

Alternatives to Single Family Housing

The primary alternatives that can be affected by city policy would include clustered housing or planned unit developments (PUDs), multiple-family units, accessory dwellings (granny flats), attached single-family units (row houses or town houses), and manufactured homes. Policies relating to planned unit developments and multiple-family developments are included in the Urbanization element. In this context, however, it is useful to view these housing types in terms of their availability as a form of lower cost housing.

There is currently one planned unit development and one large mobile manufactured home subdivision in Silverton. Both of these types of housing development offer amenities similar to that of single family units – home and property ownership, some private open space, a sense of neighborhood, and so on, but at reduced cost. Row houses or town houses can offer similar advantages. Accessory dwelling units also offer more affordable housing opportunities for single individuals, particularly elderly people, and increase the efficiency of overall land use.

As noted in the Urbanization section, additional land is needed for multi-family housing development. Areas recommended for such development are described in that section of the Plan and include the Downtown area, mixed use opportunity areas and additional land proposed to be rezoned for multi-family use by landowners/developers. The amount of land proposed for multi-family uses is consistent with the projected land need for this type of housing.

FINDINGS OF FACT

1. As of the year 2000, there are approximately 2,886 housing units within the City of Silverton.
2. Approximately 61% of Silverton's housing units are owner-occupied, and 39% renter-occupied. About 54% of all Silverton's housing consists of single-family owner-occupied dwellings. About 13% of the single-family units are rented.
3. Over one-quarter (26%) of Silverton's housing stock was built before 1940; 22% was built between 1989 and 2000.
4. As of 1992, about 3.9% of the housing units within the Silverton urban growth boundary were in need of major repairs. The percentage of substandard units has decreased significantly since 1970.
5. Relatively high population growth rates during the past decade have resulted in a significant number of new housing units constructed between 1989 and 2000 (almost 600 total dwellings). A significant percentage of the new units (38%) are multi-family dwellings. The current housing mix is 70.4% single family units, 21.7% multiple family units (including duplexes), 5% mobile homes as compared to 75.3%, 18.0%, 4.6% respectively in 1990. Over the next 20 years, new units are expected to be 65% single-family, 30% multi-family and 5% manufactured homes in parks.
6. A number of Silverton households are eligible for assisted housing. The availability of such housing opportunities does not match the need.

POLICIES

1. Protect adjacent residential areas from encroachment of new non-residential developments through the use of screening, buffering, landscaping, and building setbacks and compliance with other provisions within the City's Design Review Ordinance. Properties with existing

Housing

developments which meet the criteria for the zone which they are in are determined to be compatible with adjacent residential uses.

2. Promote rehabilitation of older homes through use of available loan and grant programs.
3. Provide an adequate inventory of land zoned for manufactured home park and multi family dwelling sites within the City.
4. Encourage planned unit development, mixed use housing, and mixed housing with commercial uses as a means for broadening housing choices and creating sustainable neighborhoods.
5. Encourage opportunities which will provide affordable housing to meet the needs of low income, elderly, handicapped, families, and individuals within the Silverton area.
6. Provide opportunities for the development of attached and detached single-family and multi-family dwellings such as duplexes, row houses, town house apartments.
7. Allow accessory dwelling units, subject to city development and building regulations, in all residential zones.
8. Allow for, and encourage the use of flexible lot sizes and building placement, and density transfers to reduce development costs, make efficient use of land, and promote housing variety and affordability.
9. Adhere to clear and objective standards for approval of residential development to ensure a timely and predictable development review process.
10. Encourage new housing units to adhere to the following design elements:
 - _ Locate garages behind the primary building line of the house, side-loading garages, or garages in the rear with alley access;
 - _ Provision for front porches;
 - _ Primary orientation toward the street and sidewalk;
 - _ Provisions for street trees.
11. Require design review approval for all multi-family developments and manufactured home parks.
- 1_ Encourage the use of sustainable development practices in residential site planning, building materials, and environmental control systems, including use of active and passive solar energy, energy efficient designs, and low water use landscaping.

IMPLEMENTATION

1. The existing zoning and subdivision ordinances will be revised periodically so that they serve as better tools for implementing housing policies.
2. The City will work with the Marion County Housing Authority, private non-profit organizations, and for-profit entities to secure funds for housing rehabilitation in Silverton.
3. The City will work with the Marion County Housing Authority, private non-profit organizations, and for-profit entities to continue to provide for needs of low-income people living in the Silverton area. In particular, the City will work closely with Section 202 housing project sponsors to increase Silverton's supply of affordable rental housing for low income residents.

Appendix - Housing

The housing projections are based on the following assumptions:

- Given housing market and affordability conditions and trends, the strong demand for multi-family housing witnessed during the past decade is expected to continue. However, given projections for similar sized communities in the Willamette Valley, we expect the proportion of multi-family housing to be built during the next 20 years to be slightly lower than in the past decade.
- There will continue to be a need for government assisted housing for people with very low incomes. Currently, approximately 15% of all households are below the federally defined poverty level. About 10% of all households have incomes below \$10,000 and may not be able to find affordable housing without government assistance. There is likely to be a further unmet need for government assisted housing for people with incomes between \$10,000 and \$20,000.
- The density of single-family residential development is expected to increase to approximately 5 units per net acre (average lot size of 8,500 square feet). This assumption is based on the following factors:
 - There is expected to be an increase in the market for single family attached housing (e.g., row houses) and houses on smaller lots which require less maintenance desired by an older population and new residents who have moved to Silverton from more urban communities.
 - Average lot sizes in new developments have decreased over time and during the last ten years.
 - The current and expected future relatively high cost of land and housing in the Silverton area will provide incentives for homebuyers and developers to build on somewhat smaller lots.

There will be a continued need for manufactured homes in parks as a form of affordable housing for some low income residents. The projected need for this type of housing can be met by the existing inventory of vacant lots in approved mobile home parks.

- The projection of land needs for housing takes into account the undeveloped inventory of vacant building lots in the City of Silverton and urban growth boundary.

Housing costs

Housing costs have increased significantly in Silverton during the last decade (1990 – 2000). Housing prices, which peaked during the mid-1990's, increased by over 22% between 1995 and 1996. Increases slowed in subsequent years, with costs increasing by an average of 10 – 11% between 1997 and 1998 and 4 – 6 percent during the year 2000. Homes in Silverton typically sell for 95 – 96% of their asking price. Silverton housing prices also tend to be higher than in neighboring communities in the Willamette Valley. For example, the average home in Mt. Angel and Woodburn sold for approximately \$135,500 and \$129,700, respectively in 2000, compared to \$171,000 in Silverton. Real estate multiple listing service data for January 2001 indicates the following housing prices for Silverton:

- Average cost of all 2-bedroom rental units (houses and apartments) is \$648 per month; median cost is \$650 per month
- Average cost of all 3-bedroom rental units is \$758 per month; median cost is \$753 per month

Housing

- The average selling price for a new home in Silverton in the year 2000 was \$170,200; the median selling price (including manufactured homes) was \$147,000; the median price, not including manufactured homes was \$155,000.

Land prices also are relatively high in Silverton. Local real estate professionals report that buildable lots in single-family subdivisions typically sell for around \$45,000, while raw land zoned for residential development has recently sold for about \$50,000 – \$60,000 per acre.

<u>Rough Estimate of Monthly Home Ownership Costs</u>	
<u>Median home price:</u>	<u>\$155,000</u>
<u>- 20% down-payment:</u>	<u>\$31,000</u>
<u>Mortgage:</u>	<u>\$124,600</u>
<u>Monthly mortgage payment:</u>	<u>\$971</u>
<u>(30-year fixed loan @ 7.5%)</u>	
<u>Utilities/Taxes</u>	<u>\$350</u>
<u>Total monthly payment:</u>	<u>\$1,171</u>

Relatively high housing and land costs may be tolerable to residents if housing remains affordable. Affordable housing typically is defined as that which costs no more than 30% of a household's income. Median household income in Silverton in 1999 was estimated to be approximately \$33,000; median family income was estimated to be about \$39,000. The average household and family can afford to spend about \$825 or \$975 per month for "affordable" housing. The approximate monthly cost of owning a median-priced home in Silverton is calculated in the example above. This rough calculation illustrates that over half of the households and families in the city cannot afford the cost of local housing without spending more than 30% of their income on housing.

ECONOMY

GOAL

Diversify and improve the economy of Silverton

OBJECTIVES

1. Protect those areas zoned for industrial development from encroachment of incompatible land uses.
2. Encourage diversified, non-polluting highly skilled labor intensive industrial development in order to provide an increased job market for area residents.
3. Upgrade existing transportation and public facilities necessary for development of the industrial park.
4. Minimize high noise levels, heavy traffic volumes, and other undesirable effects of heavy commercial and industrial developments.
5. Maximize the utilization of local manpower as job opportunities increase.
6. Preserve the existing downtown core and encourage the location of new commercial and retail activities in it.

EXISTING CONDITIONS

Human Resources

The human resources of Silverton are the skills, training, and education embodied by residents. There are three interrelated categories under which human resources can be addressed: labor force, demographic characteristics, and income level and distribution.

Labor Force and Demographic Characteristics

Silverton's labor force generally resembles that of Marion County and the State of Oregon, although only 30% of Silverton's population (1,309 persons) was employed in 1970 in comparison with 42% of the county population. Of those employed, 38% were female, 62% male. A 1977 comparison of employment and unemployment rates of Silverton, the Salem Standard Metropolitan Statistical Area (Marion and Polk Counties), and the State is included in Table 13.

TABLE 13 COMPARISON OF EMPLOYMENT AND UNEMPLOYMENT RATES, 1977 September 1977			
	Silverton	Salem SM ¹	State
Percent employed ²	30.8%	38.0%	38.9%
Percent unemployed	5.7%	5.0%	6.0%

¹ Salem Standard Metropolitan Statistical Area includes Marion and Polk Counties.

² September 1977 covered employment (see definition in Table 19) as a percent of the total July 1977 population

Sources: Oregon State Department of Human Resources, Employment Division, and Center for Population Research, Portland State University.

This low participation rate is primarily a reflection of the demographic characteristics of the Silverton population. Silverton had nearly double the percent of persons over 65 found in the county and the state. A comparison of the percent distribution of population by age in 1970 is included in Table 14. It also reflects to some extent the under reporting of farm labor.

TABLE 14 PERCENT DISTRIBUTION OF POPULATION BY AGE, 1969				
	Silverton		Marion County	State
	Percent	Number	Percent	Percent
Under 5	7.0%	303	7.8%	7.8%
5-14	18.2%	780	19.9%	19.5%
14-24	13.5%	581	17.1%	17.4%
25-44	19.1%	821	22.2%	23.0%
45-64	20.8%	897	20.6%	21.5%
65 and over	21.4%	<u>919</u>	12.4%	10.9%
		4,301		

Source: 1970 Census of Population, General Social and Economic Characteristics.

The distribution of the labor force by occupational group in 1970 is presented in Table 15. Silverton's occupational group profile differs from that of the county and the state chiefly with respect to the percent of service worker (nearly 19% of the labor force in Silverton while only 14% and 12% in the county and state, respectively). Farm laborers and health workers also comprise a higher percent of Silverton's labor force than that of the county and state, while the percent of sales and clerical workers is lower in Silverton than in the other two jurisdictions. The proximity of the state government and its associated institutions in Salem accounts for the concentration of service workers. Silverton's position as a "bedroom" community of Salem, where many of Silverton's residents work, may account to some extent for the lower level of clerical workers. Many Silverton residents rely on offices in Salem to meet their needs as is indicated in the employment profile (see Table 20).

The educational characteristics of the City's population are important indicators of skill levels and potential occupational distribution. This information with comparisons to county and state figures are presented in Table 16. The City's educational patterns are similar to both the county and the state with respect to the overall average of school years completed (12.17) and the percentages of adults having completed high school (33.1%). Silverton

has over 3% fewer high school graduates and over 6% more residents who have not entered high school than either the county or the state.

TABLE 15 PERCENT DISTRIBUTION OF LABOR FORCE ¹ BY OCCUPATIONAL GROUP, 1968			
Occupational Group	Silverton	Marion County	State
Professional, Technical & Kindred Workers	14.8%	15.9%	14.5%
Health Workers	4.4%	1.9%	1.6%
Teachers	5.5%	4.1%	3.6%
Manager & Administrators	9.5%	10.0%	9.7%
Sales Workers	5.5%	7.0%	7.5%
Clerical & Kindred Workers	12.4%	17.7%	16.6%
Craftsmen, Foremen & Kindred Workers	12.0%	12.3%	13.2%
Operatives, Except Transport	8.8%	8.0%	10.6%
Transportation Operatives	4.8%	4.0%	4.4%
Laborers, Except Farm	4.6%	4.4%	6.1%
Farmers & Farm Managers	1.4%	2.8%	2.0%
Farm Laborers & Foremen	4.1%	2.7%	2.0%
Service Workers	18.9%	13.8%	12.4%
Private Household Workers	3.1%	1.2%	1.1%

¹Total employed, 16 years and over.

Source: 1970 Census and Population, General Social and Economic Characteristics

TABLE 16 EDUCATION LEVELS ¹ IN PERCENT, 1970			
School Year Completed	Silverton	Marion County	State
8 Years or Less	28.2%	22.5%	21.5%
High School			
1-3 Years	17.4%	16.4%	18.5%
4 Years	33.1%	35.3%	35.0%
1-3 Years College	12.6%	13.5%	13.3%
4 or More Years College	8.7%	12.3%	11.8%
Median School Years Completed			
For All Persons	12.1%	12.3%	12.3%

¹Persons 25 years and older.

Source: 1970 Census of Population, General Social and Economic Characteristics

Income Levels and Distribution

Income and its distribution is used frequently as a measure of economic well being. In 1970 Silverton's per capita income was \$2,353 which represents 83% of the county level and only 75% of the state level. The median family income in Silverton was \$7,229, 20% less than the county average and 24% less than the state average. According to data provided by the State Housing Division, the 1978 median income for Silverton is \$12,813. Table 17 summarizes the 1970 family income information and Table 18 describes the distribution of these income levels.

TABLE 17			
FAMILY INCOME, 1969			
	Silverton	Marion County	State
Median Income	\$7,229	\$9,014	\$9,489
Per Capita Income	\$2,353	\$2,847	\$3,136
% Below Poverty	16.2%	9.8%	8.6%

Source: 1970 Census of Population, General Social and Economic Characteristics

TABLE 18				
PERCENT DISTRIBUTION OF HOUSEHOLDS BY INCOME LEVEL, 1969				
	Silverton		Marion County	State
	Percent	Number	Percent	Percent
0- 3,999	27.5%	311	16.2%	14.2%
4,000- 7,999	27.4%	310	25.2%	24.2%
8,000-11,999	26.3%	297	28.8%	29.6%
12,000-24,999	18.4%	208	26.3%	28.3%
25,000 and over	.4%	5	2.9%	3.8%
		1,131		

Source: 1970 Census of Population, General Social and Economic Characteristics

Compared to the county and the state, Silverton has proportionately more low-income households and fewer high-income households. The magnitude of the difference is clarified by the percentage of families that was below the poverty level in 1970 within the three jurisdictions: 8.6% in the state, 9.8% in the county, and 16.2% in Silverton.

The high percentage of poor families correlates with the large number of 65 or over persons (who typically have lower incomes than the general population), the high concentration of low income occupations, and the large number of residents with fewer than 12 years of education.

Industrial Structure

In 1977 three major sectors of the economy accounted for nearly 80% of all of Silverton's employment. These were trade (23.9%), services (38.5%), and manufacturing (16.4%). Manufacturing employment, about a sixth of the total employment, is the least stable of the three and in many ways is beyond the influence of local policy.

Silverton's employment profile is included in Table 19. Provided are employment by industry and quarterly wages for the third quarter of 1977. The employment and wages have been segmented by industry based on the 1972

Standard Industrial Classification (SIC) System.

The data is recorded by place of work so that a person employed in Silverton who lives in another town would be included, but a person who lives in Silverton and works in another town would not be included. Data on commuting patterns of workers obtained from the community survey conducted in 1977 indicate that about 50% of the work force commutes out-of-town to work. The need for more precise commuting information is discussed in the Transportation element.

Table 20 compares Silverton's employment by industry in 1960 and 1969, Table 21 shows employment percentages by industry in 1977, and Table 22 provides comparisons of Silverton's 1977 employment in manufacturing and non-manufacturing sectors with surrounding areas. The high percentages of workers employed in trades and services is typical of "bedroom" communities in which many people commute out of town to a larger city to work.

Land

There are currently about 50 acres in commercial use within the Silverton urban growth boundary and an additional 23 acres zoned for commercial use. Most of the available land for new commercial development is located within the CBD.

Much of this anticipates the need for additional professional and commercial office space. The CBD is not expected to expand to the south because of the canyon wall of Silver Creek, nor to the east or the west because of small sized blocks, narrow streets and stable residential areas. If any expansion occurs at all it would be on the north boundary.

