

## **INTRODUCTION**

The City of Harrisburg's Comprehensive Plan was acknowledged by the Oregon Land Conservation and Development Commission (LCDC) on January 12, 2000. The plan serves as a working policy guide for decisions concerning the operation and development of the City, and brings the City into compliance with LCDC's Statewide Planning Goals and Guidelines. This document, Volume I of the Comprehensive Plan, provides key information that was considered in developing and updating the plan. It is intended to serve as a basis for the goals, policies, and land use plan adopted by the City. It is supplemented by other reports referenced throughout the document. The goals, policies, and plans adopted by the City are in Volume II of this report, Comprehensive Plan: City of Harrisburg.

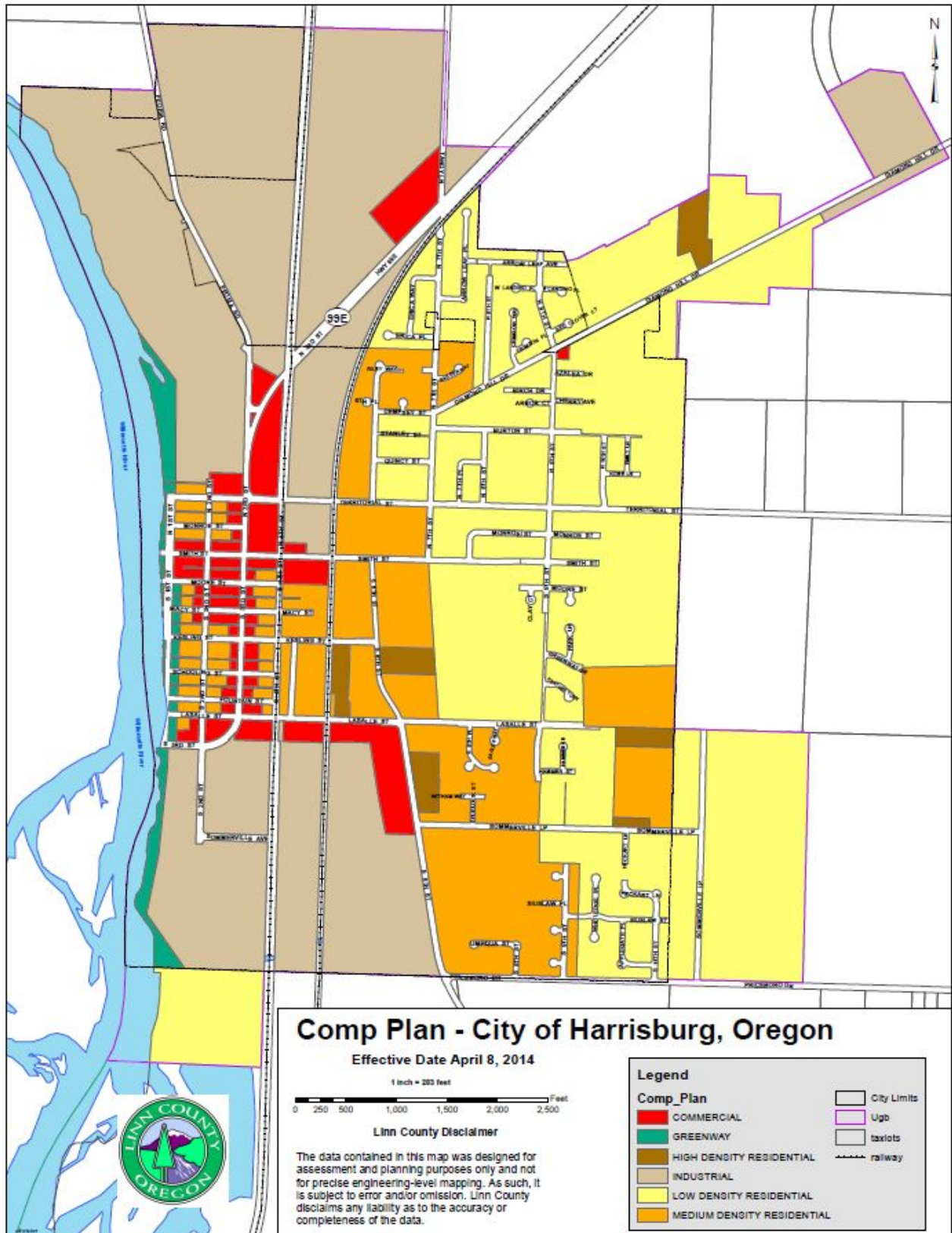
The information in this background report pertains to the Harrisburg Planning Area (See Map 1). The planning area includes the city and the lands within the urban growth boundary.

