particular sites would run between 25% and 30%. The city feels that if any building permits are issued to this area in the future they should be for single family dwellings (low density development) because existing city services in the area are not capable of handling heavier densities. The loop road which serves the area is in extremely poor condition.

The second area located between the river, city park, City Hall and Main Street consists of about 20 acres and for identification purposes will be entitled South Hill. This area has an old established church and adjoining grounds occupying about 2 acres. Properly sized feeder lines for city sewer and water are in close proximity to South Hill, but only serve the church site. The buildable lands analysis indicates that most of the area is unbuildable. Two acres are committed to the existing church. About eight acres are unbuildable because they lie within the floodway or 100-year flood plain of the Calapooia River. In addition about 5 acres are unbuildable due to prohibitive costs to a developer where slopes

range from 15% to 30%. Approximately 5 acres located on slight to moderate slopes of 2% to 12% could be considered buildable if sewer and water lines were extended and access created; but the cost of these extensions would have to be absorbed by the developer. The city considers these 5 acres buildable on the basis that their slopes are probably gradual enough to allow for reasonable building costs, including costs for extending services.

The largest Special Development area consists of approximately 155 acres and is situated on the hill above "Old Town." "Old Town" Hill has 20 dwellings; 19 are receiving sewer and water services and 1 is not receiving services. From these existing dwellings approximately 11 acres were determined to be committed. The city's analysis revealed that approximately 35 acres are unbuildable because of 25% to 50% slopes. The only improved roads serving "Old Town" Hill are along its western and southern boundaries, where the area's only existing development is also situated. An accessible road to the south, Spaulding Avenue, gives access to several vacant parcels containing slopes between 3% and 10% that could be developed to urban densities. City sewer and water lines are properly positioned for extension to these parcels, which are situated in the northeast corner of the city limits and comprise about 24 acres. The costs, however, of extending services would have to be paid by the developer, but probably at reasonable costs. Of the 24 acres considered buildable, approximately 30% or about 7 acres would have to be considered committed to future streets and parks which would leave a total of approximately 17 buildable acres.

The remaining 85 vacant acres occupy the central portion of the hill and are surrounded by an escarpment containing 20% to 30% slopes. This whole central section is heavily wooded with a few pockets of fairly level ground along the top of the hill. Even though these flatter sections, containing slopes of 3% to 12%, appear to have development potential there are a number of constraints that would impede their conversion from rural to urban. There are no existing roads, sewer or water lines extending into these central portions of the hill. The only possible way of extending services would be for a developer to pay the costs. The city feels the costs of these extensions would be excessive due to the steep slopes along the escarpment and the total length and area of the extensions. The costs, therefore, of building affordable

housing at normal urban densities in these flatter central sections would be unreasonable and to the point of being exclusionary to the average home buyer in Brownsville. Therefore, the city feels that these isolated 85 acres will remain unbuildable to normal urban densities to the year 2000.***

In counting the buildable lands in all three Special Development areas the city concludes that only about 23 acres are buildable. All of the parcels are probably buildable to urban densities because they contain slight to moderate slopes and are in close proximity to city services, which should keep extension costs to a developer within reason. The city further believes that including more than 23 acres as buildable would be incompatible with its present ability to extend services for new development. Extension of these services through the city's financial efforts is expressly limited by Comprehensive Plan policies which were mentioned early in this analysis.

In recognizing that some of the S.D. areas are buildable, they are also small and separated and the city feels that the best future uses of these vacant buildable parcels would be residential. This type of use would also insure that the city is maintaining consistency with all relevant Comprehensive Plan goals and policies. Policy 25(F) on page 160 of the Comprehensive Plan states that "in Special Development areas where the dominant surrounding use is residential, residential use shall be encouraged." All existing buildable portions of the three Special Development areas are surrounded by a predominance of either open space or existing residential uses.

SUMMARY TABLE

Analysis of the Buildable and Unbuildable Lands of the Brownsville Special Development Areas.

Area Name	Total Acres	Committed Acres	Acres in		Unbuildable with 25% Slopes	Acres	
			Floodway or 100 year Floodplain	Unbuildable due to Extreme Costs		Buildable	Acres
Holloway Heights	9.0	7.5	.0	.5	1.0		
South Hill	20.0	2.0	8.0	5.0	5.0		
Old Town Hill	<u>155.0</u>	<u>18.0</u>	<u>.0</u>	<u>85.0</u>	<u>17.0</u>		
Totals	184.0	27.5	8.0	90.5	23.0		

Sources

* Environmental Geology of Western Linn County Bulletin 84, 1974 State of Oregon, Department of Geology and Mineral Industries, John D. Beaulieu, Paul W. Hughes, R. Kent Mathiot.