Approximately 24 acres are now used for industrial purposes in the Silverton area. The additional 91 acres zoned for industrial use are located within the urban growth boundary either in the industrial park area near Webb Lake or between the railroad tracks and the Silverton-Mt. Angel highway (#214) in the northern part of town.

There are numerous additional sites that are suitable for industrial and heavy commercial uses in the area just outside the city limits to the west along the railroad tracks. There are many existing uses of this nature in the area as well as the City shops. It is expected that some of these existing uses will be seeking land for expansion of their activities in the near future.

Community Economic Advantages

One of Silverton's primary economic advantages is its location. Convenient access to Salem, the coast, and the mountains makes Silverton an attractive area for population growth and economic development. New business can draw employees from Salem, and conversely, workers can live in Silverton and commute to jobs in Salem.

Silverton also has the advantage of available land for industrial development. Silverton's industrial park adds to the City's ability to attract new manufacturing enterprises by providing a centralized, industrially zoned area with the potential for city sewer and water services. The desirability of this site will be increased when improvements in the transportation system are completed. This is discussed in the Transportation element.

Silverton is located in the middle of some of the most productive agricultural land in the region. Agriculture will therefore continue to play an important role in Silverton's economy as part of the area's economic base.

TABLE 19
EMPLOYMENT BY INDUSTRY, 1977

	Third Quarter 1977 Employment by Month			Payroll for Third Quarter 1977
	July	August	September	
ALL INDUSTRIES	1,396	1,404	1,618	3,545,845
MANUFACTURING	246	257	266	743,604
Food and Kindred Products ¹				
Lumber and Wood Products				
Printing and Publishing				
Primary Metal Industries				
Fabricated Metal Products				
Machinery				
Electrical Equipment				
Transportation Equipment				
Miscellaneous Manufacturing				
NON-MANUFACTURING EMPLOYMENT	1,150	1,147	1,352	2,802,240
TRANSPORTATION, COMMUNICATION AND UTILITIES	122	112	122	501,642
Motor Freight				
Transportation Services				
Communication				
Electrical, Gas and Sanitary Services				
TRADE	375	387	386	897,296
Wholesale Durable	69	73	72	340,900
Building Material, Hardware, Garden Supply, Mobile Home Dealer	14	14	15	25,178
Food Stores	98	99	98	284,498
Auto Dealers and Gas Stations	34	35	33	61,028
Apparel and Furniture	15	14	11	20,300
Eating and Drinking	121	127	130	124,861
Miscellaneous Retail	24	25	27	40,530
FINANCE, INSURANCE AND REAL ESTATE	68	67	64	130,112
Banking				
Credit Agencies				
Insurance Agents, Brokers				
Real Estate				
SERVICES AND MISCELLANEOUS	417	406	623	847,405
Hotel and Personal	99	111	122	186,022
Health	207	209	209	357,242
Other ² - Education, legal, social	111	86	292	304,141
GOVERNMENT	38	37	37	99,716
General Government				
CONSTRUCTION	130	138	120	326,069
AGRICULTURAL SERVICES	11	8	6	7,969

1 Food and Kindred Products experiences very high employment for 2 months during harvest season. This seasonal employment was not included in the totals

2 Employment in education is at a low point during July and August. The full employment figure is represented in the September figure.

Note: these figures include employment and payrolls covered by the State employment insurance laws and Federal employment compensation law. It excludes domestic workers, unpaid family workers, agricultural workers, and the self employed.

Source: Oregon State Department of Human Resources, Employment Division. Oregon Covered Employment and Payroll, 1977.

Industry	Number Employed ¹		Percent Employed	
	1960	1969	1960	1969
Construction	78	78	8.6%	6.0%
Manufacturing	159	194	18.2%	14.8%
Durable Goods	(87)	(139)	(9.6)%	(10.6)%
Transportation, Communications, Utilities & Sanitary Services	68	53	7.5%	4.1%
Wholesale and Retail Trade	176	316	19.5%	24.0%
Finance, Insurance, Business and Repair Services	80	116	8.9%	8.9%
Professional and Related Services	230	323	25.0%	24.7%
Educational Services	-	(140)	-	(10.7)%
Public Administration	50	54	5.5%	4.1%
Other Industries (Agriculture, Forestry, Fisheries, and Mining)	63	<u>175</u>	7.0%	<u>13.4%</u>
TOTAL		1,309		100.0%

¹Total employed, 16 years and over.

Sources: 1960 and 1970 Census of Population, General Social and Economic Characteristics

	Employment By Month 3rd Quarter 1977			3rd Quarter Payroll
	July	August	September	
All Industry	1396	1404	1618	3,545,845
Manufacturing	17.6%	18.3%	16.4%	21.0%
Non-manufacturing	82.4%	81.7%	83.6%	79.0%
Transportation	8.7%	8.0%	7.5%	14.1%
Trade	26.9%	27.6%	23.9%	25.3%
Finance, Insurance, Real Estate	4.9%	4.8%	4.0%	3.7%
Service and Misc.	29.9%	28.9%	38.5% ¹	23.9%
Government	2.7%	2.6%	2.3%	2.8%
Construction	9.3%	9.8%	7.4%	9.2%

¹Education at full employment after summer layoff.

Source: Oregon State Department of Human Resources, Employment Division, Oregon Covered Employment and Payrolls 1977.

	Manufacturing	Non-manufacturing
Silverton	17.6%	82.4%
Salem SMSA ¹	16.9%	83.1%
Portland SMSA ²	20.4%	79.6%
Eugene SMSA ³	21.2%	78.8%
State of Oregon	22.0%	78.0%
Yamhill County	32.4%	67.6%
Linn County	38.3%	61.7%

¹The Salem Standard Metropolitan Statistical Area includes Marion and Polk Counties.

²The Portland Standard Metropolitan Statistical Area includes Clackamas, Washington, Multnomah and Clark Counties.

³The Eugene Standard Metropolitan Statistical Area includes The Eugene Lane County.

Source: Oregon State Department of Human Resources, Employment Division, Oregon Covered Employment and Payrolls 1977.

Community Economic Disadvantages

Economic growth in Silverton is restricted to some extent by its sewer and water system capabilities. These limitations are discussed in depth in the Public Facilities element. The limited income growth potential of Silverton's senior citizens and the cost of services that need to be provided to the low income elderly represent an economic disadvantage to the community, especially in view of the proportionately large size of this age group.

A potential problem for Silverton is its limited economic base. Reliance on agriculture and food processing makes the City dependent on the weather, national agricultural product prices, and other uncontrollable variables. Furthermore, food processing is not a growth industry. Economic conditions appear to be reducing the amount of hand-harvested crop acreage in the Silverton area. The growing recreational vehicle and mobile home industry is not yet capable of supporting the economy if agricultural conditions were depressed for a lengthy period. It, too, is a highly variable industry and is vulnerable to recessions in the general economy and to gas shortages.

FINDINGS OF FACT

1. In 1970 about 30% of Silverton's population was part of the labor force, a considerably lower percent than in the county as a whole. This reflects the high percentage of senior citizens living in Silverton and the many farm workers who are not reported in employment statistics.
2. Silverton's labor force had an occupational group profile similar to the County and the State. About 19% were service workers, 15% were professional and technical workers, 12% clerical workers, and 12% craftsmen and foremen. The chief differences are that Silverton has a considerably higher percentage of service workers and farm workers than either the County or the State and a lower percentage of sales and clerical workers.
3. The average number of school years completed by Silverton's labor force in 1970 was 12.1. Silverton had a lower percentage of college graduates and a higher percentage of residents who had not had a high school education than either the County or the State.
4. The 1978 median income in Silverton was \$12,813. In 1970 Silverton had proportionately more low income households and fewer high income households than either the County or the State. In 1970, 16.2% of Silverton's families were below the poverty level, almost twice the state average.
5. Silverton's economy is typical of "bedroom" communities (smaller communities from which many residents commute to a nearby larger city to work) with a high percentage of local employment in the trade and service sectors. A 1977 survey indicated that about 50% of Silverton's work force commutes out of the City to work.
6. There is adequate land available for commercial and industrial growth. Land outside the city limits to the west along the railroad tracks is considered appropriate for future heavy commercial and industrial use as well as those lands already zoned for commercial and industrial use in the City.
7. Silverton's major economic advantages includes its proximity to Salem, available land for industrial development, and location near recreational facilities and in scenic surroundings. Economic disadvantages include limitations in sewer and water capabilities, limited income growth potential of senior citizens, cost of services that need to be provided to the low income elderly, and, to some extent, a limited economic base.

POLICIES

1. Provide land for light industrial development in an industrial park setting.
2. Enhance the desirability of the industrial park to potential users through improvements in vehicular and railroad access and provision of public services.
3. Pursue Federal grants to assist in the development of industrial park properties.
4. Explore various possibilities for utilizing second story space above retail shops in the downtown core.
5. Encourage the provision of off-street parking for downtown employees and reservation of street parking for consumers.
6. Explore the possibility for ensuring high quality development in the downtown area through a design review process.

IMPLEMENTATION

Policies on economic development will be implemented through zoning and improvements in public services (primarily transportation, sewer and water).

TRANSPORTATION ELEMENT

GOAL

Provide a safe, convenient, balanced, aesthetic and economical transportation system.

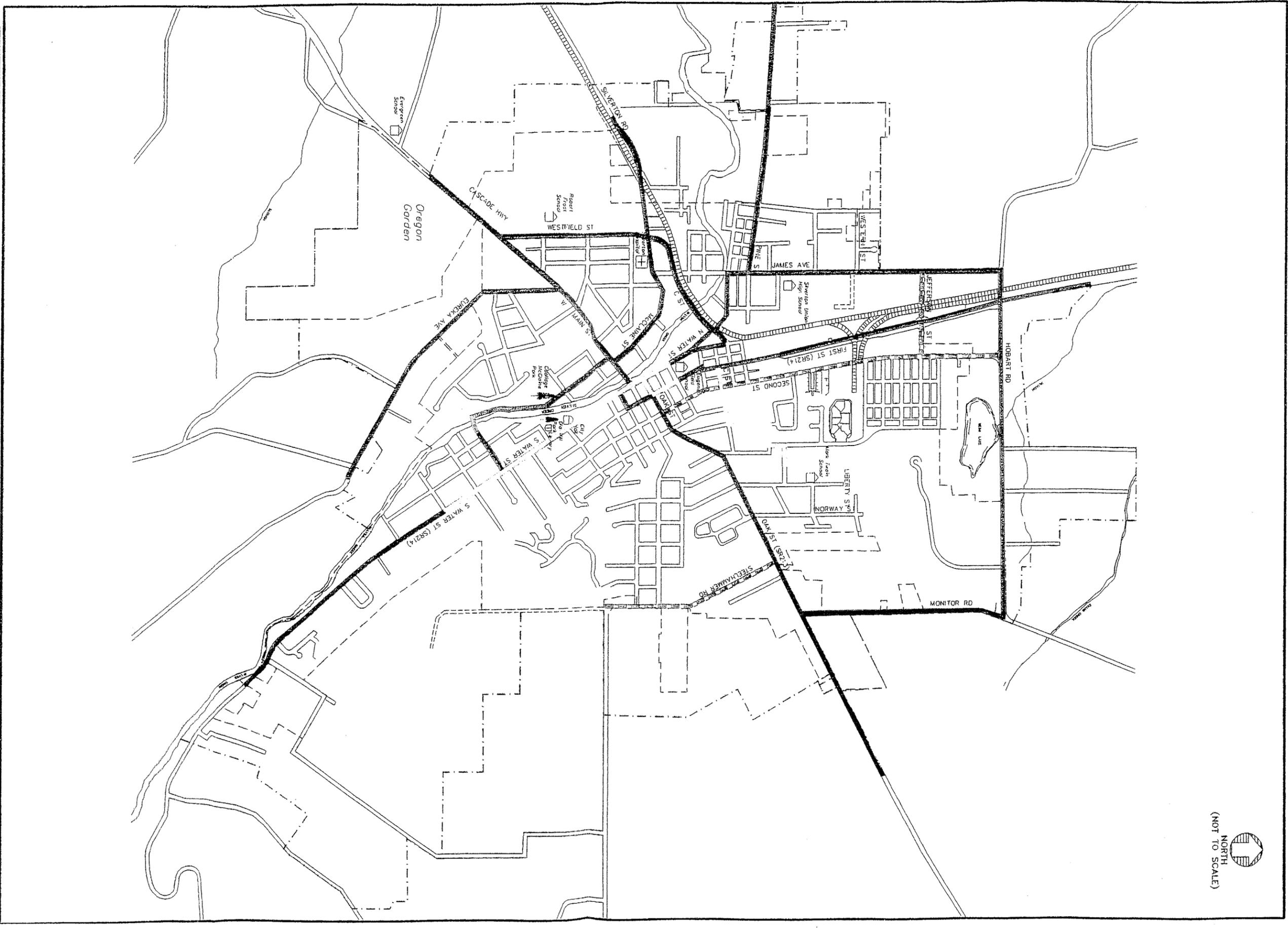
Objectives

1. Enhance the city's quality of life by providing adequate access to residences, employment, services, social and recreational opportunities.
2. Create an interconnected transportation system which supports both the existing and the planned land uses.
3. Create a safe transportation system.
4. Operate transportation facilities at a level of service that is cost-effective and appropriate for the area served.
5. Meet the access needs of land development while protecting public safety needs and transportation operations.
6. Provide a balanced transportation system that provides options for all transportation modes.

Transportation Element Update

In 1998, Silverton received a grant from the Transportation Growth Management program funded by the Oregon Department of Transportation (ODOT) and the Department of Land Conservation and Development (DLCD) to update the City's Transportation System Plan (TSP). The City's existing TSP had been adopted in the early 1990's and contained the plans for existing and planned transportation systems. Subsequent to the adoption of the TSP several significant factors occurred which warranted a review of this plan. When the TSP was originally adopted the city was just beginning to come out of a prolonged recession which saw little development of any kind during the 1980's. By contrast the 1990's witnessed unprecedented building development in the community. Several large residential subdivisions were developed and a number of other properties were involved in some sort of development. The population of the Silverton increased from 5,635 during the 1990 census to 6,740 at the time the grant request was submitted. While this growth was within the projection forecast in the TSP it was felt that some of the assumptions of where this growth was occurring should be re-evaluated to determine if it

NORTH
(NOT TO SCALE)

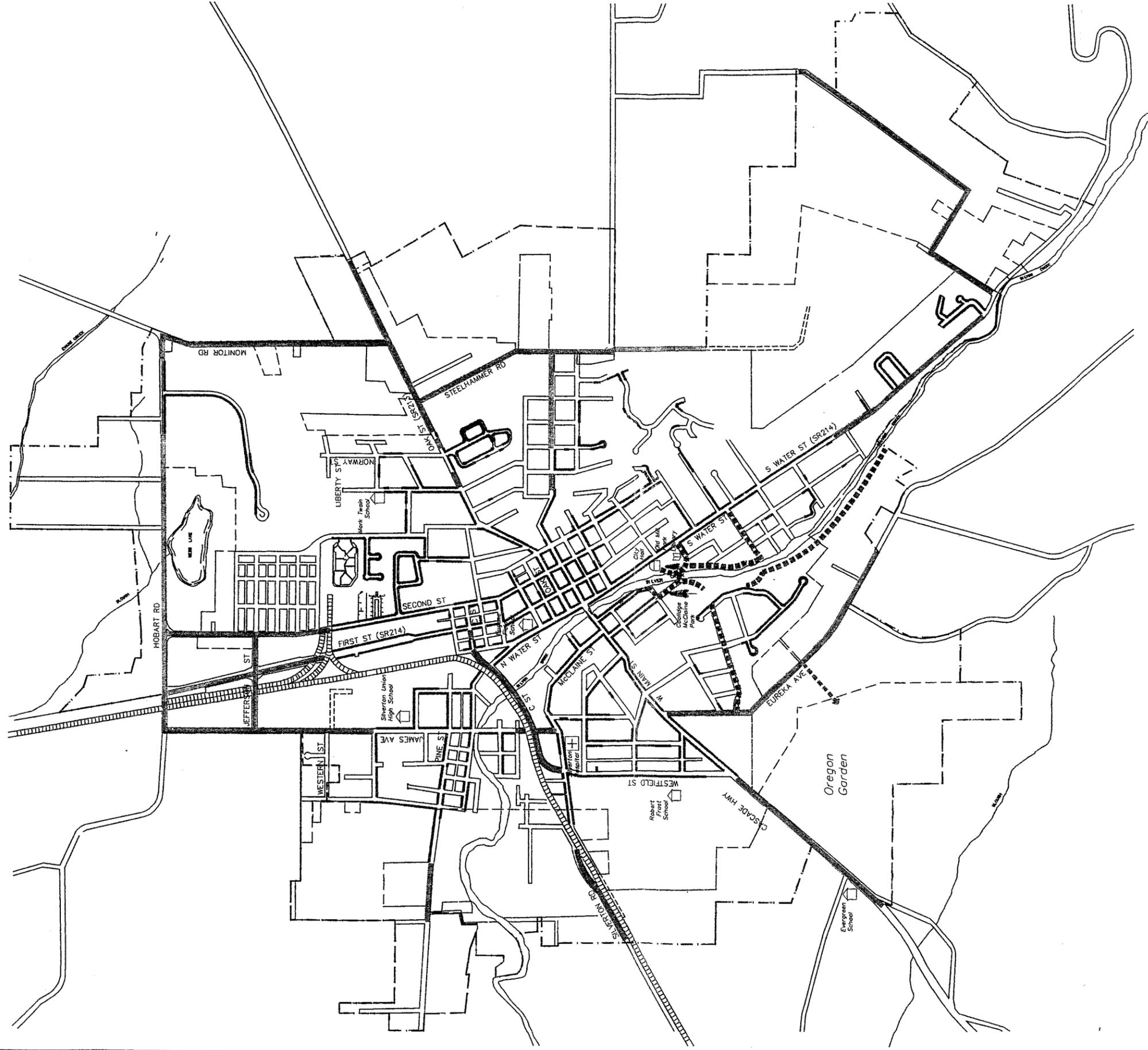


- LEGEND**
- Bike Route - Proposed Bike Lanes & Shoulder
 - Bikeways (1993 Silverton Bicycle Plan)
 - Bike Route - Proposed Shared Roadway (1993 Silverton Bicycle Plan)
 - Bike Route - (Proposed Off-Street) (1993 Silverton Bicycle Plan)
 - Bike Route - (Potential Added Bike Lanes on Collectors)

BICYCLE SYSTEM PLAN
CITY OF SILVERTON, OREGON
TRANSPORTATION SYSTEM PLAN
NOVEMBER 1999



NORTH
(NOT TO SCALE)



LEGEND

- EXISTING SIDEWALK (ONE SIDE)
- - - EXISTING SIDEWALK (BOTH SIDES)
- ===== COLLECTOR/ARTERIAL ADD SIDEWALKS (streets without existing sidewalks)
- ===== OFF-STREET PATHWAY OPTION

PEDESTRIAN SYSTEM PLAN

CITY OF SILVERTON, OREGON
TRANSPORTATION SYSTEM PLAN

FIGURE

28

NOVEMBER 1999



was still compatible with the planned transportation facilities. The combined effect of these new developments was anticipated to result in new users to the city's transportation systems. The Oregon Garden alone is projected to attract as many as 400,000 visitors annually. In consideration of that it was felt that the update of the TSP was imperative.