### **GENERAL BACKGROUND**

Harrisburg is located along the East bank of the Willamette River in the Southwest corner of Linn County. The City was incorporated in 1866, and presently has a population of 2535. It is the center of an agricultural area with the principal crop being rye grass seed.

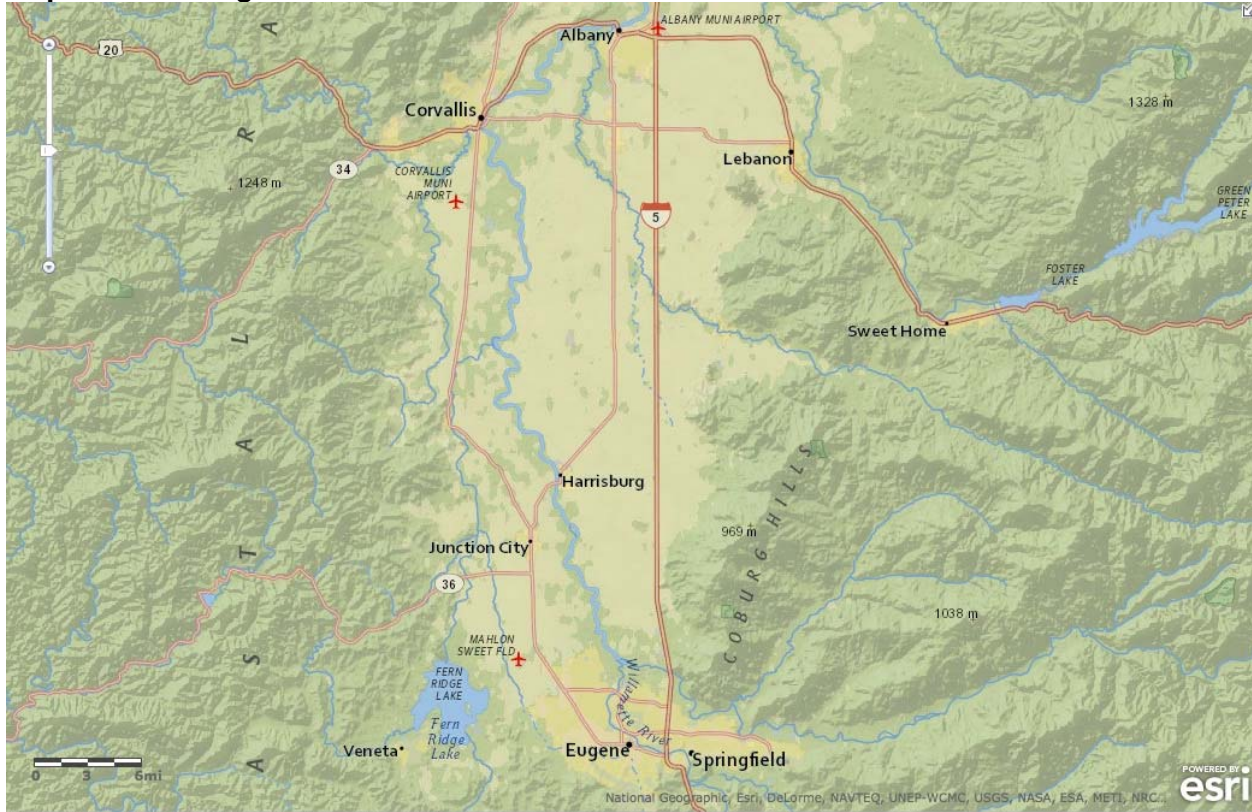
The Community has experienced substantial growth in recent years, almost tripling its population since 1960. Two railroad lines, the Union Pacific and the Burlington Northern serve Harrisburg. In addition, Highway 99E passes through the City and the freeway, Interstate 5, is located six miles to the East. Map 2 shows Harrisburg's location and its relationship to other communities in the mid- Willamette Valley.

**Map 1. Harrisburg Urban Growth Boundary, as of date September 8, 2014**



Although Harrisburg is in Linn county, it has a closer physical relationship to the Eugene-Springfield Metropolitan area in Lane County than to the population centers of Linn County. Harrisburg is 17 miles from Eugene and 27 miles from Albany, the county seat and major city of Linn County. The future of Harrisburg may be significantly affected by the growth of the Eugene-Springfield Metropolitan Area.