** "Performance Controls for Sensitive Lands" by Charles Turow, William Toner and Duncan Erley. Report No. 307, 308 June, 1975 Planning Advisory Service.

*** For a more thorough understanding of the slope conditions and location of buildable areas of the city's three Special Development areas refer to Figure 15.7 and Figure 15.8.
["Special Development" added by Ord. No. 524, \$1, passed Sept. 8, 1981.]

Residential: The Comprehensive Plan identifies large areas as residential. There is no distinction on the plan map between the low density (single family) medium density (mixed single-multiple family) and high density (multiple family) residential areas. It was felt that the question of density could best be addressed through zoning, eliminating unnecessary government hurdles and cost to the applicant.

In making the decision to move residential densities to the Zoning Ordinance, a common fear became apparent. The fear was that many of the historic structures would be either removed or damaged extensively by new development.

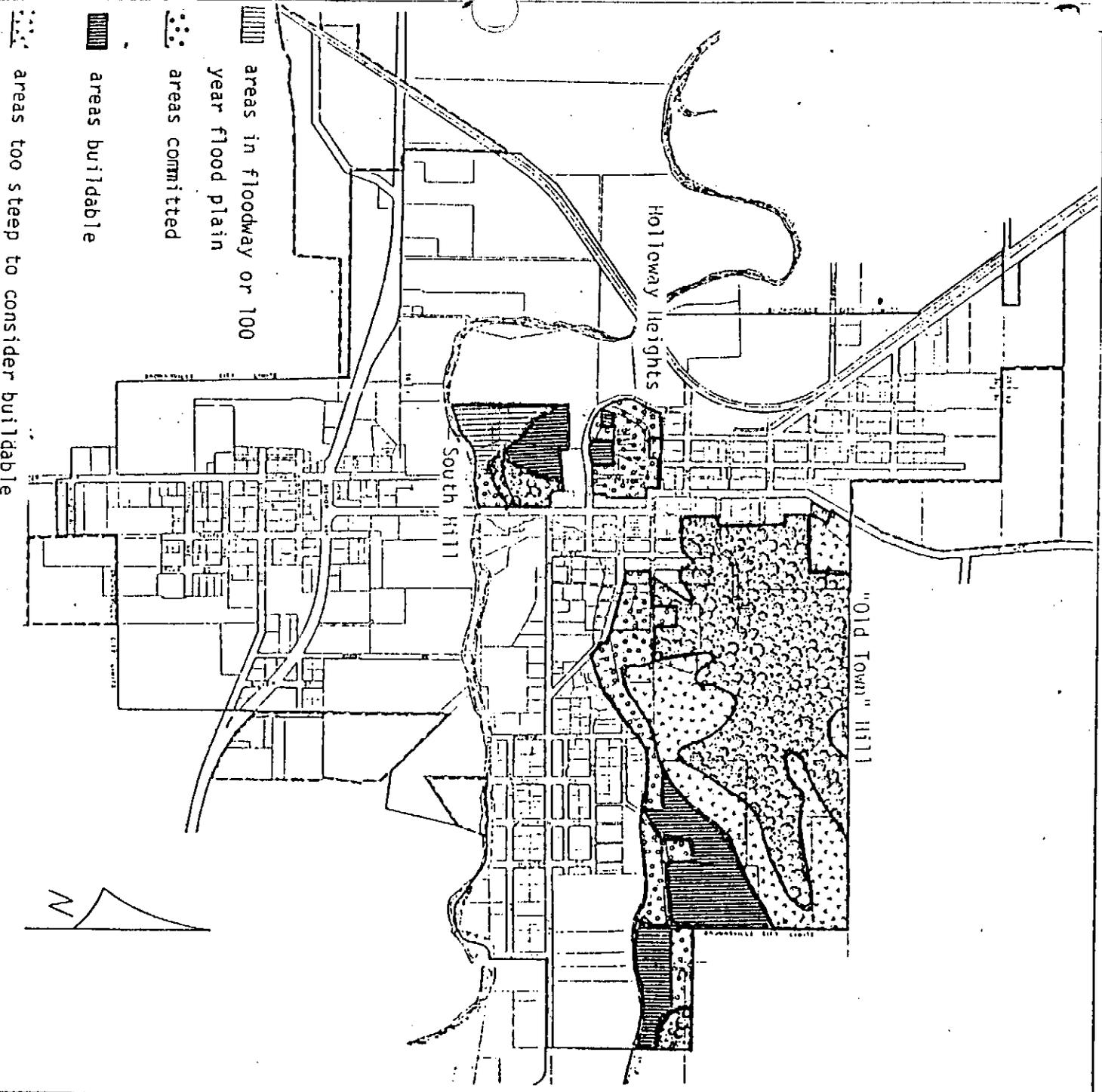
In an effort to protect the historic integrity of the structures and the neighborhood in which they are located, policies were formulated to aid in decision making on density location and demolition procedure.