The first step in the update process was the selection of a consultant. Kittelson & Associates was selected based in part on their having written the existing TSP, having done other projects in the community and their involvement with putting together a traffic impact analysis for the Oregon Garden. Starting in the summer of 1998 and continuing into the summer of 1999 the consultant met numerous times with a TSP citizen advisory committee. In addition, there were several presentations before the Planning Commission, as well as joint work sessions before the City Council / Planning Commission. The TSP was adopted by the City Council in November, 2000.

Overview of the TSP

The transportation system plan consists of a roadway plan, transit plan, pedestrian facilities plan, bicycle facilities plan, access management plan, rail facilities plan, water facilities plan, pipeline facilities plan, and transportation demand management strategies. The roadway plan includes an updated road classification system that now distinguishes major from minor collectors, along with arterial and local streets. The TSP identifies and updates street cross section standards, including the introduction of added narrower street standards, which could be applied under certain conditions. The access management plan includes access spacing standards for arterial, collector, and local streets. The transit plan includes a proposal to expand both community and intercity bus service, and develop more park and ride facilities. The pedestrian facilities plan shows extending sidewalks on every arterial and collector street in the City, as well as certain off-street pathways. The bicycle system plan shows the development of bike lanes on all arterial and most collector as well as certain off-street bikeways.

Future Conditions

The future conditions section of the TSP provides a summary of the process used to develop a baseline traffic forecast for the year 2020 to be used in assessing transportation systems needs. The 2020 population projection is estimated by Marion County to be about 9,965 residents. The 20-year analysis of future conditions took into consideration this population projection, as well as several land use alternatives; a "no build" forecast; additional traffic resulting from the development of the Oregon Garden; as well as added through-traffic (traffic may be assumed to be traveling through Silverton to Salem or to the Silver Falls State Park) on Highways 213 and 214.

In contrast to the previous TSP which used a February day as the critical analysis period for the traffic modeling, this update used a July weekday p.m. peak hour to be more reflective of anticipated traffic volume conditions.

By the year 2020 daily traffic volumes are projected to increase substantially on several major streets in Silverton. Traffic volumes on Highway 214 are expected to range from 11,000 -

14,000 vehicles a day, while traffic on Highway 213 east of downtown, will have approximately 10,000 vehicles a day. Traffic volumes on C Street are calculated to range from 10,000 to 15,000 vehicles a day. Meanwhile traffic volumes on Cascade Highway, near the Oregon Garden, should be about 6,000 vehicles a day. The analysis of this research indicates that several intersections in the city will have critical traffic movements operating at a level of service "F" (the lowest ranking) during this time period. These include: C Street / First Street; C Street / McClaine Street; C Street / Water Street; Main Street / Water Street; and Water Street / Oak Street. Each of these intersections will require some form of traffic control and / or lane configuration modifications in order to achieve an acceptable level of service in the future.

Transportation System Alternatives

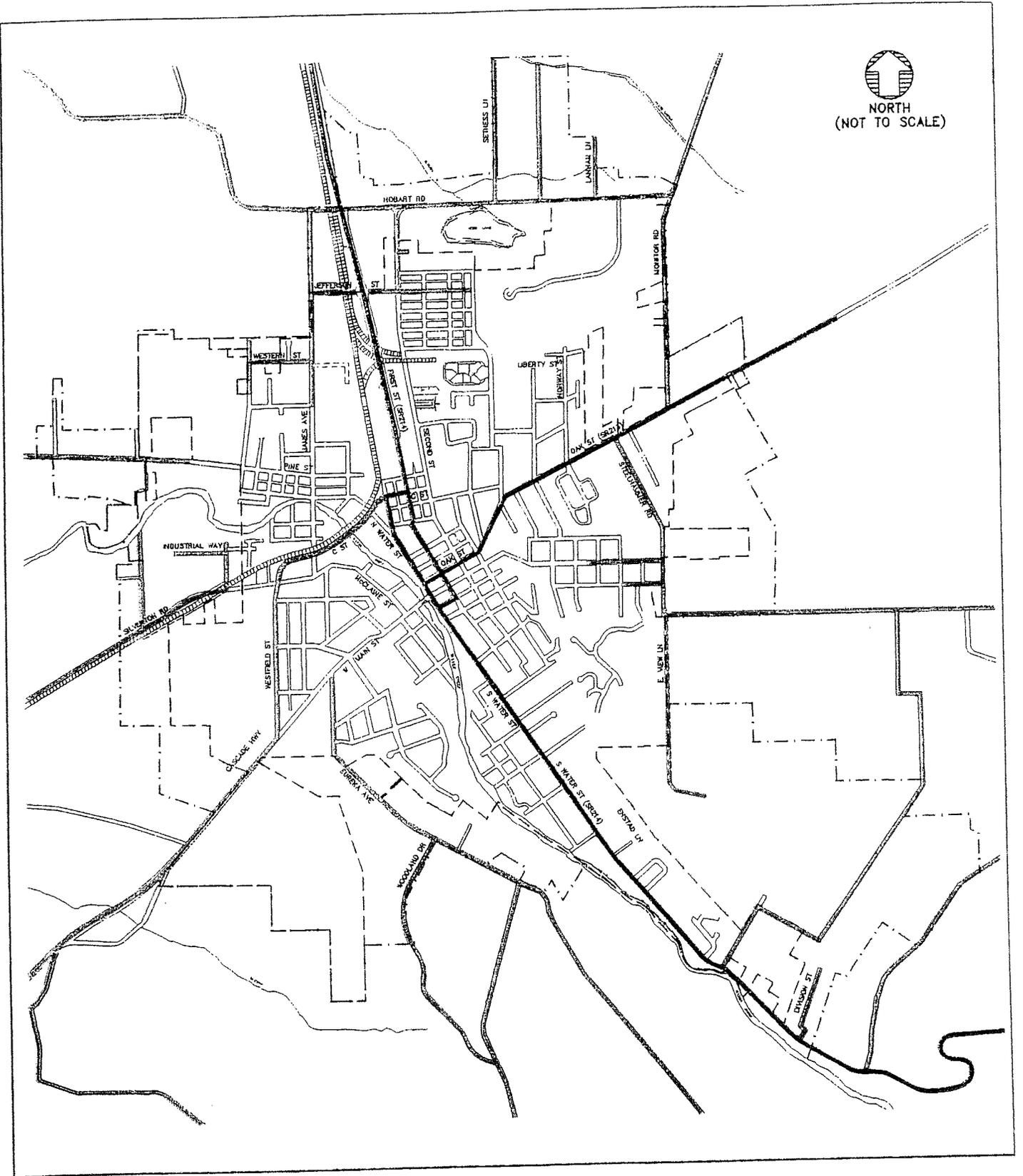
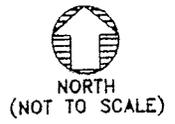
As part of the TSP process a number of alternatives for each of the major components of the TSP were considered. The roadway alternatives included downtown couplet reconfiguration; west side collector; north side collector; east side collector. Each of the alternatives was evaluated against the following criteria: the ability of the improvement to improve access and connectivity throughout the community; the capacity needs of the roadway system; construction costs; land use impacts; and environmental impacts. Pedestrian and bicycle alternatives included adding sidewalks to collectors and arterial streets where none currently exist; development of off-street pathways. Transit alternatives included a number of routing alternatives for the Silver Trolley as well as an intercity bus service alternative. As in any plan not all of the alternatives were included as final recommendations in the final system plan. The decision to drop certain alternatives also took into consideration its compatibility with the selected review criteria as well as with expressed community values.

Transportation System Plan

The system plan is the culmination of the traffic and population projections, combined with the various alternatives, in an effort to determine a preferred alternative. A critical component of the TSP is an updated roadway plan which identifies an appropriate functional classification of streets and associated design standards; a plan for widening and pavement rehabilitation of existing streets; and a plan for new street construction. The following is an overview of each section of the TSP to highlight both the existing conditions and the planned aspects of that component of the TSP.

Existing Roadway Conditions

Within a community there are a number of different types of streets. Each type is designed, or should be designed, to serve a particular type of transportation function. A roadway hierarchy system can be likened to a water course hierarchy, where small creeks feed into larger creeks, which in turn feed into rivers. In much the same way roads can be viewed as functioning. At the "headwaters" of the system are the local or residential streets. These are streets which are designed to provide primarily local access to properties which either are presently developed, or



LEGEND	
	STATE ROADWAY
	COUNTY ROADWAY
	PRIVATE ROADWAY
	UGB
	CITY LIMITS

EXISTING ROADWAY JURISDICTION

CITY OF SILVERTON, OREGON
 TRANSPORTATION SYSTEM PLAN
 NOVEMBER 1999

FIGURE

1



2891

9/2891F002.DWG

will eventually be developed. Local streets are narrower streets with a curb to curb pavement which can vary inside the right of way. The purpose of this is to encourage both access and connectivity, while trying to control vehicle speeds. Local streets also tend to have low traffic volume counts. Higher up the functional hierarchy are collector roads. These are roads which are intended to carry greater traffic volume counts as they take traffic from local streets and move it to other local streets, but primarily towards arterial streets. Arterial streets are the major streets within a community. These are streets which carry the largest volume of traffic and includes traffic which may be staying within the community but also be designed with the needs of traffic which primarily intends to pass through a community. Because of the increased traffic load, and the likelihood that these types of streets will have a higher speed limit than local streets, they are designed to be a wider street inside a wider right of way.

The following streets are classified as:

Arterial streets:

- C Street (between McClaine and First Streets)
- First Street (between north UGB and Lewis Street)
- Lewis Street (between Water and First Streets)
- Main Street (between Water and First Streets)
- Oak Street (between Water Street and the east UGB)
- Silverton Road (between Westfield Street and west UGB)
- Water Street (between C Street and south UGB)
- Westfield Street (between Main and McClaine Streets)

Collector streets:

- Eureka Avenue
- Evans Valley Road
- Hobart Road
- Ike Mooney Road
- James Street (between Hobart Road to Water Street)
- Jefferson Street (between James Avenue to Second Street)
- McClaine Street (West Main to C Street)
- Monitor Road
- Pine Street (James Avenue to City limits)
- Second Street from Jefferson to C Street)
- Steelhammer Road
- Water Street (James Avenue to C Street)
- West Main Street (First Street to Westfield Street)

All other streets are classified as local or residential streets.

It is often assumed that all streets which are within the city limits are maintained by the City of Silverton. However, within the UGB, jurisdictions of roads fall into four categories (Figure 1), City, state, county, and private. Each of these jurisdictions is responsible for upkeep and

maintenance of that particular street, or segment of the street. That particular jurisdiction is also responsible for issuing access permits onto that street. With the exception of private roads each jurisdiction which has ownership for a street, or even a portion of a road, is responsible for the upkeep of that facility and the issuance of access permits. As a result of this multi-jurisdictional approach of the community's streets there can often be confusion over access standards, roadway standards required during construction projects, traffic enforcement issues also result from city police not having jurisdiction on county roads. In an effort to minimize any potential confusion there will be a greater coordination between the City, Marion County and the State for development projections along either state or county roads.

State highways: Oak Street, South Water Street, North First Street, Front Street, and a portion of C Street, along with a portion of North Water Street.

County roads: C Street (from McClaine Street to Front Street), Eureka Ave., Industrial Way, Evans Valley Road, Quarry Road, Cascade Highway, Westfield Street, Silverton Road, Western Street, Ike Mooney Road, Evans Valley Road, Steelhammer Road, Monitor Road, Monson Road, Folsom Road, Hobart Road, Jefferson Street; and parts of East Main St., Reserve Street, North Second Street, James Street, Grant Street, and Pine Street.

Private: East View Lane, Division St., Woodland Drive, western end of Industrial Way, Latham Lane, Setness Lane, Stark street.

All other streets are within the City's jurisdiction.

The TSP includes detailed traffic counts for 24 intersections within the city. This information illustrates the level of service, average delay observed at each intersection, critical volume to capacity ratio, critical movement, as well as break down of movements for existing conditions. This information provides the basis for projections and to help determine which intersection may require additional improvements. The result of this data collection indicates that currently most of the intersections function at acceptable levels. The exception to this is the C and Water Street intersection, and the C and McClaine Street intersection which are both at level E or worse.

Roadway plan

Figures 2 and 3 shows the classification of both existing and planned streets. Of particular importance are several planned future collector roads. Several collector roads are determined to be needed to better move traffic, both through the city, as well as to efficiently move traffic within the city. The function of a collector road is to provide both direct access to local properties as well as move traffic from residential or local streets to arterial streets. The future collector roads will be designed to have a curb to curb pavement width of 36 feet, within a public right of way of 70 feet. Along the east side of the community a collector road is planned to eventually connect Oak Street with South Water Street. This future street is planned as intersecting Oak Street near the Monitor Road intersection and then paralleling Steelhammer

Road to intersect with Evans Valley Road in the 14400 to 14500 block of Evans Valley Road. The future road will then proceed south, through the large 100 acre property in the 4300 block of Evans Valley Road. The collector will continue along a section of Ike Mooney Road where it will connect to South Water Street as either a new road paralleling Division Street or the continued but improved use of Ike Mooney Road depending on traffic engineering studies. A segment of this road is planned to travel outside the City's UGB. Prior to the construction of this particular segment the location will need to be consistent with County and State land use regulations. In the west side of the community a future collector road is planned connecting Silverton Road to Pine Street. This future street will follow Monson Road to Silver Creek where it will need to cross the creek in area east of the Silverton Treatment Plant.

Neighborhood collector:

Streets which are identified on Figure 27 (page 87) of the Transportation System Plan are designated to be neighborhood collectors. The intent of this designation is to recognize that certain segments of these streets have predominant characteristics such as street trees, narrow streets, substandard rights-of-way and/or substandard home setbacks located in well established neighborhoods. If the street were automatically improved to full collector standard it would reduce its livability attributes. Because new wider urban collector street widths could destroy the appearance and character of the neighborhood, the City desires to specifically exempt a street or segment of a street which is designated as a neighborhood collector from future consideration for upgrades that would use the new urban collector standard. Figure 27 shows the Established Neighborhood Collector streets that have been determined to be exempt from the full urban collector standard.

Unlike new collectors it is difficult to come up with a specific standard of what the cross section of a neighborhood collector would look like since by definition it is intended to be designed on a case by case basis. The question of who should decide to what extent these streets be improved is a valid one. The most efficient way to determine what level of improvement is appropriate for a particular neighborhood collector is for the City Engineer to make design recommendations to the City Council, with the Council making the final determination.

Neighborhood collectors

East Main Street, from Steelhammer Road to Third Street
Steelhammer Road, from Oak Street to Crestview Drive
West Main Street, from Eureka Avenue to Silver Creek bridge
McClaine Street, from West Main Street to James Street
James Street, from Schaldor Street to railroad tracks
Pine Street, from James Street to Grant Street
North Water Street, from James Street to railroad tracks

The Plan lists a number of street intersections which will need improvement during the planning period. In the interim period traffic control personnel are being used to move traffic through key

intersection in an efficient cost-effective manner until these intersections can be improved.