**Map 2. Harrisburg Location**



## HISTORY

The townsite of Harrisburg was surveyed in 1852 at the head of navigation on the Willamette River. It was originally called Prairie City and was renamed Thurston the following year. The brothers David and Asa McCully, who also used it as a store, built the first house in 1853. The town was incorporated in 1866 under the name of Harrisburg, presumably after the Pennsylvania capital. Until construction of the railroad in the 1870's, the town of Harrisburg depended almost entirely on river transportation - first by flatboat and canoe and later by steamboat.

In 1871, the Oregon and California Railroad came to Harrisburg, changing the orientation of the City away from the river to Smith Street and the railroad tracks. Industrial land use in Harrisburg today still reflects the importance of the railroads to the City.

In 1924, the Harrisburg Bridge was built across the Willamette River, signaling the growing importance of automobiles as a transportation system. Commercial land use in Harrisburg today reflects this importance through the growing commercial strip along Highway 99E.

Industry and population have continued to increase throughout the post-war decades. Population growth paused in the early 1990's primarily due to the decline in timber and timber related industries. Many rural communities experienced a significant decline in their manufacturing base during this period, but Harrisburg has retained its strong manufacturing sector.

## **GOAL 1: CITIZEN INVOLVEMENT**

The City of Harrisburg has adopted a Citizen Involvement Program to insure the opportunity for citizen involvement in all phases of the planning process. Through this program, the Harrisburg Planning Commission was appointed the Committee for Citizen Involvement. The Planning Commission throughout the planning process has conducted advertised, open, public meetings, and the minutes of these meetings have been made available to the public.

## GOAL 2: LAND USE

The location and development of the City of Harrisburg reflect historic changes in modes of transportation. Originally oriented toward the Willamette River in the 1850's, the city's commerce shifted toward the railroad in the 1870's and later, to the route of U.S. 99E. In more recent years, the city has had to reorient itself toward Interstate 5, which is six miles East of the city. These shifts in modes of transportation have created very definite land use patterns in Harrisburg.

Presently, a pre-cast concrete manufacturer, an airplane parts manufacturer, seed warehouses, wood products manufacturers, and chemical industries are located next to the two parallel railroad lines which bisect the city. The older part of town (between the railroad tracks and the river) is a mixture of residential, commercial, and industrial land uses. The older residential areas are restricted to a few blocks South and North of the main East-West commercial street (Smith Street).

The majority of development has occurred East of the Rail Road tracks. This area is primarily residential with some commercial uses. The Southwest part of town has remained primarily commercial and industrial with some residences. The Southeast part of town has seen considerable residential development in the past decade.

The Harrisburg *Urbanization Study* (June 2013) provides factual information about the City's population, economy, and housing markets. The following information is a brief summary of key information contained in the *Urbanization Study*.

### Characteristics of Harrisburg's Population

Harrisburg grew faster than the County or State between 1990 and 2011. Table 1 shows population growth in Harrisburg and Linn County. Harrisburg grew at an average annual growth rate of 2.97% over the 21-year period, compared with Linn County's growth rate of 1.21%. For comparison, Oregon grew at 1.47% over the same period.

**Table 1: Recent population trends for Linn County and Harrisburg: 1990 to 2011**

Year	Linn Co.	Harrisburg	% of County
1990	91,227	1,939	2.1%
1995	98,510	2,130	2.2%
2000	103,069	2,795	2.7%
2005	110,223	3,275	3.0%
2011	117,340	3,585	3.1%