The three (3) residential densities were deemed important to meet the housing needs of the community and to provide optimum land usability.

Industrial: The Comprehensive Plan Map identified industrial areas. All industrial areas are located south of the Calapooia River. Much discussion and consideration was given to industrial location. The ultimate conclusion was based on access, considering that it is important for an industry to have ease of access to the major transportation facilities (Highway 228 and the

Figure 15.7

Buildable and unbuildable Areas of the Special Development Zone



areas unbuildable due to slope hazards and excessive development costs

[Figure 15.7 added by Ord. No. 524, sec. 12, passed Sept. 8, 1981.]

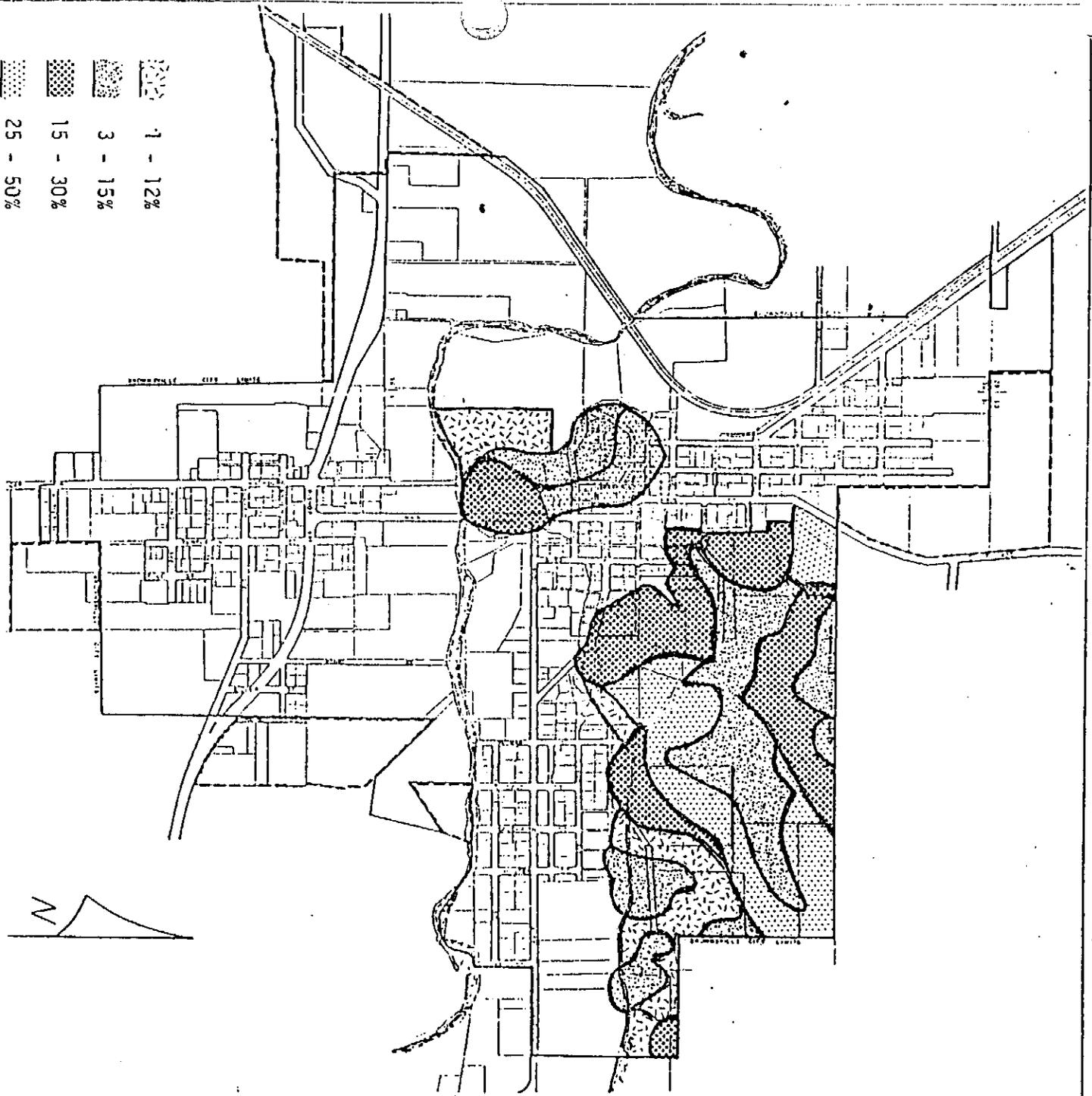
BROWNSVILLE

SCALE:



Figure 15.8

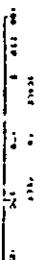
Special Development Zone Slopes Map



[Figure 15.8 added by Ors. No. 524, sec. 12, passed Sept. 8, 1981.]

BROWNSVILLE

SCALE:



Southern Pacific Railroad) and that by directing industry to the areas south of the Calapooia River, the integrity of the Old Town commercial area and the residential neighborhoods of North and East Brownsville would be maintained. (any industrial location north of the Calapooia River would have to pass through commercial or residential areas on the existing transportation network).

It should be pointed out that, historically, there has been industrial activity north of the Calapooia River. However, until transportation facilities can be improved to insure that industrial traffic will not overtax or disrupt commercial and residential areas, the locations as identified on the Comprehensive Plan Map should meet the industrial location needs of Brownsville.

Commercial: The Comprehensive Plan Map identifies two (2) commercial areas. The commercial area north of the Calapooia River is the Old Town Commercial area, the area south of the Calapooia River is designed to accommodate commercial activities which will generate high traffic volumes. Although the Plan Map does not make a distinction between the two commercial areas, policies within the plan do.

The intent behind the two areas can be summed up with the community's concerns for preserving the historic character of the Old Town area, the realization that Old Town commercial activities are easily accessible on foot, and recognition that parking and the bridge over the Calapooia River are obstacles to high traffic volumes.

Economic growth, however, need not be stifled because of transportation obstacles and historic preservation. The commercial area south of the Calapooia River should provide available space and opportunities to any commercial activity which chooses Brownsville.

Special attention to traffic flows on Highway 228 and South Main Street is necessary in order to maintain the function of the roads and to avoid hazardous situations. The two commercial areas provide favorable locations for a wide range of commercial activity.

Overlay Designations: The flood hazard overlay is designed to prevent the loss of life and property. The

Federal Insurance Administration, under the Department of Housing and Urban Development, has established guidelines which must be followed and implemented through local ordinance. Brownsville, like most communities with flood hazards, is participating in the Flood Insurance Program.

Much of the area that has been identified as a flood hazard is sparcely developed. This may in part be due to the historical awareness of the potential hazard associated with flooding in these areas. However, as land prices rise, the desire to develop identified flood hazard areas will most likely increase.

The City of Brownsville and the Federal Government have the responsibility to make citizens aware of the potential hazard associated with flooding and to oversee development to insure existing and future residents that the development will not complicate the potential flood hazard.

Resource Overlay Designation: Figure 8.0

The resource overlay is designed to recognize the value and importance that aggregate resources have to the community. Because of the nature of resources, they are limited and dispersed throughout the community. The resource overlay approach is a workable regulation method. The City of Brownsville will be in a position to: realize the economic benefits of primary extraction; encourage local utilization of resources; and benefit from the subsequent use of the sites.

PUBLIC FACILITIES AND SERVICES BACKGROUND STUDIES



PUBLIC FACILITIES AND SERVICES

Citizens of Brownsville are reminded daily of the condition of many of their public facilities. The citizenry is also aware that improvements cost money. Within this section on Public Facilities, the existing condition of the facilities is addressed. Further on in this text, under Goals and Policies for Public Facilities, are found many statements which commit the city to a course of action. It should be noted that the commitments to improvements are not commitments for the city to spend money it does not have.