These include:

- C / First - add new signal
- C / McClaine / Westfield Street - add left turn lanes, new traffic signal
- C Street / N. Water Street - add turn lanes, new traffic signal
- First Street / Oak Street - new traffic signal
- Water Street / Main Street - add traffic signal, convert south approach to two-way
- N. Water Street / Oak Street - add traffic signal
- W. Main Street / McClaine Street - add left turn lane on McClaine Street

The TSP contains a projected list of streets which are planned to be re-paved, or in the case of gravel streets to be paved. This is part of the City's intent to upgrade substandard streets.

Existing Public parking

A downtown parking study was initiated in the summer of 1998 to address the issue of downtown parking for customers, residents, and employees. The study concluded that at the present time there is sufficient parking capacity to satisfy the current parking needs. At the time of the study there were approximately 1,100 private and public parking spaces available in the downtown core. It was estimated that these parking spaces were utilized approximately 40% during the weekday peak period, and about 25% during the Saturday peak period. However, the study did document that if some of the private lots which are currently used for public parking were to become unavailable for public parking then there would be a parking shortage within the downtown. Overall, parking demand was observed to rise sharply in the morning and level off from 10:00 a.m. to about 4:00 p.m., with a slight increase in parking demand mid-afternoon, and then settling back down to low parking demand levels after 4:00 p.m. Most motorists are parked for no more than one hour, however 6% of the vehicles were observed to park for more than 4 hours.

Public Parking Plan

The recommendation of the Downtown Parking Study include:

- Continue the use of parking meters, but consider increasing the levels of fines.
- Seek out shared use agreements with various churches and lodges in the downtown area.
- Discourage business employee parking in the City park parking lot on West Main Street.
- Eliminate the practice of allowing Eugene Field staff have unlimited free parking in metered parking spaces.
- Avoid parking policies that reserve a parking space for a single business.
- Purchase properties which can be used for public parking.
- Loading zones should have posted operational times to allow short-term parking.
- Expand the use of the Silver Trolley to provide shuttle service between the Oregon Garden and the commercial downtown core.
- Formulate a parking district for the downtown area.
- Develop uniform signage to direct drivers to public parking areas.

Existing Pedestrian and Bicycle Facility

Sidewalks are located on many of the downtown streets, although further from the city center, sidewalk linkages are missing. Sidewalks are being provided in all newer subdivisions but are often lacking within older, established residential neighborhoods. In some cases sidewalks are only provided on one side of the street and pedestrians are forced to cross the street in order to continue walking on the sidewalk along the same road. Bike facilities are essentially limited to the use of the existing street or sidewalk systems.

Pedestrian and bicycle plan

The TSP recognizes that sidewalks and bicycle lanes are important features of the City's transportation system (Figures 4 and 5). Sidewalks will be constructed on at least one side of all designated arterial and collector streets in the City during the 20-year planning period. The plan identifies a number of streets which do not have a complete sidewalk system. It is important to note that as new developments are constructed or as road improvements are made, existing sidewalks are connected to new sidewalks. Sidewalks will be included as part of any reconstruction of arterial and collector streets. Local streets without sidewalks should periodically be reviewed to determine a priority funding list for such improvements. This list of streets requiring sidewalk improvements includes:

- C Street between McClaine and Front Street
- Cascade Highway west of Westfield Street to provide a connection to the Oregon Garden
- Eureka Avenue
- Hobart Road
- Jefferson Street between N. Second Street and James Avenue
- James Street north of Florida Avenue
- Monitor Road
- N. Second Street north of Whittier Street
- Oak Street east of Norway Street
- Pine Street west of Grant Street
- South Water Street south of Peach Street
- Steelhammer Road
- East Main Street

In addition, several off-street pathways were identified as needing to be constructed during the planning period. These include:

- A new pathway along portions of a designated route connecting downtown Silverton with the Oregon Garden, via Coolidge Street, Keene Avenue, Eureka Avenue, and an existing easement into the Oregon Garden site.
- A new pathway on the east side of Silver Creek between Wesley and Cowing Streets, and along Cowing Street to South Water Street.
- A new pedestrian bridge over Silver Creek in the vicinity of Lewis Street, and another pedestrian bridge in the Cowing Street area.

Existing Rail Service

The Willamette Valley Railroad currently provides branch line rail service for the shipment of commodities between Salem, Stayton, and Woodburn, through Silverton. The line is classified as exempt to certain rail standards meaning it is limited to only carrying freight at speeds which do not exceed 10 miles per hour. Passenger rail service to Silverton residents is provided by AMTRAK in Salem or Portland.

There are six existing railroad/ highway grade crossings in Silverton:

- First Street south of Whittier Street
- Hobart Road west of Highway 214
- James Street north of C Street
- Jefferson Street west of Highway 214
- Silverton Road west of C Street
- Water Street north of C Street

Gates and flashing lights are provided at the grade crossings on First and Water Streets and Silverton Road, with no flashing lights at the other crossings.

Rail Facilities Plan

The TSP recognizes that the Willamette Valley Railroad provides an important transportation alternative to businesses within the community. The City should continue to support the operation of this rail line. At the present time the rail line is limited to carrying only freight. However, if passenger service could be provided then Silverton residents and businesses would gain from this transportation opportunity. With the development of the Oregon Garden it may be appropriate to consider a variety of economic tie-ins, one of which might be a tourist dinner train operating along the branch line. The City will encourage the development of passenger and tourist use of this train line. There are three rail/highway grade crossing in need of improvement in Silverton, associated with the Willamette Valley Railroad. These include:

- James Street - crossing gates and signals
- Jefferson Street - crossing gates and signals
- N. Water Street - possible crossing modifications associated with nearby C Street intersection improvements

Existing Transit Service

Silverton is unique among smaller sized cities in that transit service has been available in Silverton since July, 1998. The Silver Trolley, a 14-passenger van, is owned by the City of Silverton and operated by the City of Silverton. The Silver Trolley runs a fixed route daily excluding weekends. It also provides intercity bus service connection to Wheels Community Transportation. In addition, the Silverton Hospital runs Senior Plus, a medical transportation program that has operated successfully for nine years. Seniors over 55 years of age and disabled citizens of any age can schedule demand-response rides for medically-related appointments Monday through Friday. Other transit operations are limited to the Silver Falls School District school buses, and the Silverton Taxi service.

Transit Facilities Plan

The Transit Facilities Plan of the TSP stresses the value of the community having and maintaining a local transit system. The City will continue to support the operation of the Silver Trolley as a means to provide transit service. In the future as transit service expands the City of Silverton / Silverton Hospital may choose to work closely with the Marion and Polk County Brokerage under the auspices of Chemeka Regional Transportation System.

The vision of the Silver Trolley is for ridership to grow at a steady rate and to be able to provide increased levels of service compatible with constraints of a community of Silverton's size. At the present there is only one 14 passenger van which is dependant upon volunteer drivers for providing the service. It is envisioned that as funding options become more secure, an additional vehicle will be purchased, and that paid drivers will be hired so that the organization becomes less dependant on the time constraints of volunteers.

Existing air, water, pipeline

Silverton does not have a publicly-owned airport. Regional and commercial air service for passengers and freight is provided at the Portland International Airport. The nearest public general aviation facility is at the Salem Regional Airport. There is a site in the northwest corner of the community which historically was used as both a public and private airport from the 1920's to the early 1980's. At the present time the property is outside the Silverton Urban Growth Boundary and under Marion County's jurisdiction for land use regulations. Marion County regulations do not allow a public airport within an Exclusive Farm Use zone, but could allow a private airstrip for personal use as a conditional use. The area is flat and contains an unimproved landing strip. Urban residences are located to the south, along with a new high school to the southeast. Agricultural uses are to the north and west.

Pipeline transportation in and through Silverton, is limited to transmission lines for electricity, cable television and telephone service, and pipeline transport of water, sanitary and storm sewer, and natural gas. Waterborne transportation is limited to recreational use of the Silverton Reservoir located to the south of the UGB. Due to the size of Silver Creek there are no significant recreational opportunities along this water feature.

Air, Water, and Pipeline Facilities Plan

Any use of the former airfield site at the northwest corner of the city for the purpose of either a private airstrip or public airport, will require review and approval of the applicable jurisdiction for zoning matters. Any potential flight patterns would need to be directed away from both the school and nearby residences consistent with federal and state regulations. It is unlikely that a public airport would be either owned or operated by the City, and so will likely need to be privately owned. As there are no navigable rivers or lakes within the Silverton UGB waterborne transportation is not an issue, or a need, now or in the future. All existing pipelines within and through Silverton should be maintained as per the plans of the respective utility companies. Any roadway improvements in the future that would impact a particular pipeline will need to properly

address any required localized relocation of such facility.

Access Management Strategies

The TSP contains access management strategies for Silverton Road and Highway 214. These two streets were selected for consideration of various access management strategies because each street has some amount of development, or redevelopment potential. The purpose of access management is to facilitate the flow of traffic and to improve the safety of a roadway corridor. Access management strategies are applied to major roadway facilities in order to provide for efficient function which that facility was intended to provide for travel through the highway corridor. Without access management, traffic conditions in a corridor may become congested due to queues forming across driveways, long delays in entering or exiting the route, and increased accident experience in the corridor.

Each street was broken down into smaller segments and existing conditions were mapped and discussion of specific access management strategies was presented. Typically access management strategies can include: traffic signal spacing; traffic signal operation; number of travel lanes; driveway spacing; driveway location in relation to driveways on the opposite side of the street or to public intersections; left-turn lanes; width of left-turn median; raised medians; and local street circulation systems.

Specific recommendations for Silverton Road include several potential measures: realignment of Railway Avenue to intersect across from Monson to eliminate the off-set street intersection. Develop an internal road system on the north side of Silverton Road extending from Rogers Lane to Fosholm Road. Construct a raised median in the center lane of Silverton Road to restrict local access and turns. Establish a uniform driveway spacing standard of 175 feet between driveways.

Specific recommendations for Highway 214 include several potential measures: Construct a raised median in the center lane to restrict local access and turns. Access to new developments should be either off Second Street, combining driveways to serve multiple developments, or through the use of frontage roads. The TSP also contains access spacing standards. These standards are to be included within the zone code as part of a new section which pertains to access issues.

Transportation financing plan

The TSP identifies approximately \$24 million worth of transportation related projects that are to be funded over the 20 year planning period. Slightly more than a quarter of this amount (\$6.3 million) is proposed to be associated with the reconstruction of arterials and collector roads. Most of these improvements are scheduled as long term projects. Another \$6.4 million is projected to be spent on the construction of new collector roads. The remaining \$12 million will be needed for projected intersection improvements, pavement overlays, pedestrian and bicycle facilities, and expanded bus service. Table 6 gives a detailed breakdown and description of the transportation improvement program.

Table 6
Recommended Transportation Improvement Program

Type of Transportation Improvement	Estimated Construction Cost (Existing \$)	Timeframe of Improvement*
New Roadways		
East side Collector (Monitor Rd. Extension) (8,500')	\$4,200,000	Long-term
West side Collector & Bridge (Pine St. to Silverton Road)(2400')	\$1,680,000	Long-term
Subtotal	\$5,880,000	
Roadway Reconstruction		
C Street (1,950') (First - Westfield)	\$635,000	Mid-term
W.Main St. (Westfield to Petit Lane)	\$1,880,000	Long-term
Eureka Ave. (5,200') (W.Main to Edison Rd)	\$1,440,000	Long-term
McClaine Street, west of S. Creek Shopping Center (3,500')	\$970,000	Mid-term
N. Second Street, R/R to City Limits (1,280')	\$360,000	Short-term
S. Water Street (south of Jersey Street)(1,000')	\$325,000	Long-term
Westfield Street (2,450') (McClaine to W Main)	\$880,000	Mid-term
East Main Street	\$320,000	Short-term
Steelhammer Road	\$320,000	Short-term
Subtotal	\$7,130,000	
Local Street Improvements		
Overlays of existing paved streets,(numerous locations)	\$500,000	Short-term, Mid-term, Long-term
Pave selected gravel streets (5,100') Ames Street, north of Main Street B Street, west of Highway 214 Brooks Street, between Alder and Short Streets D Street between First and Second Elm Street N. Third Street, north of Oak Street Mead Street Ord Street Park Street Fosholm Street Johnson Street Lane Street east of N. Second Street Orchard Street Short Street	\$2,270,000	Short-term, Mid-term, Long-term
Install traffic calming devices on selected local streets	\$500,000	Short-term, Mid-term, Long-term
Subtotal	\$3,270,000	
Intersection Improvements		
Cascade Hwy/Westfield Street (channelization)	\$350,000	Short-term

Type of Transportation Improvement	Estimated Construction Cost (Existing \$)	Timeframe of Improvement*
C Street/Water Street (Signal & Intersection Improvement) C Street/First Street (Signal)	\$600,000 \$150,000	Short-term Mid-term
C Street/McClaine Street (Signal or Roundabout)	\$380,000	Short-term
Hobart Road/Highway 214 (Channelization)	\$100,000	Mid-term
Main Street/Water Street (incl. converting S. Water St. to 2-Way between Lewis and Main)	\$200,000	Mid-term
Main Street/McClaine Street (Channelization)	\$150,000	Mid-term
Oak Street/First Street	\$150,000	Mid-term
Subtotal	\$2,080,000	
Pedestrian Facilities		
Pathway connecting downtown with Oregon Garden (via Coolidge Park Keene St)	\$115,000	Mid-term
Pathway on east side of Silver Creek (Wesley to Cowing St.)	\$70,000	Mid-term
New pedestrian bridges across Silver Creek (at Jersey St. and Cowing St.)	\$170,000	Mid-term
New sidewalks along arterial/collector streets where needed and street not identified for reconstruction	\$500,000	Short-term, Mid-term, Long-term
Subtotal	\$855,000	
Bicycle Facilities		
Bike path on west side of Silver Creek (within Coolidge Park to Cowing St)	\$330,000	Long-term
Bike route signing on streets without bike lanes	\$25,000	Short-term
Subtotal	\$355,000	
Transit System Improvements		
Phase 1 Service Improvements (see Table 16)	\$1,080,000	Short-term
Phase 2 Service Improvements (see Table 16)	\$2,500,000	Long-term
100-space park-n-ride	\$300,000	Long-term
Subtotal	\$3,880,000	
TOTAL TRANSPORTATION IMPROVEMENTS	\$22,595,000	

*Short-term=0-5 years, Mid-term=6-10 years, Long-term=11-20+ years

The following policies are intended to be used by the City to guide the development of the city's transportation system over the next 20 years and the development of land which linked to the city's transportation system. Some policies are geared to specific areas such as transit and will be used by the City when applying for various funding options. Other policies will offer guidance and direction to the city when reviewing various land use proposals such as subdivisions, zone and comprehensive plan changes, and other land use proposal which require compliance with various comp plan policies.

POLICIES

A. Coordination

1. The City of Silverton shall notify ODOT of all project proposals and development applications adjacent to state highways.
2. The City shall notify Marion County of all project proposals and development applications adjacent to county roads.
3. The City of Silverton shall notify ODOT, DLCD, and Marion County of proposed changes to the City's Transportation System Plan.

B. Access management

1. New development along arterial and collectors shall conform to the identified City of Silverton access spacing standards in the TSP, and other access management requirements identified in the Oregon Highway Plan and the Marion County Rural Transportation plan for roads under their jurisdiction. Access permits on state and county roadways shall be obtained from ODOT and Marion County Public Works, respectively.
2. Proposed new developments or redevelopment on arterial and collectors will include shared access with adjacent properties to the extent possible.

C. Protection of Transportation Facilities

1. Review of land use proposals and development applications shall include consideration of options to minimize impacts on transportation facilities.
2. All plan map amendments shall conform to the adopted TSP. Proposed amendments should not substantially impact the functional classification or operation of transportation facilities. To ensure proper review and mitigation, a traffic impact study may be required for proposals that may impact transportation facilities.
3. A list of transportation improvements that are allowed, conditionally allowed or permitted through other procedures will be included in the Zoning Ordinance amendments to better implement the TSP.