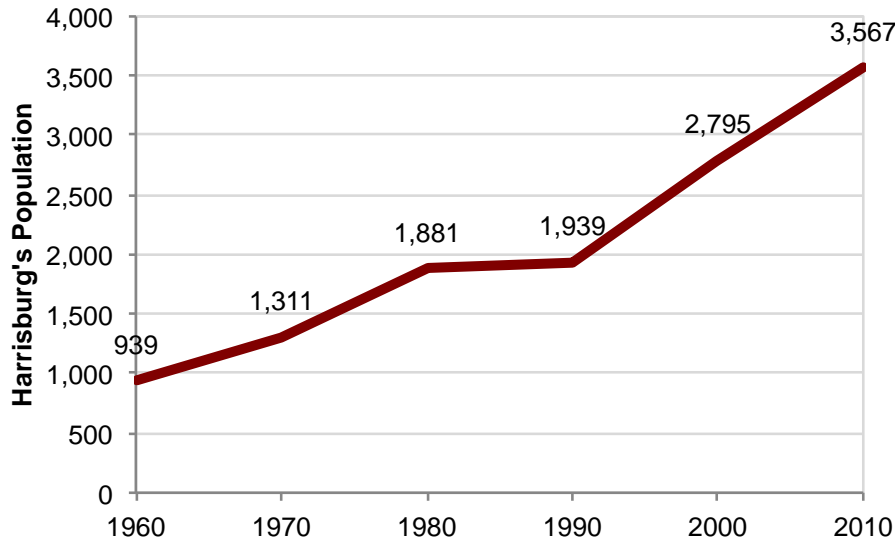
  

Harrisburg population change			
Period	AAGR	Pop. Change	% Change
<b>1990 to 2011</b>	<b>2.97%</b>	<b>1,646</b>	<b>85%</b>
1990 to 2000	3.72%	856	44%
2000 to 2011	2.29%	790	28%

Source: Population Research Center, PSU and calculations by ECONorthwest  
 AAGR = Average Annual Growth Rate

Chart 1 shows Harrisburg's historic growth trends from 1960 to 2010. A key factor that will affect Harrisburg's growth rate is location. Harrisburg is within easy driving distance from three major cities: Eugene-Springfield, Albany and Corvallis.

**Chart 1: Harrisburg Historic Population Trends: 1960-2010**



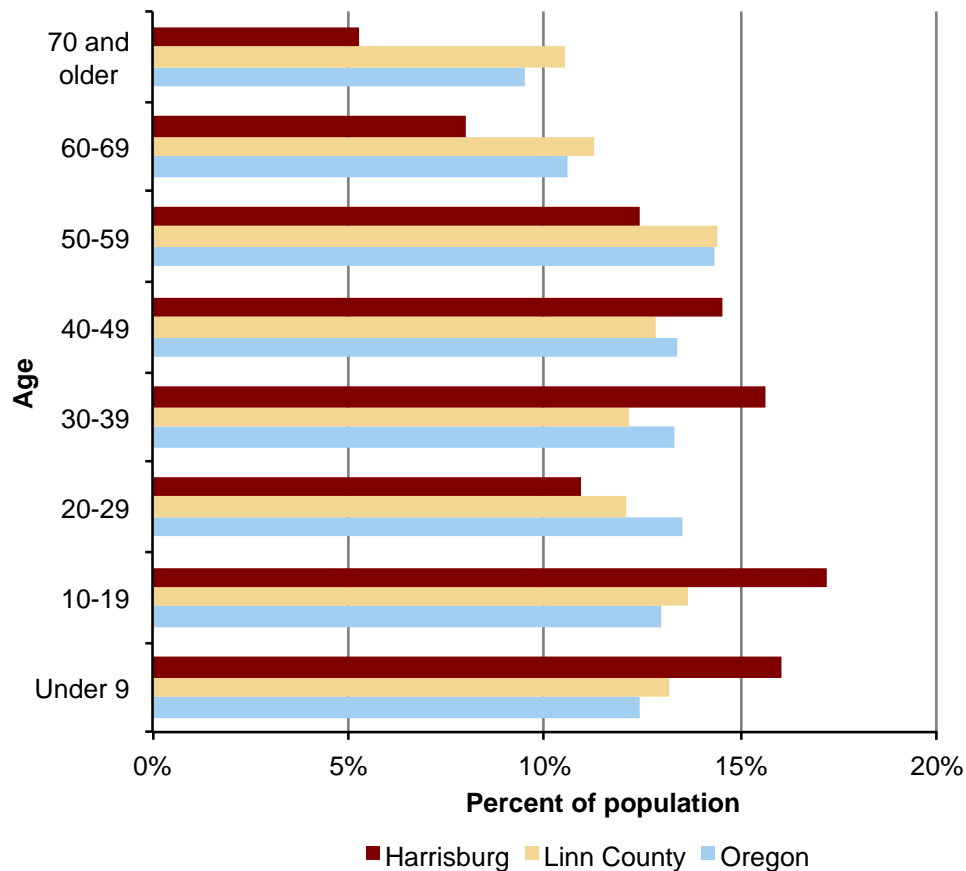
Source: U.S. Decennial Census

Chart 2 and Table 2 provide information about the age of Harrisburg's population. During the 2000's Harrisburg experienced changes in the age structure of its residents. Table 2 shows population by age for Harrisburg for 2000 and 2010. The Census data show that Harrisburg grew by 772 people between 2000 and 2010, which is a 28% increase. Harrisburg experienced an increase in population for every age group except children under the age of 5. The fastest growing groups were 45 to 64 years, 5 to 17 years, and 65 years and older.