The plan calls for the city to take two (2) relative new steps in facility improvements. (1) The establishment of a capital improvement program, and (2) The establishment of a systems development charge.

(1) The capital improvement program will be directly tied to the financial capabilities of the City. It will also require that facilities be improved or developed based on a priority system which addresses needs of the community.

Through the capital improvement program, the City will have to take a careful look at all aspects of facility improvement or development in order to determine a time frame in which projects can be successfully completed.

For example, there will be projects which can be completed within a fiscal year, and there will be projects which (because of cost) will need to have funds budgeted several years in advance. For the long range facility improvement projects, the community will need to have a strong commitment to the project.

(2) The second step that the plan calls for is the systems development charge. This is not entirely new to Brownsville as currently new development must pay to connect to the water and sewer systems. However, under the current systems charge, no provision is made for extending services. This has led to many undersized lines being extended into areas with greater growth potential than the line can handle.

Under the systems development charge, a method will be established to extend services which will be able to serve both existing and potential development proposals. In addition to sewer and water, the systems development charge will also cover improvements to streets, pedestrian ways, and lighting.

Facility improvements and development should also be aided through programs by the Federal, State and County governments. Such programs will require the City to actively pursue funding from various Federal, State, and County agencies.

It is therefore important that the Plan identify desired improvements and establish a method by which improvements can be identified as time goes by and the needs and attitudes of the community change.

The remainder of the Public Facilities Background Study will address existing public facilities and services and private utilities.

Brownsville has a variety of public facilities. These include: the water supply system, the sanitary sewer system, drainage programs, streets and sidewalks, fire and police, solid waste disposal, schools and education, parks and recreation, city buildings and services, and private utilities. Each of these facilities will be discussed in the following text.