D. Street System

1. New street improvements shall be consistent with the general location, functional classification, and typical cross sections (street standards) as set forth in the TSP.
2. New developments shall provide for street connectivity.
3. New developments shall provide for necessary street improvements which shall be consistent with the street standards in the TSP and other City ordinances.
4. The City of Silverton shall encourage the use of traffic calming mechanisms as a means to reduce traffic speeds.
5. In recognition that the entry points into the community along North First Street, Silverton Road, Oak Street, Pine Street, and South Water Street, will be some of the most heavily traveled routes into the community by tourists, the City of Silverton will develop strategies for "gateway" improvements.
6. The City of Silverton shall continually work towards ensuring that all reasonable effort is made that the identified transportation improvement projects are completed during the identified planning period. The projects listed within the TSP shall conform to projects identified within the City's Capital Improvement Plan (CIP). The CIP shall be reviewed on a bi-annual basis.
7. Streets identified in the City's TSP as "future collector roads" or as new local streets, or local street extensions are determined to be necessary for the proper development of the City of Silverton's transportation system during the 20-year planning period.
8. The developer of property which has a future collector located on it shall be responsible for the construction of this street up to residential street standards. The City of Silverton shall participate in the construction of the roadway above residential street standards.
9. The City of Silverton shall encourage future residential streets and driveways to have direct access onto future collectors.
10. Any segment of a future collector that is located outside the UGB shall not provide access to lands outside of the city limits.
11. When a proposed development is determined by the City to adversely impact the function of either a street or an intersection then the developer shall be responsible for providing necessary improvements to mitigate this impact on the City's

transportation facility.

E. Public Transportation

1. The City of Silverton shall continue to support the Silver Trolley to provide transportation service for the transportation disadvantaged in Silverton. This will include both fixed route and para-transit service.
2. The City of Silverton should continue to support the efforts of the Special Transportation Advisory Committee or its successors in the implementation of the Regional Transportation Enhancement Plan.
3. In an effort to minimize parking space constraints and to encourage visitors to the Oregon Garden to visit the commercial core, the City of Silverton shall support efforts to expand the fixed-route bus service to serve the Oregon Garden and other City attractions.
4. The City of Silverton will support efforts to develop intercity bus and rail service between Silverton and other cities such as Salem and Woodburn.
5. In an effort to minimize vehicle miles traveled, the City will encourage demand management programs such as commuter park-and-ride lots and vanpools to reduce single-occupancy auto trips to and from Salem.
6. The City of Silverton shall continue to be active in working with appropriate jurisdictions towards the formation of a coordinated regional transit effort.

F. Pedestrian System

1. The City of Silverton shall continue to extend its sidewalk system along arterial and collector roads.
2. All new developments shall provide a sidewalk with curbs and gutters and storm drainage facility along the frontage of any arterial, collector, or residential street. Any requirement for off-site improvements shall be based on a rough proportionality of the impact of the new development.
3. The City of Silverton shall initiate strategies to fill in the gaps in the existing sidewalk system.
4. Residential streets shall be further assessed and prioritized with respect to sidewalk development.
5. New developments such as subdivisions, schools, etc. shall provide internal sidewalks an/or off-street pathways for connectivity to adjacent parcels which are

either undeveloped or planned to be developed.

G. Bicycle System

1. The City of Silverton shall develop a bike lane / route system along arterial and collector roads.
2. All new developments shall be required to provide new bike lanes along the frontage of any arterial or collector roads. Any requirements for off-site improvements shall be based on a rough proportionality of the impact of the new development.
3. Streets shall be further assessed and prioritized with respect to bike lane development.
4. Appropriate bicycle parking facilities shall be provided at all new commercial, industrial, institutional and multifamily developments of four or more units. Bicycle parking facilities shall be located on site within 50 feet of a primary entrance.

H. Railroad

1. The City of Silverton shall continue to support the operation of the Willamette Valley Railroad as a means to provide alternative freight transportation services to the community.
2. The City of Silverton shall explore efforts to encourage linkages of commuter and tourist passenger rail services between Silverton, Portland, Salem, and other cities.
3. Any future street crossing of the railroad tracks shall be consistent with ODOT and PUC requirements.
4. The City of Silverton shall explore efforts to encourage pedestrian facilities linked to passenger and commuter and tourist linkages of rail services between Silverton, Portland, Salem, and other cities.

I. Air, Pipeline, and Water

1. It is unlikely that a public airport would be either owned or operated by the City
2. As there are no navigable rivers or lakes within the Silverton UGB waterborne transportation is not an issue, or a need, now or in the future.
3. All existing pipelines within and through Silverton should be maintained as per

the plans of the respective utility companies.

4. Any roadway improvements in the future that would impact a particular pipeline will need to properly address any required localized relocation of such facility.

ENERGY

GOAL

Conserve energy resources and encourage use of reusable energy resources.

OBJECTIVES

1. Encourage energy conservation through sound land use and transportation planning policies.
2. Encourage energy conservation through weatherization of new and existing residential and commercial structures.

EXISTING CONDITIONS

Overview

It is important to note at the outset that energy conservation itself is not the major aim of a total energy policy. Rather, conservation provides a means for achieving social goals such as the: 1) reduction of dollars wasted in producing energy whose value to consumers is less than the added production cost, 2) reduction in environmental damage caused by energy production and use, 3) preservation of depletable energy resources for future generations, 4) improving economic justice by avoidance of hardships to economically disadvantaged groups, 5) preservation of freedom of choice, and 6) reduction of vulnerability to the interruption of foreign sources of energy.

Many improvements in the efficiency of energy production or consumption are not necessarily socially desirable. For instance, while removal of automobile mufflers would improve the efficiency of energy use, it would also raise the noise produced by automobiles to an undesirable level. Therefore, where the use of energy yields benefits in excess of its cost to society (i.e., automobile mufflers) energy policies would generally tend to encourage it. Where the opposite is the case, conservation measures would be encouraged.

For the most part, energy policy in this larger context can only be effected on a national, regional or in some cases, a state level. Local jurisdictions can affect energy production and consumption practices only minimally. Of the courses open to cities such as Silverton, encouraging conservation in energy consumption seems to be the most effective means for achieving the broad social goals associated with energy policy and for implementing the state energy goal.

Historical Energy Uses

From 1962 to 1973 there were upward trends in energy consumption in the United States as a whole, in the Northwest and in Oregon. During this period the average annual rate of growth in total energy consumption was 5.5%². In 1974, the economic recession and the oil embargo combined to reduce total consumption in Oregon by 4.7%. This decline continued through 1975.

²The Historical data on energy use presented in this element is taken from "Oregon's Energy Future", Second Annual Report, Oregon Department of Energy, January, 1978.

Residential

From 1962 through 1972, residential consumption rose steadily at an annual rate of 3.6%. During 1973 and 1974, usage declined 3.6% and 5.2% respectively. However, in 1975, residential consumption increased by 2%. This sector now accounts for approximately 20% of total state energy usage. Portland General Electric currently supplies approximately 24 million kilowatt hours for residential use in the Silverton area at a price of about 27 mills per kilowatt. Research done by the Department of Energy indicates that water heating alone accounts for 65% of the energy needed to operate the typical non-electrically heated home. Cooking, refrigeration and lighting follow in order of energy use comprising about 13%. Electricity and natural gas have largely replaced petroleum products in the provision of energy for residential use during the period from 1962-1975. Electricity now accounts for about half of residential energy consumption. Since Silverton's population is projected to grow significantly over the next two decades, additional amounts of energy will be needed in the residential sector.

Recent Conservation Legislation. During the past several years the State of Oregon has adopted legislation aimed at encouraging conservation of energy and use of alternative energy resources in the residential sector.

Conservation through weatherization of homes is the focus of state legislation. Measures enacted include the following:

1. In July 1974 a building code emphasizing thermal efficiency for all new residential construction was enacted. Homes built since July 1974 must meet required levels of insulation in the ceiling, floors and walls. A new code will go into effect sequentially in March 1978 and January 1979. Ceiling and floor insulation values will be increased and double glazed windows and vapor barriers will be required.
2. ORS 757.730 establishes programs for consumers to obtain a range of information and weatherization services directly from space heat energy suppliers. These services include home heat loss inspections, cost estimates of energy saving measures and information about low-interest loans. Lending institutions will provide 6-1/2% loans for people who take advantage of these programs.
3. For veterans, ORS 407.058 requires that in order to acquire a veteran's loan for a home built prior to July 1, 1974 (when state insulation standards went into effect for new home construction), the home must meet new "retrofit" weatherization standards set by the Department of Commerce. Eligible veterans may also finance weatherization home improvements through this measure.
4. Numerous Federal programs provide weatherization assistance to low-income and elderly persons. At the state level, ORS 310.681 appropriates \$4 million to the Department of Revenue for home weatherization expenses for low-income and elderly residents. This is a reimbursement plan for the cost of weatherization materials and services up to \$300 per household for those who qualify.
5. Oregon provides a tax credit of up to \$125 for the cost of weatherization materials. ORS 316.088 allows a personal income tax credit for individual taxpayers to improve the energy efficiency of their principal residence or the principal residence of their renters, excluding mobile homes. Installation must meet applicable minimum standards of the Uniform Building Code.

Implementation of these weatherization programs has already begun. The Department of Energy has analyzed the expected impacts of these programs and estimates that on homes built before 1975, the annual yearly savings in energy used for space heating would be approximately 20% for single family homes and 23% for apartments. This estimate was based on the assumption that actions equivalent to insulating ceiling to R-19 and floors to R-9, wrapping three inches of extra insulation around water heaters located in unheated areas, and weatherstripping and caulking would be taken.

Recent Alternative Source Legislation. Because its major energy uses have relatively low-temperature heat requirements, the residential sector is particularly suitable for direct heat applications of alternative resources, such as solar and geothermal energy. Perhaps the greatest inhibiting factor in the use of alternative resources in this

Energy

sector is initial cost. The "first cost" for the installation of alternative systems, in both conversion of older homes and new construction, is still more than for a conventional electric or fossil fuel system.

To help overcome this cost barrier, two major bills were passed by the 1977 Oregon Legislature:

1. ORS 307.175 provides a tax credit to any Oregon homeowner who installs a certified solar, wind or geothermal energy device in their principal or secondary residence. Twenty-five percent of the investment cost, up to \$1,000, may be claimed provided the alternative energy device will meet or exceed 10% of the total energy requirements of the home and has been certified by the Department of Energy.
2. ORS 407.048 applies to all veterans who install solar, wind or geothermal energy devices in their homes. A Department of Veterans's Affairs (DVA) loan of up to \$3,000 may be obtained, provided the alternate energy device meets criteria established by the DVA.

The Department of Energy forecasts that by 1997, 1.3% of residential units will have solar space heating and 37% will have solar water heating. At this time there is one Silverton home that utilizes solar energy for water heating.

Commercial

The commercial sector accounts for about 10% of Oregon's total energy consumption. Usage patterns in this sector closely resemble those in the residential sector with most of the energy applied to space and water heating in stores, offices and public buildings. Nearly 14 million kilowatt hours of electricity are supplied to commercial accounts in Silverton at an average price of 23 mils per kilowatt hour. As the population of Silverton increases, commercial demand for energy will continue to rise. However, several important factors appear to be developing which will affect future use patterns.

First, the increasing cost of energy will tend to improve the efficiency of energy use in the commercial sector by eliminating energy waste through better insulation, better appliances and more efficient business practices. As a result, slower growth in commercial energy demand is expected.

Second, mandatory and voluntary energy conservation standards could also slow the growth in energy consumption in this sector. For example, ORS 456.747 mandates maximum lighting standards for all public buildings constructed on or after July 1, 1978. Voluntary lighting standards for all existing public buildings will also be established. In addition, voluntary energy conservation standards for existing public buildings will be developed in accordance with ORS 456.748.

Third, reliance of the commercial sector on unconventional energy sources which are either renewable or in much more abundant supply will tend to increase over time. Commercial buildings heated with solar energy already exist. Increasing prices of conventional energy sources, technical progress, incentives for solar and other unconventional energy installations, and increasing public recognition and acceptance of renewable energy sources mean that the long-term prospect for the utilization of alternate energy sources is favorable.

Industrial

In 1975 the industrial sector accounted for 28% of Oregon's total energy consumption. The shares of total industrial usage represented by petroleum and natural gas have fluctuated significantly since 1962, in part reflecting shifts in the relative prices of these fuels. In contrast, electricity's share of total usage has remained fairly constant. This is primarily because electricity is used mainly in situations where other fuels can not be readily substituted. In the future, the Department of Energy expects petroleum usage to increase as the industrial use of natural gas declines. In addition, there could be an expanded usage of other sources, especially coal. The rate at which other fuels are introduced will be largely affected by governmental incentives and disincentives for using certain fuels.

Cogeneration (production of electricity via additional steam from oil or gas burners as part of existing industrial

process) has received much publicity lately, but has not been widely utilized because the economics have not been favorable. This is especially true in Silverton and other Oregon cities where the electricity prices are low. The only likely application of cogeneration in Silverton would be in the food processing plant, where the large amount of steam used would justify cogeneration. The seasonality of the operation, however, renders the practice unattractive.

Transportation

The transportation sector is the largest use of energy in Oregon, accounting for 42% of the State's total energy consumption in 1975. Virtually all the consumption in this sector is in the form of liquid petroleum fuels and 87% of the energy used for transportation was gasoline and diesel fuels for highway travel. This amounted to 36% of the state's total energy consumption.

In the Economic and Transportation elements the potential for a car pooling and commuter bus program between Silverton and Salem was discussed. While it is difficult to predict the amount of energy that could be saved through the successful implementation of such a program there is no doubt that it would be significant. Some energy could also be saved through an improvement in vehicular movement patterns, particularly in the downtown area. "Stop and go" driving consumes more energy than smoother, non-stop driving.

Future Energy Sources

Over 38 million kilowatt hours are used annually within the City of Silverton at an average price of 26 mils per kilowatt hour. Table 25 provides a detailed breakdown of electric energy usage in Silverton from 1977 to 1978.

Electricity is now provided to Silverton by Portland General Electric. There is a future potential for local energy production through placement of a hydroelectric generator plant on Silver Creek. CH2M HILL engineers have made a rough estimate of the power potential and project costs for construction of such a facility.

The potential for generating power at Silverton Dam would vary considerably from season to season. There would be approximately 200 to 250 cubic feet of water per second (cfs) available about 80% of the time from November through May when normal water flows result in fairly large and continuous spillway discharges. The available flow would be dramatically reduced during the remainder of the year. Only 5 to 50 cfs would be available from June through October, with an average of about 10 cfs. During this period the reservoir could be drawn down below the spillway crest and the only releases made would be those required for city use and possibly for fishlife. The overall energy production of the plant would average about six million kilowatt hours per year.

TABLE 25 ELECTRICITY USAGE, AUGUST 1977-JULY 1978 City of Silverton			
Type of Use	Number of Accounts	Kilowatt Hours (kWh)	Dollars Charged
Residential	1,893	23,893,225	640,626
General Commercial	295	13,739,282	317,988
Residential Outside Lighting	7	6,216	480
Commercial Outside Lighting	21	66,120	3,401
Public Outside Lighting (city street lights, schools)	5	410,578	20,846
Summer Lawn Irrigation	2	616	36
Total	2,223	38,116,037	983,377
Average cost per kilowatt hour -		25.7 mils	
Average kWh per household -		12,622/27 mils per kWh	
Average kWh per Business -		46,574/23 mils per kWh	

Source: Portland General Electric, (Silverton Office) Area Revenue Report, July 1978

The estimated construction cost of the facility is about 1.5 million dollars. Energy costs based on the relationship of annual project costs (construction loan amortization, maintenance costs, operating costs, insurance, supplies, and administration) to total kilowatt hours of energy produced are estimated at 34 mils per kilowatt hour.

Although this rate per kilowatt hour is higher than the current electricity costs in Silverton, it is interesting to view it in relation to other cities around the country. In January, 1978, the cost of electricity in mils per kilowatt hour in other cities was:

Seattle	11.4
Silverton	25.7
Portland	27.2
Denver	34.4
Baltimore	40.0
Washington, D.C.	49.2
Newark	63.0
New York City	94.9

The cost for local energy generation may seem more favorable as the cost of energy increases and Federal programs encourage the development of such facilities.

FINDINGS OF FACT

1. In Oregon, the residential sector accounts for about 20% of the total energy used, the commercial sector about 10%, the industrial sector about 28%, and the transportation sector about 42%.
2. In residential use, water heating represents 65% of the energy demand of the typical non-electrical home. Cooking, refrigeration and lighting fall in order of energy use, comprising an additional 13%. Electricity now accounts for about half of residential energy consumption of Oregon.

3. The State of Oregon has adopted energy legislation aimed at the residential sector. It focuses on conservation through weatherization and encourages the use of alternative energy sources through various incentives.
4. Energy saving in the commercial sector is expected to occur as the increasing cost of energy encourages more efficiency of use, as mandatory and voluntary standards for energy use are set, and as reliance of the commercial users on renewable or more available energy sources increases over time.
5. Cogeneration, or the production of electricity via additional steam from oil and gas burners, does not seem to be viable for any of the existing industries in Silverton.
6. There is a potential for significant energy savings in the implementation of commuter bus and car pooling program between Silverton and Salem.
7. A hydroelectric generating plant in Silver Creek would produce about six million kilowatt hours (kWh) of electricity per year at a cost of about 34 mils per kWh. PGE currently supplies the City of Silverton with over 38 million kWh of electricity per year at an average of 26 mils per kWh.

ALTERNATIVES

Three Approaches

There are three basic approaches that can be applied individually or in combination to increase the conservation of energy and the use of renewable energy resources. These are public information programs, incentive programs and enforcement programs³.