A comparison of population increase by age between Harrisburg and Linn County shows that:

- Harrisburg grew faster than Linn County. The population of Harrisburg increased by 28% between 2000 and 2010 and Linn County experienced a 13% population increase.
- Harrisburg had a higher percentage increase in 5 to 17, 25 to 44, 45 to 64, and above 65. The age groups under 5 and 18 to 24 grew faster in Linn County.

**Chart 2. Age distribution, Harrisburg, Linn County and Oregon, 2010**



Source: U.S. Census 2010

**Table 2: Population by age, Harrisburg 2000 and 2010**

Age Group	2000		2010		Change		
	Number	Percent	Number	Percent	Number	Percent	Share
Under 5	289	10%	280	8%	-9	-3%	-2%
5-17	589	21%	805	23%	216	37%	1%
18-24	258	9%	261	7%	3	1%	-2%
25-44	908	32%	1,050	29%	142	16%	-3%
45-64	505	18%	863	24%	358	71%	6%
65 and over	246	9%	308	9%	62	25%	0%
<b>Total</b>	<b>2,795</b>	<b>100%</b>	<b>3,567</b>	<b>100%</b>	<b>772</b>	<b>28%</b>	<b>0%</b>

Source: U.S. Census, 2000 and 2010

Harrisburg’s population trends reflect the statewide trend toward an aging population. Harrisburg is likely to continue attracting families with children.



## Characteristics of Harrisburg's Land

Table 3 shows acres within the Harrisburg UGB and city limits in 2012. According to the City GIS data, Harrisburg had about 1,116 acres within its UGB. Of the 1,116 acres, 940 acres (about 84%) were in tax lots. Acres not in tax lots were primarily in streets and waterways. Harrisburg has about 917 acres within its City Limits; of these about 757 acres (about 83% of total acres in the City Limit) were in tax lots. Additionally, the City has about 199 acres within the UGA (the area between the City Limit and UGB); of this about 183 acres are in tax lots.

**Table 3. Acres in Harrisburg UGB and City Limit, 2012**

Area	Tax Lots	Total Acres	Acres in Tax Lots	Percent in Tax Lots
City Limits	1,275	916.8	756.5	83%
UGA	49	198.9	183.4	92%
<b>Total</b>	<b>1,324</b>	<b>1,115.8</b>	<b>939.9</b>	<b>84%</b>

Source: City of Harrisburg GIS data; analysis by ECONorthwest

Table 4 summarizes acres by zoning for lands within the Harrisburg UGB. The results are summarized by areas within the (1) city limits, (2) the urban growth area (UGA) or urbanizable area (e.g., the area between the city limits and the UGB); and (3) the entire UGB.

The results show that about 53% of the land in the Harrisburg UGB is designated for residential use. About 36% is designated for industrial use, and 3% for commercial/employment use. About 1% is designated "greenway."

**Table 4. Acres by zoning district, Harrisburg UGB, 2012**

Zone	Zone Name	Tax Lots	Acres in Tax Lots	Percent of Acres
<b>City (in city limits)</b>				
C-1	Commercial	110	29.6	3%
GW	Greenway	25	4.9	1%
M-1	Limited Industrial	24	40.1	4%
M-2	General Industrial	33	244.8	26%
R-1	Single-Family Residential	666	276.9	29%
R-2	Multifamily Residential	417	160.1	17%
<b>Subtotal</b>		<b>1,275</b>	<b>756.5</b>	<b>80%</b>
<b>County (in UGB, outside city limits)</b>				
UGA - EFU	Exclusive Farm Use	3	72.1	8%
UGA - HI	Heavy Industrial	1	24.9	3%
UGA - LI	Light Industrial	4	27.1	3%
UGA - RR5	Rural Residential 5	19	53.5	6%
UGA - UGM10	Urban Growth 10	22	5.8	1%
<b>Subtotal</b>		<b>49</b>	<b>183.4</b>	<b>20%</b>
<b>Total</b>		<b>1,324</b>	<b>939.9</b>	<b>100%</b>

Source: City of Harrisburg GIS data; analysis by ECONorthwest

Table 5 shows acres by classification and constraint status for the Harrisburg UGB in 2012. Analysis by constraint status (the table columns) shows that about 499 acres were classified as built or committed (e.g., unavailable for development), 142 were constrained in some manner, and 299 were vacant and suitable for development.