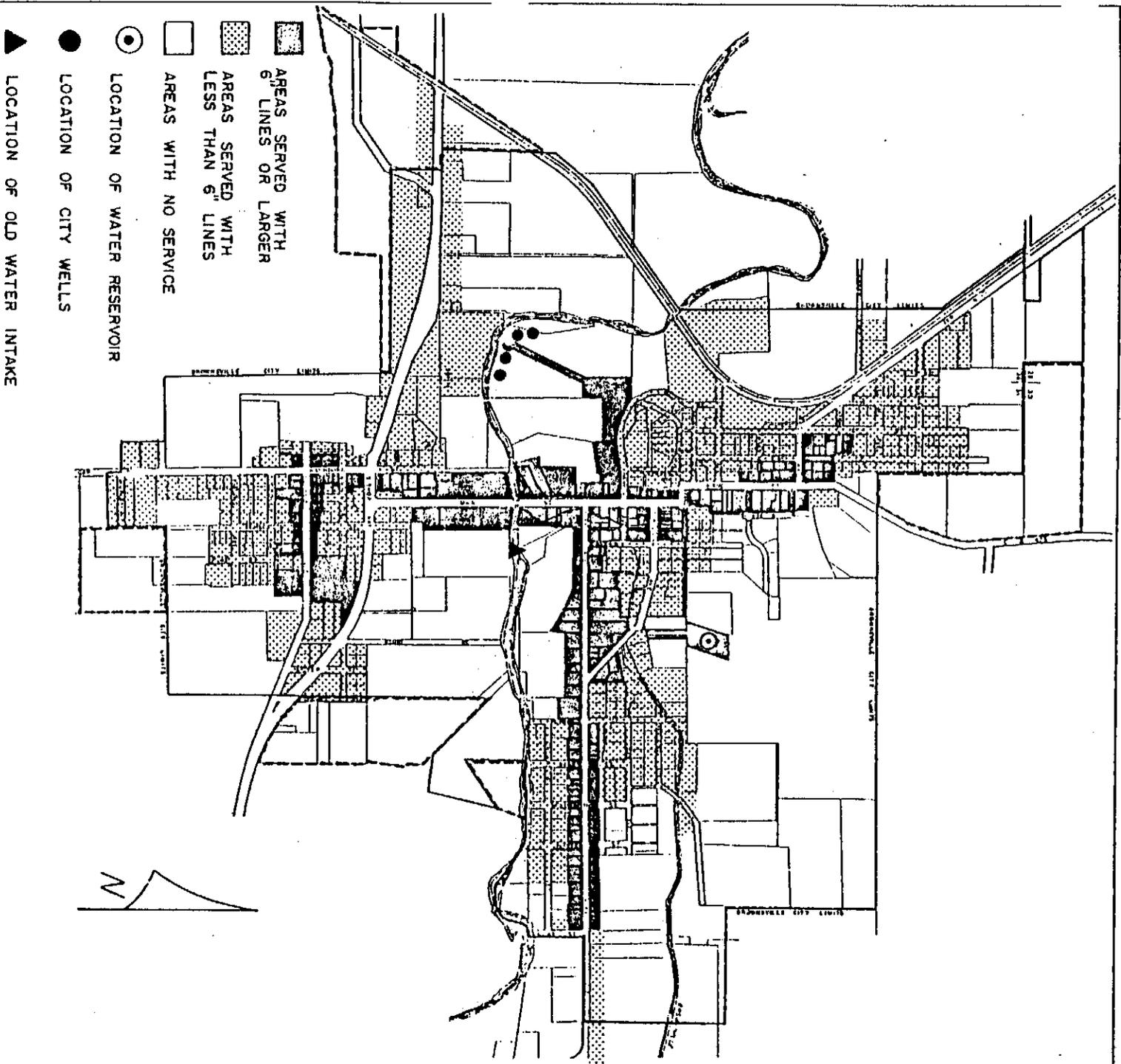
Water Supply: Figure 16.0 & 16.1

The existing water supply system owned and operated by the City, derived water from the Calapooia River through an infiltration gallery which was constructed in 1951. This method is considered to be unsatisfactory by the city as low summer water levels necessitate restrictions on water consumption. To solve the problem the city has developed a well field consisting of five shallow wells, located in Pioneer Park, adjacent to the Calapooia River. The design is to have each well pump at least 100 gallons per minute. Although the well field has been developed, it is not at this time in operation, and there is some question regarding the ability of the wells to produce

1. Kraus and Dalke, Report for the Brownsville Water Supply System.

Figure 16.0

WATER SYSTEM



BROWNSVILLE FACILITIES MAP

SCALE:

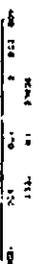


Figure 16.1

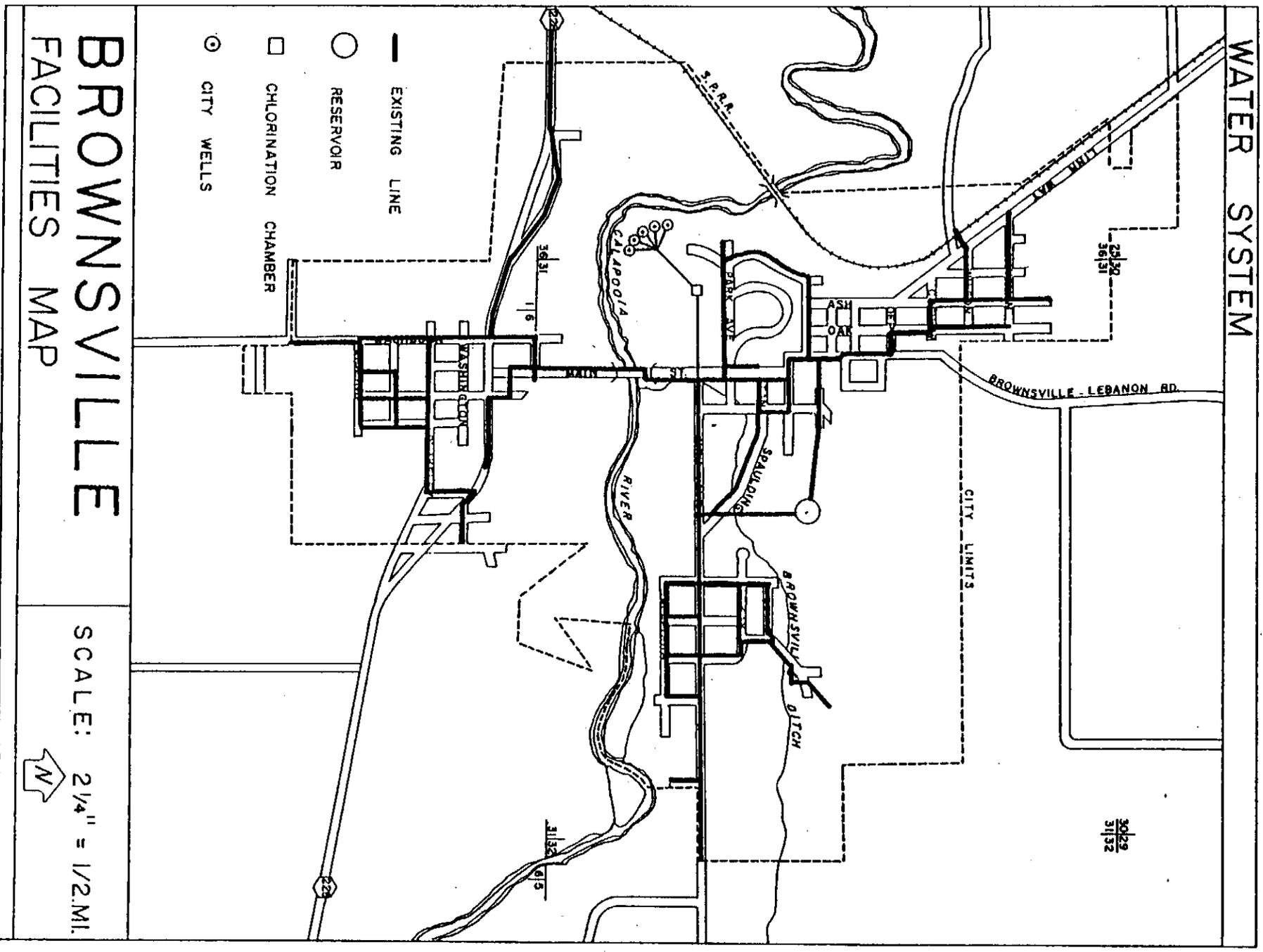
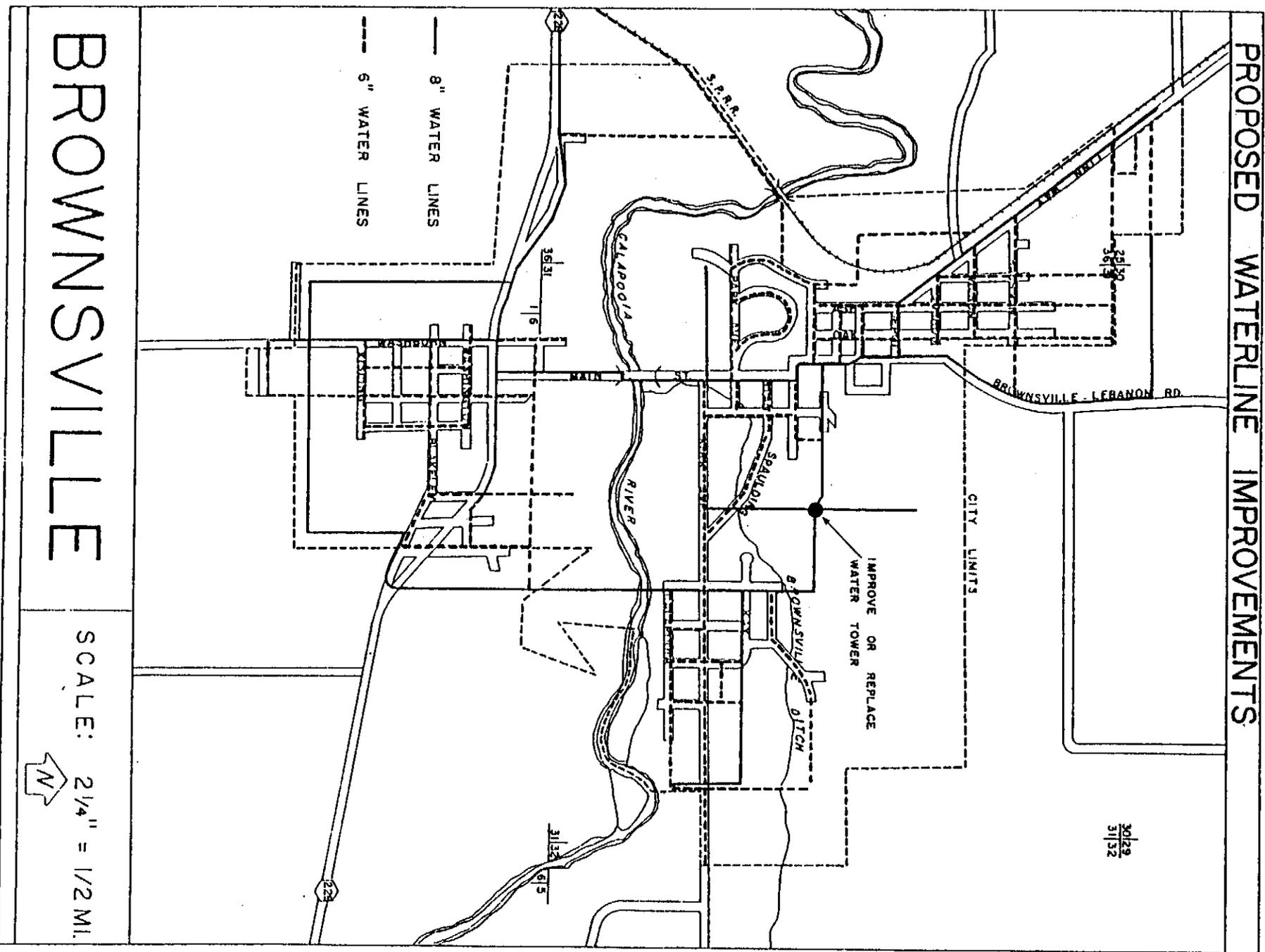