Public Information Programs

Policies of providing information to energy consumers fall into two categories: 1) educating or informing individuals about available opportunities, and 2) persuading individuals to change their behavior.

Although the American value system strongly endorses volunteerism as ethically desirable, reliance on voluntary energy conservation promoted by persuasive appeals is not likely to produce sustained energy savings. These appeals are heard primarily by those who are already in agreement and ignored by those who are opposed or indifferent. A wealth of behavioral research indicates that conduct which involves personal sacrifices is not long maintained in the absence of offsetting rewards. Thus while appeals for voluntary energy conservation are an effective means of reducing energy demand during short-run emergencies including energy shortages, these appeals are not likely to effectively reduce demands in the long run.

Public information programs to provide consumers with reliable and convincing information concerning conservation practices (that are in their own best interest to adopt) are much more likely to produce sustained energy savings than are appeals to volunteerism. One way to inform and educate consumers in energy conservation measures is to initiate a program similar to the county agent system of the U.S. Department of Agriculture. This service would provide unbiased council on energy related matters to residential consumers and businesses. The State of Washington has already embarked on such a program with funding from the U.S. Department of Energy. This concept could easily be adapted to meet the needs of a local city government. While

³The positive and negative aspects of these alternatives and their energy saving impacts were analyzed in depth in "Energy Futures Northwest", the final report of the Northwest Energy Policy Project published in May 1978. Much of the text in this section was drawn from the discussion on pages 73-94 of this report. More information on the report would be available from the Pacific Northwest Regional Commission, 700 East Evergreen Boulevard, Vancouver, Washington 98661.

not always too successful in achieving energy savings, such information and education programs have many desirable attributes with few undesirable side effects. Recent legislation has mandated that investor owned utilities provide the consumer with information on energy conservation and weatherization. This program may be adequate to meet Silverton's needs.

Incentive Programs

Another category of energy conservation policies includes providing monetary and other rewards in the form of tax credits, low-interest loans, subsidies and excise taxes to adopters (and penalties to non-adopters) of various energy conservation measures. Although it is in the economic interest of consumers and businesses to adopt most of the measures without any incentives because they will save more money in lower fuel bills than it will cost them to implement conservation measures; the incentives are designed to add yet more enthusiasm for adoption. In cases where payback periods are very short, additional incentives are not likely to be effective except in the case of providing low-interest loans to individuals who have no access to investment funds (low-income individuals with limited borrowing capacity). In other cases where rewards make conservation either easier or more convenient, or shorten payback periods, incentive policies can be quite effective.

For the most part, such monetary incentives are ones that the City of Silverton would not be in a position to offer. Many monetary incentives have already been made available through state and Federal legislation. The City's role would more appropriately fall into the category of educating Silverton residents about their availability and assisting persons in taking advantage of them. This can perhaps be done in conjunction with enforcement of the building code and specialty codes.

Enforcement Programs

Mandatory regulations could be imposed by a local government to require energy conservation. The estimated savings are significant; however, for the most part these mandatory actions would interfere with existing market forces and reduce individual freedom of choice. While some of these regulations (such as building code revisions) could be enforced by minimal additional policing effort, others (such as requiring recycling of paper, glass, aluminum, and ferrous metals) might be very difficult or costly to enforce.

Potential Conservation Measures Appropriate for Silverton

Residential Sector

The largest short-run payoffs and therefore, the most attractive measures for energy conservation in the residential sector are those relative to weatherization of existing homes.. More detailed information on reducing heat loss in residences is presented in Tables 25 and 26.

In new residential construction, energy could be conserved by : 1) using higher levels of ceiling, wall and floor insulation and installing double-glazed windows and vapor barriers; 2) siting homes to take advantage of natural sunlight; 3) landscaping yards to reduce the energy needed for heating and cooling; 4) clustering housing to make use of common wall construction, reduce travel distances and reduce street construction and maintenance costs; and 5) increasing use of solar space and water heating systems.

Commercial

Measures aimed at reducing energy consumption in Silverton's commercial sector would include: 1) reducing ventilation and lighting levels in commercial buildings; 2) moderating thermostat settings; 3) adding wall and roof insulation and double pane windows to existing buildings; and 4) using heat conserving features in new commercial construction (more insulation, fewer windows, efficient ventilation and lighting systems, etc).

TABLE 26			
REDUCING HEAT LOSS IN RESIDENCES¹			
Conservation Measures	Heat Savings (BTU/Year/Home) Electric Heat	Heat Savings (BTU/Year/Home) Oil or Gas Heat	Cost
Ceiling insulation	57	95	\$ 240
Ceiling plus wall insulation	87	145	588
Ceiling, wall and floor insulation	95	159	948
Complete insulation plus storm windows	104	175	1,298
Complete insulation plus storm windows and storm doors	106	179	1,508

¹Based on a typical 1200 square foot home located west of the Cascades. Savings are in terms of purchased Btu and are therefore higher for oil and gas heated homes, assuming those furnaces are 60% efficient.

Source: "Energy Futures Northwest", Northwest Energy Policy Project Final Report, May 1978, P. 81.

TABLE 27 COST OF SAVING ELECTRICITY BY WEATHERIZING ELECTRICALLY HEATED NORTHWEST HOMES		
Conservation Measures for Homes West of Cascades	Useful Life (Years)	Cost of Saving 1,000 kilowatt-hours of Electricity (1975 Dollars)
Ceiling insulation		
R-0 to R-19	20	1.68
R-11 to R-19	20	13.60
Add Wall insulation		
R-0 to R-13	20	4.68
Add storm windows	20	14.93
Add weatherstripping and caulking	5	16.21
Add floor insulation		
R-0 to R-11	20	16.70
R-0 to R-19	20	17.18
Add storm doors	10	50.72

*Assuming a 10% interest rate.

NOTE: The Oregon State Building and Specialty Code requires R-30 insulation for ceilings, R-11 insulation for walls, and R-19 insulation for floors in new construction.

Source: "Energy Futures Northwest", Northwest Energy Policy Project Final Report, May 1978, p. 80.

Transportation

The primary means for conserving energy in Silverton's transportation sector would be through a reduction in the number and length of automobile trips. This could be accomplished by: 1) implementing a car pool or commuter bus program as the need is shown; 2) providing bike and pedestrian paths between residential and employment centers as funds become available; and 3) encouraging development of mixed-use high density residential/commercial areas.

Public Services

Although the City of Silverton could reduce the energy cost of future public services by adopting a general policy against providing sewer and water services where sewer or water must be pumped, other land use requirements may mandate the pumping of these necessary public services. In gathering data for development of its urban growth boundary, the City mapped all of the areas in which the pumping of sewage or water would be required. In establishing the location of the boundary, consideration was given to pumping requirements of those areas outside the city limits. Several of these areas remain inside the boundary because they were already committed to urban use. The City recognizes that pumping to these areas may be required.

POLICIES

1. The City will increase the energy efficiency of city operations where possible, and encourage organization of car pools and commuter bus programs.
2. The City will encourage the use of solar heating systems, landscaping and common wall construction as a means to reduce energy needs for heating and cooling in new construction.
3. The City will continue to require new construction to meet new State standards for weatherization and energy conservation.
4. "Strip" commercial and residential "sprawl" will be discouraged to reduce the number and length of automobile trips. "Mixed use" areas that combine residential uses with neighborhood commercial activities will be encouraged as an alternate.
5. As need is shown and as funds become available the City will encourage establishment of a bike and pedestrian path system that connects residential areas with employment centers.

IMPLEMENTATION

Many of the energy policies will be implemented through revisions in the zoning, subdivision and PUD ordinances. Height, bulk, and setback requirements will be revised to allow buildings to be sited so that they might take advantage of solar energy as well as natural vegetation for screening. The Uniform Building and Specialty Codes will be adhered to in order to meet new State weatherization standards.

PUBLIC FACILITIES AND SERVICES

GOAL

Provide orderly and efficient public facilities and services to adequately meet the needs of Silverton residents.

OBJECTIVES

1. Ensure the safety of Silverton citizens through adequate Police and fire Protection.
2. Protect the general health of local residents by providing adequate storm sewerage, sanitary sewerage collection, and treatment, solid waste disposal, and water treatment and distribution.
3. Provide an adequate amount of parkland for local use and provide a variety of recreation facilities to meet the needs of all age groups.
4. Provide sufficient land for school facilities.
5. Maintain and improve public facilities and city-owned facilities.

EXISTING CONDITIONS

Figure 8, prepared in 1979, shows the location of Silverton's public facilities and several semipublic facilities. The only change in location since then was the move of the Fire District in 1985. Formerly in the City Hall, a new fire station is located on First Street (OR-214) one block north of D Street.

City Administrative and Service Center

The City Hall is located in a cluster of public buildings on South Water Street along Silver Creek. The City Police Station is next to City Hall and the City Library is next to the Police Station.

The present City Hall was built in 1924. It is in need of major repair or replacement.

The City Police Department is housed in a remodeled flour mill office. It is in need of major repair or replacement. Jail facilities are provided in Salem by Marion County. The Marion County Sheriff's Department has a sub-station on Front Street in Silverton to provide service to the unincorporated areas around Silverton, Mt. Angel, and Scotts Mills.

The Silverton Country Museum south of the Library, and the Silverton Armory, located across from the museum, complete the cluster of public buildings on South Water Street.

Library

The City Library building includes approximately 4,000 square feet. The collection contains about 34,000 volumes.

Fire and Emergency Medical Services

The Silverton Fire District provides fire and emergency medical services to the City of Silverton and the surrounding area. The fire department includes ten full-time staff (including the chief and 60 volunteers. Some 19 department members are also emergency medical technicians (EMTs). The headquarters station is at 806 N. First street. Other fire stations are at 80 McClaine Street, 13404 Riches Road,S.E., and 16436 N. Abiqua Road, N.E. The Public Safety Dispatch Center and 911 answering point is in the Police Department at 400 S. Water Street.

Hospital Facilities

Hospital facilities are provided to the area by the 38-bed Silverton Hospital at Phelps and Welch Streets. The hospital is operated by a non-profit corporation.

School Facilities

Silverton has four schools within the city limits. School District 4C includes grades K through 8 in three schools and Silverton Union High School District 7J includes grades 9 through 12. District 7J receives students from District 4C and eight other elementary districts. District 4C extends beyond the city limits and UGB and even includes an enclave near Silver Falls State Park.

The oldest school in the system is Eugene Field School, which was built in 1930. The school site offers little room for expansion and play space is minimal. The City of Silverton and School District 4C funded a feasibility study for reuse of the Eugene Field School that was completed in October 1985 by Richard Leonard, Architecture & Planning and Tucson Myers & Associates. The study found that it would be possible to reuse the school building as a community center, although senior housing does not appear to be a viable option. Due to financial constraints no decision has yet been made to replace Eugene Field School. Any relocation to a new elementary school (or perhaps two smaller schools) and reuse of the old building will be heavily dependent on the availability of funding for both projects.

The capacity of the Eugene Field School is approximately 420. The present enrollment is 482 in grades K through 3. The capacity of Robert Frost School is approximately 450, and the present enrollment is 413 in grades 3 through 6. The capacity of Mark Twain School (grades 7 and 8) is approximately 400, while the present enrollment is 229. The capacity of the high school (grades 9 through 12) is about 1,100, and the present enrollment is 732.

It is expected, if current trends continue, that during the next 20 years a new elementary school will have to be constructed in Silverton. School District 4C owns a 10-acre site in the Steelhammer Road area for the purpose of locating a new school at the Steelhammer site. However, additional facility requirements could also be met on other land already owned by the school district. Use of school property for additional school buildings in this way would eliminate some recreational resources now provided at these school sites. This factor was taken into account in the projection of future park and recreation needs.

School Recreation Facilities

Several park and recreation facilities are owned and operated by the schools. About 2 acres of playground space is available north of the Eugene Field School. The fenced, cleared area is used for organized games, softball diamonds, and soccer fields. Approximately 8 acres of the Mark Twain school site is devoted to playfield use that includes a baseball and softball diamond, a blacktopped play area, and a grass track. An additional 5 acres is available as a community park with open space for passive and semiactive recreation.

The Robert Frost School site includes about 8 acres of playfield with a covered play area. Over 25 acres is available as a community park resource that includes a nature trail, an arboretum, and a 20-station physical fitness course. Twenty-one acres at the high school are developed as play fields. There are facilities for football (with

stadium seating), track and field, baseball, softball, and tennis.

Parks and Recreation Facilities

Residents of Silverton have a variety of parks and recreation facilities available. Silver Falls State Park, located about 10 miles south of Silverton, is an important recreational resource for Silverton as well as a feature that attracts many people from outside the immediate area. There are also a number of city parks and school facilities within the city as listed in Table 28 and discussed below.

TABLE 28 SILVERTON PARKS	
Facility Type	Acres
Playgrounds	
Coolidge-McClaine Park	.3
Lincoln Street	.1
Eugene Field School	2.0
Robert Frost School	2.0
Mark Twain School	<u>1.0</u>
Subtotal	4.7
Playfields	
Robert Frost School	6.0
Mark Twain School	7.0
High School	<u>21.0</u>
Subtotal	34.0
Community Parks	
Coolidge-McClaine Park	8.3
Olde Mill Park	7.5
Mark Twain School	5.0
Robert Frost School	<u>25.0</u>
Subtotal	45.8
TOTAL PARK ACRES	84.5

Sources: City of Silverton and School Districts 4C and 7J, 1978 and 1985

Within Silverton a total of 38.7 acres is available for playground and playfield use and 45.8 acres for community park use between the city and school district facilities listed in Table 28. In addition, St. Paul's Catholic Church permits use of its 4-acre field for Little League baseball.

City Parks

The City owns three parks, Coolidge-McClaine Park and Olde Mill Park are both located south of the central business district on Silver Creek. A small "mini" park is on Lincoln Street.

Coolidge-McClaine Park includes 8.6 acres on the west bank of Silver Creek. This wooded park serves mostly for passive recreation. Within the park there is also a small children's play area of 0.3 acres that contains swings, a slide, a merry-go-round and spring-mounted animal rides. The rest of the park is provided with picnic tables, cooking facilities with hot and cold water, rest room facilities, a drinking fountain, a wading pool, swings, a large climb-and-slide toy, and horseshoe pits, There are street lamps located in the park area to improve safety.

Olde Mill City Park is located next to other city-owned property containing the Silverton Country Museum, City Hall, Library, Police Station and city parking lots. The park area covers approximately 7.5 acres and includes the City's swimming pool. A foot bridge over Silver Creek connects the Olde Mill Park with Coolidge-McClaine Park. Bikeways and pedestrian walkways have been provided in both parks.

Additional parks are expected to be developed on city-owned land along the southeast city limits, on the creek at Peach Street, and adjacent to the waste water treatment plant. Parkland to serve the Steelhammer area will have to be acquired during the planning period. Land for specific active recreation facilities (ball fields, tracks, and so on) is included in the acres projected for school use, although such facilities would also be available for use by the entire community.

Solid Waste Disposal

In recent years the solid waste from the City of Silverton has been disposed of at the Woodburn sanitary landfill. That is about to change with the 1986 completion of the garbage-burning plant at Brooks. The garbage burner and the remaining landfills in the area are under the jurisdiction of Marion County. The city franchises solid waste disposal in the city limits to United Disposal Services. Curb-side recycling began in Silverton before July 1, 1986.

DETAILED PUBLIC FACILITIES INVENTORY

The City of Silverton's Public Facility Inventory was compiled in May 1985 by K & D Engineering, Inc. The Public Facility Inventory is both a reference document for the city and a support document for the Comprehensive Plan. The inventory contains tables of information including capacity and condition on four major municipal utilities; sanitary sewer system, water system, street system, and storm drains. A set of maps is part of the inventory.

The City of Silverton's needs for major new public facilities are listed in Table 29, Recommend Public Facility Improvements, which is at the end of this section. Table 29 is keyed to Figure 10, Public Facility Planning Areas. Both the table and map show the areas that will need to be served within the Silverton UGB when projected growth occurs.

Sanitary Sewer System

Treatment Facilities

At the time of acknowledgement, the City of Silverton's sewage treatment system was performing marginally and nearing the end of its design life.

The City of Silverton's waste water treatment plant was upgraded in 1984. The facility now has a design population of 10,000. The major biological facilities were added to improve overall treatment. The plant uses the trickling filter solids contact process to treat municipal waste water. The average dry weather plant flow is 1 million gallons per day. The peak hydraulic capacity is 4-1/2 million gallons per day.

The new waste water treatment plant is performing well and meeting the effluent criteria for discharge to Silver Creek. The Silverton plant is permitted to discharge effluent that does not exceed a biological oxygen demand of 10/10 nor a suspended solid level of 10/10 during the summer months. The minimum stream flow on Silver Creek was set at 23 cubic feet per second (cfs) in the summer. This flow will protect water quality by dispersing the maximum summer effluent flow of 2.3 cfs from the Silverton sewage treatment plant.