Figure 16.2



the designed amount of water (100 gpm each). Because of the location of the well field, the City will continue to derive its water supply indirectly from the Calapooia River. Using the standard engineering figure of 100 gallons of water per person per day, it can be estimated that current water use in Brownsville is in excess of 128,000* gallons of water a day for personal use. Using the same per person water use rate, and the 1990 and year 2000 population projections, it can be estimated that in the year 1990 total personal water use will exceed 170,000** gallons of water per day and in the year 2000, total personal water use will exceed 215,500** gallons of water per day.

It should be noted that commercial uses, industrial uses, and Brownsville Elementary School water use is not included in the above figures. These uses will increase the amount of water use as all these activities will expand through time.

The average daily consumption in 1972 was 88,335 gallons with a population of 1100.² The average daily consumption of water during 1979 was 115,640 gallons with a population of 1280.* This figure is based on actual city records.

Once the water is pumped from the infiltration gallery, chlorination is added through a diffuser pipe mounted into the discharge lines from the pumps. This method of chlorination is also unsatisfactory as the far reaches of the system have less chlorine than the areas closer to the source.

As a part of the new water supply system, a chlorination chamber was added. The chlorination chamber (which circulates the water through chlorine prior to delivery to the distribution system) will provide a more satisfactory method of chlorination than is now available.

2. Kraus and Dalke.

* Based on 1979 Portland State University Population estimate of 1280.

** Based on Oregon District 4 Council of Governments Projections of 1700 for year 1990 and 2155 for year 2000.

the new supply and chlorination systems are scheduled to come on line in the spring of 1980.

Water Distribution and Storage: Water is currently pumped into the distribution system which consists of pipes ranging in size from eight inch down to 3/4 inch. When the distribution system is full the excess water is channeled to a 250,000 gallon concrete reservoir located on the hill north of Old Town. There are several problems associated with the distribution and storage systems. The distribution system can best be described as a cobweb of undersized pipe. Many fire hydrants are connected to four inch mains which are unable to produce optimum fire flow. These mains could collapse during a fire if water is pumped through fire trucks too rapidly.

Many dead end lines and undersized lines cause low water pressure and obstacles to new development, as existing lines may be unable to support additional development. The existing 250,000 gallon water reservoir leaks and it is questionable whether the water storage could supply the city for a three day period as recommended by the Department of Environmental Quality.

A potential problem also exists with regards to water distribution to South Brownsville. At present, water is supplied to South Brownsville through a single six inch main suspended under the bridge on Main Street. If this line were damaged the water supply to South Brownsville could be reduced or even cut off.

Prior to replacement of undersized water lines the City will need to study all possible alternatives, which could include using existing lines as back up or secondary feeder lines.

Sanitary Sewer Systems: Figure 17.0

The City of Brownsville owns and operates the sanitary sewer system. The system consists of two independent pipe networks, one serving the north part of the City and the other serving the south. Both pipe networks are gravity flow and both connect to stabilization ponds (lagoons). The major part of the collection system was constructed in 1964. However, older lines are also in use within the system.³

3. Kraus and Dalke, Sanitary Sewage Facilities Plan Report, 1974.