Silverton Sewer Collection System

The sanitary sewer collection system has five lift stations for areas not serviceable by gravity flow. Four were constructed in 1983 as part of the U.S. EPA funded waste water treatment and collection system improvements. The fifth lift station had larger pumps installed in 1983 for greater capacity. Capacities of the lift stations should generally be adequate through the current 20-year planning period. Additional data on each of the lift stations is available in the waste water collection system operations and maintenance manual. The lift stations and the characteristics of the areas they serve that could affect future capacity are discussed below.

The Silver Street lift station serves the Silver Street and Alder Street residential area. The station discharges into the 12-inch sewer line along Alder Street just before an 8-inch siphon crossing of Silver Creek. The lift station operates well within design capacity. It is not likely to require a capacity increase during the 20-year planning period due to its restricted service area.

The Grant Street lift station is located between Florida Drive and Western Avenue. The current service area is Florida Drive west of Montevista, and Montevista Street to Grant Street north of Florida Drive. The lift station discharges into a gravity line on Grant Street one block north of the lift station. The Grant Street Lift Station may be able to serve a small area of undeveloped land in addition to its existing service area. Capacity is considered adequate throughout the 20-year planning period.

The lift station located at the northwest corner of the James Street and Florida Drive intersection serves a small residential area along Florida Drive west of Montevista Street. Some development east of James Street may be connected to this lift station. The capacity should be adequate throughout the 20-year planning period.

The West Main lift station is located on West Main Street, approximately 150 feet west of McClaine Street. It serves most of west Silverton south of "C" Street and west of Silver Creek. The lift station discharges directly to the Water Street trunk line at Main Street. The west Silverton area has a high rate of infiltration and inflow, and efforts to reduce the infiltration and inflow may be necessary as the area develops. Otherwise, the lift station is adequate for the planning period.

The lift station at Second and Jefferson Streets serves the residential neighborhoods from North Second to Mill Street north of Whittier. The station discharges directly to the 15-inch trunk line on Second Street. Additional area will be served by the Second and Jefferson lift station as development occurs during the planning period. As in west Silverton, some infiltration and inflow reduction work may be needed in order to maintain adequate capacity to handle waste water flows.

Water System

At the time of acknowledgement several areas in Silverton were experiencing problems due to deficiencies in the water system. The water treatment plant was upgraded in 1983, the city's main supply line was replaced, and a 2 million gallon reservoir was constructed.

Sources of Water

The domestic water supply for Silverton is from Abiqua Creek and Silver Creek. The City of Silverton has water rights for up to 10 cubic feet per second (cfs) or 6.46 million gallons per day (mgd) of water from Abiqua Creek. The City of Silverton also has water rights to use 5 cfs from Silver Creek and storage rights for 1,300 acre-feet on Silver Creek. Actual use averages between 1.2 and 1.5 cfs from Abiqua Creek during most of the year. The

maximum summer use from Abiqua Creek has been about 3 cfs. Silver Creek is used as a backup to the Abiqua Creek supply, and to date the maximum summer use from Silver Creek has been 0.8 cfs. The city's water rights should be more than adequate for the 20-year planning period, although there is a need to upgrade the Abiqua supply line with a larger pipe.

Water Treatment Facility

The city's water treatment facility is located on east hill at the corner of East Main and Ames Streets. The facility consists of two rapid sand filtration plants. The original plant was built in 1958 and an expansion was completed in 1983. With the latest expansion, a total plant capacity of 5.5 million gallons per day is available. This should be an adequate supply for the 20 year planning period. This assumes that no large users of industrial water supplies will locate in Silverton, and that current water treatment standards remain in force.

Water Storage System

The City of Silverton currently has three water storage reservoirs with a capacity of 3.25 million gallons. Two of the storage reservoirs (1.25 million gallons capacity) are at the water treatment A high-level storage reservoir with 2.0 million gallons capacity is located southeast of Silverton at an elevation of approximately 590 feet.

Additional storage capacity of up to 3.5 million gallons will be required based on the projected population of 9,900 by the year 2005. This future requirement can be met with a new 1.5 million gallon reservoir in the next 5 to 10 years and another 2.0 million-gallon reservoir in 10 to 20 years. Possible locations are at the water treatment plant and in west Silverton. A major user of water for consumptive purposes or a use with needs for high fire flows could require greater storage.

Water Service Levels and Distribution System

Silverton currently distributes water to three pressure zones. Most of the town, including the downtown and the northwest and north areas, are in the low level service area from elevations of approximately 200 to 315 feet. The mid-level service area at 315 to 430 feet is between Reserve Street and Steelhammer Road on the east and the Eureka, Keene, Ross and Weiby neighborhoods in west Silverton. There are only a few services on the high level system from 430 to 530 feet.

Storm Drain System

Preliminary work for a storm drain master plan was begun in July, 1983. The work was continued as part of the Public Facility Inventory in 1985. Future storm drain line sizes and locations were evaluated for the drainage basins shown in Figure 9, Storm Sewer Drainage Basins. The map shows the areas that do not drain directly to Silver Creek, the main drainage through the city, and corresponds to a large-scale (1" = 300') map kept at Silverton City Hall. A 1"=600' scale map of potential future storm drains is included in the Public Facilities Inventory.

The City of Silverton's storm drainage basin planning is based upon the rational method as described in the Oregon State Highway Hydraulics Manual. The City of Silverton intends the storm drain planning map to serve as a general guide. The individual projects should be designed to adequately drain a 5-year flood event (this is the flood that has one chance in twenty of occurring in any given year). The projects listed in Table 29 assume that no detention basins are used, and the large projects listed are those with 24" pipe or larger.

Street System

The street system in the City of Silverton was evaluated in the Public Facility Inventory. The inventory contains information on all Silverton streets by functional classification (arterial, collector, central business district, or local), type of surfacing material (asphaltic concrete, Portland cement concrete, penetration macadam, oilmat, or unimproved), condition from poor to excellent, width of pavement, adjacent activity, sight distance, grade and traffic conditions.

Other information on streets is contained in the Transportation element, on the Federal Aid Urban (FAU) map for the City of Silverton, and in recent reports on the FAU streets in Silverton. The street projects listed in Table 29 are those significant projects on arterial and collectors that are anticipated to be needed during the 20 year planning period. Most of these projects are part of the FAU system although some are in city or county as well as state jurisdiction. The priority "A" projects or those needed in the next 5 years include projects that the City of Silverton has proposed for the State Highway Division's next 6 year Highway Improvement Program. Local streets, which the City would rely upon developers to build, are not included in the projects listed in Table 29.

Bridges

There are three public highway bridges and four private bridges in Silverton. The Main Street and James Avenue bridges are city-owned. The "C" Street bridge, built in 1960, is under Marion County jurisdiction. A pedestrian bridge connecting Olde Mill Park with Coolidge-McClaine Park, was replaced in 1979. All of the bridges cross Silver Creek.

The Main Street bridge is a concrete structure. The 36 foot width carries three traffic lanes and there are also 5 foot sidewalks on either side. The Main Street bridge was constructed in 1974. It had a rating of 84.2 when inspected on September 27, 1984.

The James Avenue bridge is a steel structure that carries two lanes of traffic. The bridge was constructed in 1929 and renovated in 1949. The bridge currently has a sufficiency rating of 69.4, and an estimated remaining life of 30 years according to the Silverton Public Facility Inventory.

The Silverton Public Facility Inventory states: "Silverton's existing highway bridges appear sufficient to carry anticipated traffic through the 20 year planning period considered for this report. It is not likely that new bridge construction will be required unless significant development on the west bank of Silver Creek takes place south of McClaine and Coolidge Park. This area is currently served by a few private bridges which are not likely to be suitable for public ownership."

Future Service Areas

The map in Figure 10 shows areas within the city and urban growth boundary that will need to have public facilities and services extended or upgraded as growth occurs. These areas are generally without significant public facilities now, and the extension of services will need to be coordinated as development proposals are evaluated in order to provide adequate levels of urban services. The type of anticipated development is briefly described for each area to provide a better understanding of the needs and priorities for the projects listed in Table 29.

West Silverton

This area (service area 7 in Figure 10 and Table 29) is located south of Silver Creek and west of Main Street. There has been landowner interest in the formation of a very large Local Improvement District (LID). The LID would provide the means to develop or redevelop the area for a combination of industrial, commercial, residential, and public uses. The estimated costs to serve this area are higher than other areas of similar size in the UGB

Public Facilities and Services

because of the more intensive uses and greater public facility needs (such as larger lines for fire flows) for this area.

Northwest Silverton

This area includes service areas 6 and 10. It is located north of Silver Creek and west of the railroad tracks, and is designated primarily for residential use.

North Silverton

This area (service area 2, 8, and 10) is mostly vacant land on the north side of the UGB. Service area 2 is the Countryside Mobile Home Park approved in 1985. Service area 8 is entirely within the current city limits. Much of area 12 has been designated for industrial use. The need for arterial and collector streets and water and sewer line extensions will need to be coordinated as land parcels are divided and developed.

East Silverton

This area includes service areas 1, 3, and 11. Area 1, the Steelhammer area has been in need of sewer service for several years, and this project is first on the city's priority list. The City in 1985 submitted an application for the fourth time (after coming close three times) to the Oregon Intergovernmental Relations Division for a grant from the Community Development Block Grant program. The completion of this project would eliminate the last area without sewers in the city with health hazard conditions due to failing septic systems. The Ames Street area (#3) is also designated and ready to construct when funding is available. Area 11 would be developed later, also as a residential area.

Southeast Silverton

This area located south of Evans Valley Road includes service areas 13 and 14. It would primarily be a low density residential area. Most of service area 14 is designated as an "urban reserve", meaning that it has a low priority for getting urban facilities and services.

South Silverton

This area is located west of Silver Creek and south of West Main Street, and includes service areas 4, 5 and 9. Areas 4 and 5 are mostly built up and the rest of this sector would see more residential development. Areas 4 and 5 are in need of major line replacement projects.

Possible Funding Sources

There are a variety of possible funding sources for public facilities in the City of Silverton. Among the alternative financing methods to pay for public facilities are system development charges, construction of streets and other improvements by developers, ad valorem taxes on real property, local improvement districts, utility fees, grants, or loans from the state or federal governments, the city share of state taxes on alcohol, tobacco, and motor fuel, and bonding. The availability and appropriateness of each of these funding sources varies or each type of public facility.

The city operates water and sanitary sewer utilities. Utility fees are the city's main source of revenue to maintain and improve the water supply and sanitary sewer systems. Utility fees and property taxes are the revenue sources available to retire the city's bonded indebtedness and Farmer's Home Administration Loan for the sewer and water systems. The City has found itself having to apply for grants to fund sewer line extensions due to the difficulties of funding these actions through the property tax or use charges. The City of Silverton does not have either a street utility nor a storm drainage utility.

The sources of financing for street construction and maintenance in the City are limited. The City relies upon

developers to construct new roads in subdivisions. Local improvement districts (LID's) can also be used for street projects. The City uses its share of fuel tax revenues for street maintenance, and has relied to a large extent on Marion County and the State Highway Division for assistance with construction and maintenance of major streets. The City has participated in the Federal Aid Urban program since 1979.

Recommended Public Facility Improvements

Table 29 lists recommended public facility improvements for sanitary sewers, water supply, storm drainage, and street projects. The projects listed are the significant projects needed to serve the area within the Silverton Urban Growth Boundary. The service areas listed for sewer, water, and storm drain projects are those shown on Figure 10. The street projects are listed by street segment.

The projects listed in Table 29 are assigned a priority which corresponds to when the project would be needed if projected growth is realized. Priority A means the short term or the first five years of the planning period. Priorities B, C, and D are for each succeeding 5-year period. The projects listed are subject to change as various development proposals and construction projects occur, and at future plan updates.

The cost estimates in Table 29 are based upon recent City of Silverton experience with similar projects. Cost allocation of utility lines was calculated based on the 1"=300' public facility plan maps prepared by Kraus and Dalke Consulting Engineers through a Comprehensive Plan Public Facility Development Grant from DLCD. The significant projects listed include: minimum water line sizes of 6 inches, minimum sanitary sewer line sizes of 8 inches, minimum storm drainage line sizes of 24 inches, and arterial or collector streets. For each area the total project length and subsequent cost was calculated. No individual building lines or minor system lines were added. The lines calculated are those necessary to make water or sewer service available to structures that could be sited throughout the service area. Individual line improvements not within the priority areas are generally replacement projects within city limits. The total line replacement cost is shown to arrive at total system improvement costs.

Summary

The City of Silverton has made substantial progress in planning for and providing public facilities. The upgrading of the water treatment plant in 1983 and of the sewage treatment plant in 1984 have eliminated a major constraint to the community's ability to attract industry and serve future growth. Sewers were built in several health hazard areas in recent years and the City is pursuing means to serve the last such area. Despite limited funding, the City continues to explore means to improve the street system, install storm sewers, and investigate options to improve other public facilities.

TABLE 29
SILVERTON RECOMMENDED PUBLIC FACILITY IMPROVEMENTS¹, 1986
A. Sanitary Sewer Projects

	Service Area Project ²	Proposed Priority ³	Estimated Cost ⁴
1.	Steel hammer & Wall	A	\$149,000
2.	Countryside M.H.P.	A	\$49,000
3.	Ames Area	B	\$141,000
4.	Coolidge Street	B	\$22,000
5.	Jerome & West Bank	C	\$101,000
6.	Pine Street	C	\$98,000
7.	West Silverton	B	\$383,000
8.	N. First & Jefferson	B	\$32,000
9.	Eureka Area	C	\$43,000
10.	Western-James Area	C	\$126,000
11.	East Silverton	C	\$254,000
12.	North Silverton	D	\$302,000
13.	E.View Lane/Rock St. Area	D	\$85,000
14.	S.E. Silverton	D	\$161,000
		Subtotal	\$1,946,000
	Summary of Individual Projects		\$208,000
	TOTAL ESTIMATED COSTS (Sewer Lines)		\$2,154,000

¹Does not include maintenance or small individual projects.

²These areas correspond to those shown on Figure 10.

³Priority A means first 5 years (short term); Priority B means next 5 years; Priority C means the third 5 years; and Priority D is the fourth 5-year period in the 20-year planning period. Priorities are subject to change based on future plan updates, available funding, and specific development proposals. As per OAR 660-11.025 sub 3, the priorities listed herein are not a land use decision and appeals to LUBA based upon priority listings are prohibited.

⁴Estimated construction cost (rounded to nearest \$1,000) as of January 1986 based on recent City of Silverton experience with similar projects.

Source: City of Silverton, January 1986.

TABLE 29
SILVERTON RECOMMENDED PUBLIC FACILITY IMPROVEMENT¹, 1986
B. Water System Projects

	Service Area/Project ²	Proposed Priority ³	Estimated Cost ⁴
1.	Steelhammer & Wall	A	\$14,000
2.	Countryside M.H.P.	A	\$62,000
3.	Ames Area	B	\$11,000
4.	Coolidge Street	B	\$22,000
5.	Jerome & West Bank	B	\$20,000
6.	Pine Street	C	\$84,000
7.	West Silverton	B	\$249,000
8.	N. First & Jefferson	B	\$31,000
9.	Eureka Area	C	\$162,000
10.	Western-James Area	C	\$105,000
11.	East Silverton	C	\$237,000
12.	North Silverton	D	\$348,000
13.	E.View Lane/Rock St. Area	D	Area served by existing water main
14.	S.E. Silverton	D	<u>\$210,000</u>
		Subtotal	\$1,555,000
	1.5 Million Gallon Storage Reservoir		260,000
	2.0 Million Gallon Storage Reservoir		350,000
	Individual Line Replacement Projects		<u>977,000</u>
	TOTAL ESTIMATED COSTS (Water System)		\$ 3,142,000

¹Does not include maintenance or small individual projects.

²These areas correspond to those shown on Figure 10.

³Priority A means first 5 years (short term); Priority B means next 5 years; Priority C means the third 5 years; and Priority D is the fourth 5-year period in the 20-year planning period. Priorities are subject to change based on future plan updates, available funding, and specific development proposals. As per OAR 660-11.025 sub 3, the priorities listed herein are not a land use decision and appeals to LUBA based upon priority listings are prohibited.

⁴Estimated construction cost (rounded to nearest \$1,000) as of January 1986 based on recent City of Silverton experience with similar projects.

Source: City of Silverton, January 1986.

TABLE 29
SILVERTON RECOMMENDED PUBLIC FACILITY IMPROVEMENTS¹, 1986
C. Storm Sewer Projects

	Service Area/Project ²	Proposed Priority ³	Estimated Cost ⁴
1.	Steelhammer & Wall	B	\$91,000
2.	Countryside M.H.P.	A	Served by facilities in adjacent area
3.	Ames Area	B	Served by facilities in adjacent area
4.	Coolidge Street	B	\$34,000
5.	Jerome & West Bank	B	\$10,000
6.	Pine Street	C	\$64,000
7.	West Silverton	B	\$416,000
8.	N. First & Jefferson	B	\$18,000
9.	Eureka Area	C	\$130,000
10.	Western-James Area	C	\$75,000
13.	East Silverton	C	\$373,000
12.	North Silverton	D	\$235,000
13.	E.View Lane/Rock St. Area	D	\$10,000
14.	S.E. Silverton	D	<u>\$317,000</u>
		Subtotal	\$1,773,000
	Summary of Individual Projects		<u>\$701,000</u>
	TOTAL ESTIMATED COSTS (Storm Sewers)		\$2,474,000

¹Does not include maintenance or small individual projects.

²These areas correspond to those shown on Figure 10.

³Priority A means first 5 years (short term); Priority B means next 5 years; Priority C means the third 5 years; and Priority D is the fourth 5-year period in the 20-year planning period. Priorities are subject to change based on future plan updates, available funding, and specific development proposals. As per OAR 660-11.025 sub 3, the priorities listed herein are not a land use decision and appeals to LUBA based upon priority listings are prohibited.

⁴Estimated construction cost (rounded to nearest \$1,000) as of January 1986 based on recent City of Silverton experience with similar projects.

Source: City of Silverton, January 1986.

TABLE 29
SILVERTON RECOMMENDED PUBLIC FACILITY IMPROVEMENTS¹, 1986
D. Street Projects

Project Location ²	Proposed Priority ³	Estimated Cost ⁴
1. Intersection of C and Front Street	A	\$250,000
2. Widen and Realign OR-213; Church St. to UGB	A	\$390,000
3. N. Second Street from B Street to Oak Street	A	\$151,000
4. West Main Street from Eureka to Westfield	A	\$191,000
5. East Main Street from Third Street to Rock Street	B	\$96,000
6. James Street from Florida to Water Street	B	\$156,000
7. Steelhammer and Evans Valley from Oak to UGB	B	\$380,000
8. Hobart from Monitor Rd. to Hwy 214	B	\$582,000
9. N. Second Street from Whittier to B Street	B	\$344,000
10. Eureka Ave. from Main Street to the City Limits	B	\$195,000
11. N. Water from James Street to C Street	B	\$124,000
12. East Main Street from Rock Street to Steelhammer	C	\$180,000
13. Ike Mooney Rd. from S. Water Street to UGB	C	\$347,000
14. Jefferson Street from James to Mill Street	C	\$280,000
15. McClaine Street from W. Main to Trix Street	C	138,000
16. Pine Street from Grant to Airport Road	C	\$410,000
17. N. Second Street from Hobart Rd. to Whittier	C	\$300,000
18. James Street from Jefferson to Florida Drive	D	\$370,000
19. James Street from N. Water Street to C Street	D	\$106,000
20. Mill Street from Oak Street to Lincoln Street	D	\$515,000
21. West Main Street from McClaine to Eureka Ave.	D	\$220,000
22. N. Water Street from C Street to E. Main Street	D	\$330,000
23. McClaine Street from C Street to Trix Street	D	<u>\$192,000</u>
TOTAL ESTIMATED COSTS (Streets)		<u>\$6,397,000</u>

¹Does not include maintenance or small individual projects.

²These areas correspond to those shown on Figure 10.

³Priority A means first 5 years (short term); Priority B means next 5 years; Priority C means the third 5 years; and Priority D is the fourth 5-year period in the 20-year planning period. Priorities are subject to change based on future plan updates, available funding, and specific development proposals. As per OAR 660-11.025 sub 3, the priorities listed herein are not a land use decision and appeals to LUBA based upon priority listings are prohibited.

⁴Estimated construction cost (rounded to nearest \$1,000) as of January 1986 based on recent City of Silverton experience with similar projects.

Source: City of Silverton, January 1986.

TABLE 29
SILVERTON RECOMMENDED PUBLIC FACILITY IMPROVEMENTS¹, 1986
Summary

Projects	Estimated Cost ⁴
A. Sanitary Sewer Projects	\$2,154,000
B. Water System Projects	\$3,142,000
C. Storm Sewer Projects	\$2,474,000
D. Street Projects	<u>\$6,397,000</u>
OVERALL TOTAL (Sewer, Water, Storm Sewers, Streets)	\$14,167,000

¹Does not include maintenance or small individual projects.

⁴Estimated construction cost (rounded to nearest \$1,000) as of January 1986 based on recent City of Silverton experience with similar projects.

Source: City of Silverton, January 1986.

FINDINGS OF FACT

1. The present City Hall structure was built in 1924 and is in need of major repair or replacement.
2. The Police Department, housed in a remodelled flour mill and the City Library are located adjacent to the City Hall. The Police building is in need of major repair or replacement.
3. The Silverton Fire District provides fire suppression and emergency medical services to the City of Silverton and the surrounding area.
4. The Silverton Hospital is operated by a non-profit corporation.
5. The Silverton school districts have sufficient land to meet future needs for new classrooms over the next 20 years. However, development of some school district owned land may require development of parkland to replace the parks adjacent to schools.
6. The City of Silverton and School District 4C have cooperated in studying alternatives for the reuse of the Eugene Field Elementary school.
7. Parks and recreation facilities within Silverton include a total of 38.7 acres for playground and playfield use and 45.8 acres for community park use.
8. Solid waste disposal is done by a city franchiser and coordinated with Marion County and the Department of Environmental Quality.
9. The City of Silverton Public Facility Inventory compiled in 1985 contains detailed information on the sanitary sewer system, water supply system, storm drainage, and the street system.
10. The sanitary sewer system now operates well within the requirements of its discharge permit, and the treatment plant has adequate capacity for the planning period.

11. The City of Silverton has water rights more than adequate to accommodate the anticipated growth of the next 20 years. Additional water storage will be needed to accommodate anticipated growth.
12. Storm sewer drainage basins have been established in the Public facilities Inventory as a general guide to locating new and replacement storm drains.
13. Street construction and maintenance responsibility is shared between the City of Silverton, Marion County, and the State Highway Division. Silverton is in the Federal Aid Urban system.
14. Bridges in Silverton appear to be adequate for the planning Period.
15. Preliminary engineering for future service areas in the Silverton Urban Growth Boundary has established the estimated cost of providing the significant public facilities needed to support urban growth.
16. Possible funding sources for public facilities in Silverton include: system development charges, provision by developers, property taxes, utility fees, grants, loans, revenue sharing from alcohol, fuel, and tobacco taxes, and bonding.
17. Each of the implementation items discussed in the 1979 Silverton Comprehensive plan were completed within the past 5 years.

POLICIES

1. The City will investigate the repair or replacement of City Hall as well as the replacement or enlargement of the Police department.
2. The City of Silverton shall be the provider of these urban services within the Silverton Urban Growth Boundary: 1) general administrative services; 2) sanitary sewer system; 3) municipal water supply; and 4) storm drainage.
3. The City of Silverton shall provide police services in cooperation with the Marion County Sheriff and the Oregon State Police.
4. The Silverton Fire District shall be the provider of fire service within the City of Silverton and the Silverton urban growth area.
5. The City of Silverton shall continue to provide parks and recreation facilities in cooperation with school districts 4C and 7J. The City shall consider the needs of the handicapped and those of limited mobility in its design of public facilities, especially those for recreation.
6. The City of Silverton shall coordinate with School District 4C on the options for providing new elementary school classrooms, and on the need to replace the Eugene Field School.
7. The Street System (including bridges) shall be provided jointly by the City of Silverton, Marion County, and the Oregon State Highway Division as determined by those parts of the street system where each entity has maintenance responsibility. Local streets may also be provided by private entities.
8. The City of Silverton shall coordinate with Marion County and the Department of Environmental Quality on solid waste management issues.
9. The City of Silverton shall maintain and expand the sanitary sewer collection and treatment system with the assistance of the Department of Environmental Quality.

10. The City of Silverton shall maintain and improve the municipal water system through the addition of needed storage and distribution facilities.
11. Storm drains shall be coordinated with the location of streets and water and sewer lines.
12. It shall be the responsibility of subdivider's to provide new local streets.
13. The City of Silverton shall consider a Capital Improvement Program in order to improve the implementation of the Comprehensive Plan.

IMPLEMENTATION

Ongoing Actions

1. The City of Silverton shall coordinate with state and federal agencies to help obtain funding to provide significant public facilities.
2. The Planning Commission and City Council evaluate the adequacy of public facilities in the review of land use actions.
3. City staff cooperate with other units of local government (fire district, school districts, Marion County, Mid-Willamette Valley COG) in order to maintain and improve the public facilities available in Silverton.

Future Actions

4. The City of Silverton shall consider the provision of public facilities and services when other elements of the Comprehensive Plan and implementing ordinances are reviewed and updated in the future.
5. The City of Silverton shall review and update the Public Facilities element at least as often as every periodic review, and every 3 years if possible.

FIGURE 8

PUBLIC FACILITIES

- URBAN GROWTH BOUNDARY
- CITY LIMITS

MINI PARK

EUGENE FIELD ELEM. SCHOOL

MARK TWAIN ELEM. SCHOOL

SILVERTON HIGH SCHOOL

FIRE STATION

SEWAGE TREATMENT PLANT

SILVERTON ART CENTER

SILVERTON PIONEER CEMETERY

ROBERT FROST ELEM. SCHOOL

LIBRARY

SILVERTON HOSPITAL

MUSEUM

ARMORY

BATH HOUSE & OLD MILL PARK SWIMMING POOL

COOLIDGE & McCLAIN PARK

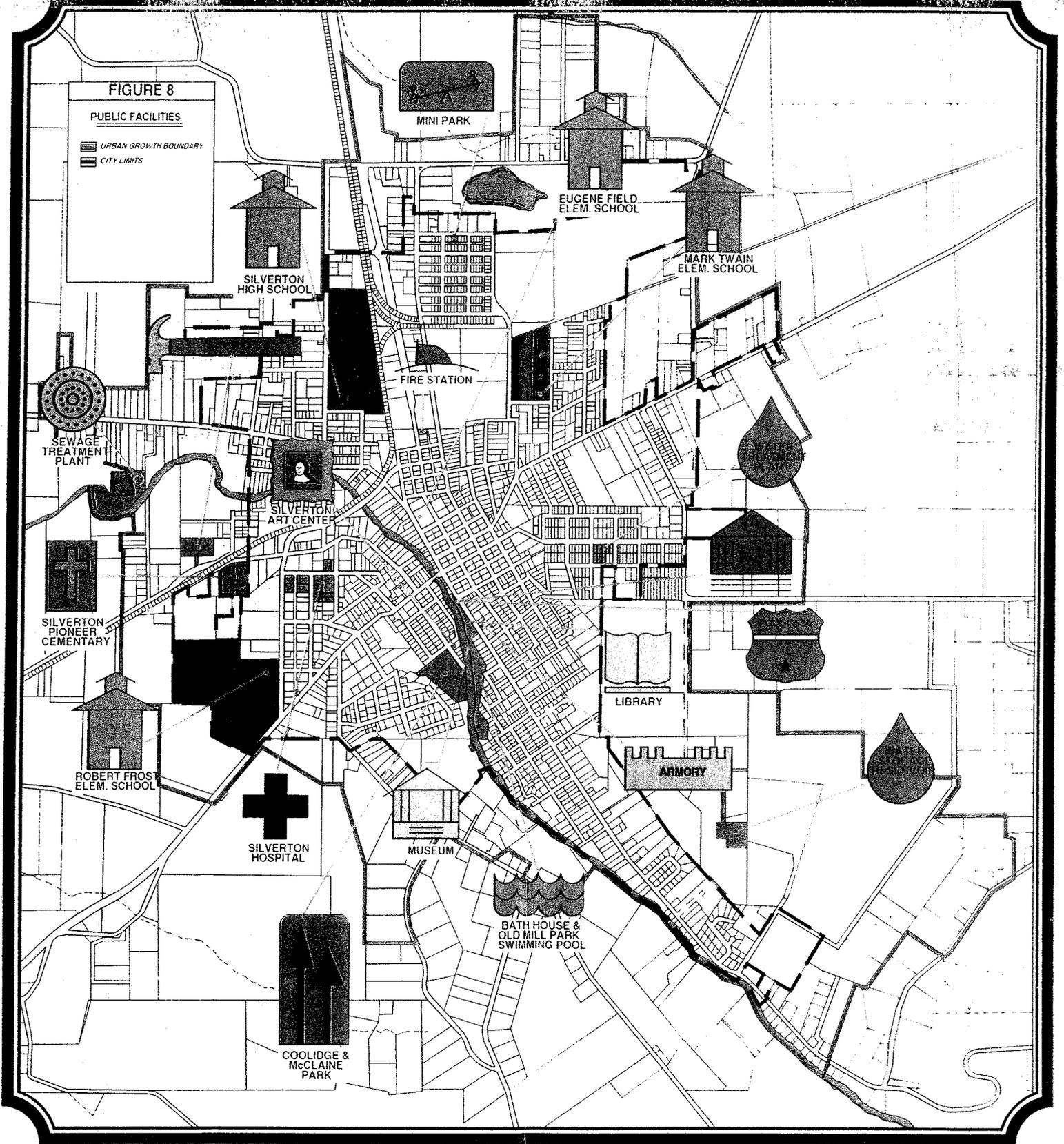


FIGURE 9
STORM SEWER
DRAINAGE BASINS

URBAN GROWTH BOUNDARY
CITY LIMITS
10 DRAINAGE BASIN NUMBER

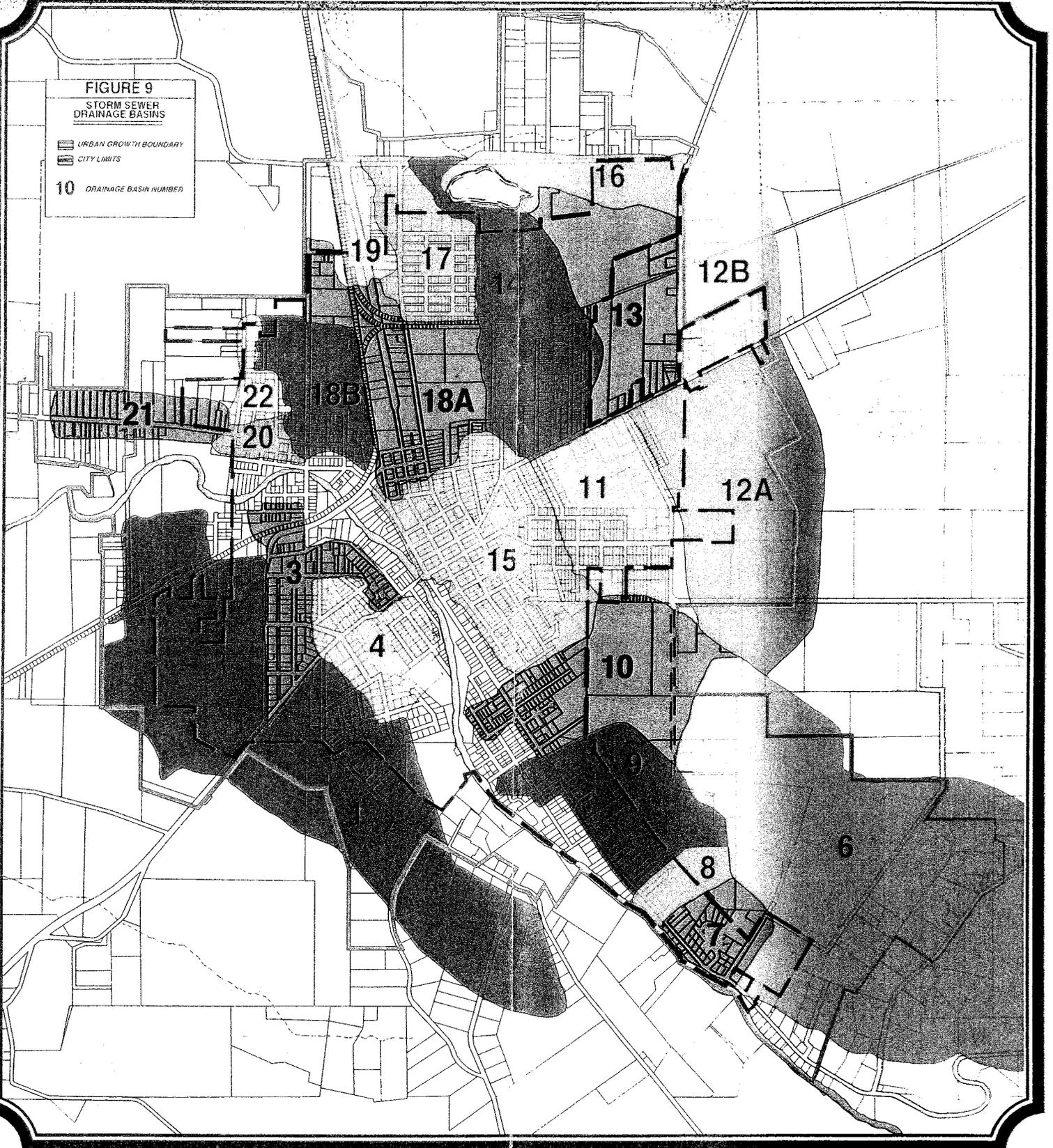


FIGURE 10

**PUBLIC FACILITY
PLANNING AREAS**

 URBAN GROWTH BOUNDARY

 CITY LIMITS

14 PLANNING AREA NUMBER