**Table 5. Acres by classification, Harrisburg UGB, 2012**

<b>Classification</b>	<b>Number of Tax Lots</b>	<b>Total Acres</b>	<b>Developed Acres</b>	<b>Constrained Acres</b>	<b>Suitable Acres</b>
<b>Inside City Limits</b>					
Developed	1082	370.2	350.7	19.5	0.0
Partially Vacant	54	139.4	27.0	46.5	65.8
Public	36	62.1	57.8	4.2	0.0
Vacant	103	184.8	0.0	57.3	127.5
<b>Subtotal</b>	<b>1,275</b>	<b>756.5</b>	<b>435.5</b>	<b>127.7</b>	<b>193.3</b>
<b>Between City Limits and UGB</b>					
Developed	31	60.8	57.2	3.7	0.0
Partially Vacant	13	111.9	6.5	7.0	98.5
Vacant	5	10.6	0.0	3.3	7.3
<b>Subtotal</b>	<b>49</b>	<b>183.4</b>	<b>63.7</b>	<b>14.0</b>	<b>105.7</b>
<b>Total</b>	<b>1,324</b>	<b>939.9</b>	<b>499.2</b>	<b>141.6</b>	<b>299.0</b>

Source: City of Harrisburg data; analysis by ECONorthwest

Table 6 shows vacant and partially vacant land by generalized zoning categories. The results show that about 46% of the land available in the Harrisburg UGB is zoned for residential uses. About 1% is zoned for commercial or other employment uses, while about 30% is zoned for industrial uses.

**Table 6. Vacant and partially vacant land by Zoning, Harrisburg UGB, 2012**

<b>City Limits</b>	<b>Tax Lots</b>	<b>Total Acres</b>	<b>Acres Unavailable for Development</b>	<b>Vacant, Buildable Acres</b>	<b>Percent of Buildable Acres</b>
R-1	62	122.0	48.3	73.6	24.6%
R-2	52	41.2	14.7	26.5	8.9%
M-1	8	22.6	4.5	18.1	6.0%
M-2	14	133.7	63.1	70.6	23.6%
GW	3	1.3	0.3	1.1	0.4%
C-1	18	3.4	0.0	3.4	1.1%
<b>Subtotal</b>	<b>157</b>	<b>324.2</b>	<b>130.9</b>	<b>193.3</b>	<b>64.6%</b>
<b>County</b>					
UGA - EFU	3	72.1	2.4	69.6	23.3%
UGA-RR-5	14	43.7	13.9	29.8	10.0%
R-1/UGA-RR-5	1	6.8	0.5	6.3	2.1%
<b>Subtotal</b>	<b>18</b>	<b>122.5</b>	<b>16.8</b>	<b>105.7</b>	<b>35.4%</b>
<b>Total</b>	<b>175</b>	<b>446.7</b>	<b>147.7</b>	<b>299.0</b>	<b>100.0%</b>

Source: City of Harrisburg GIS data; analysis by ECONorthwest

## **GOAL 5: OPEN SPACES AND HISTORICAL AREAS, AND NATURAL RESOURCES**

### **SOILS**

The use of soil information is an important tool in land use planning. Knowledge about the types of soils in the Harrisburg area and an understanding of their properties provides a basis for land use decisions. Soils information can help determine the following: 1) the capability of land to produce agricultural crops; 2) how well land drains; 3) ponding limitations; 4) flooding limitations; 5) the suitability of land for building foundations; and 6) the suitability of land for septic tanks.

Soils in the Harrisburg Planning Area. The Harrisburg Planning Area is located on the broad low terraces and recently abandoned flood plains of the Willamette

River and Muddy Creek. The terrace sediments, referred to as older alluvium, are typical of the flat-lying floor of the Willamette Valley and consist of thick deposits of stratified alluvia sediments that range in texture from silt to clay. These materials were deposited by the Willamette River and its tributaries over thousands of years. Several major floods affecting the whole Willamette Valley also deposited what is known as the Willamette silts, considered a lacustrine (lacustrine refers to lakes) deposit. The most frequently found soils on the low terrace of the Planning Area are Amity, Dayton, and Holcomb. These soils are best suited for field crops.

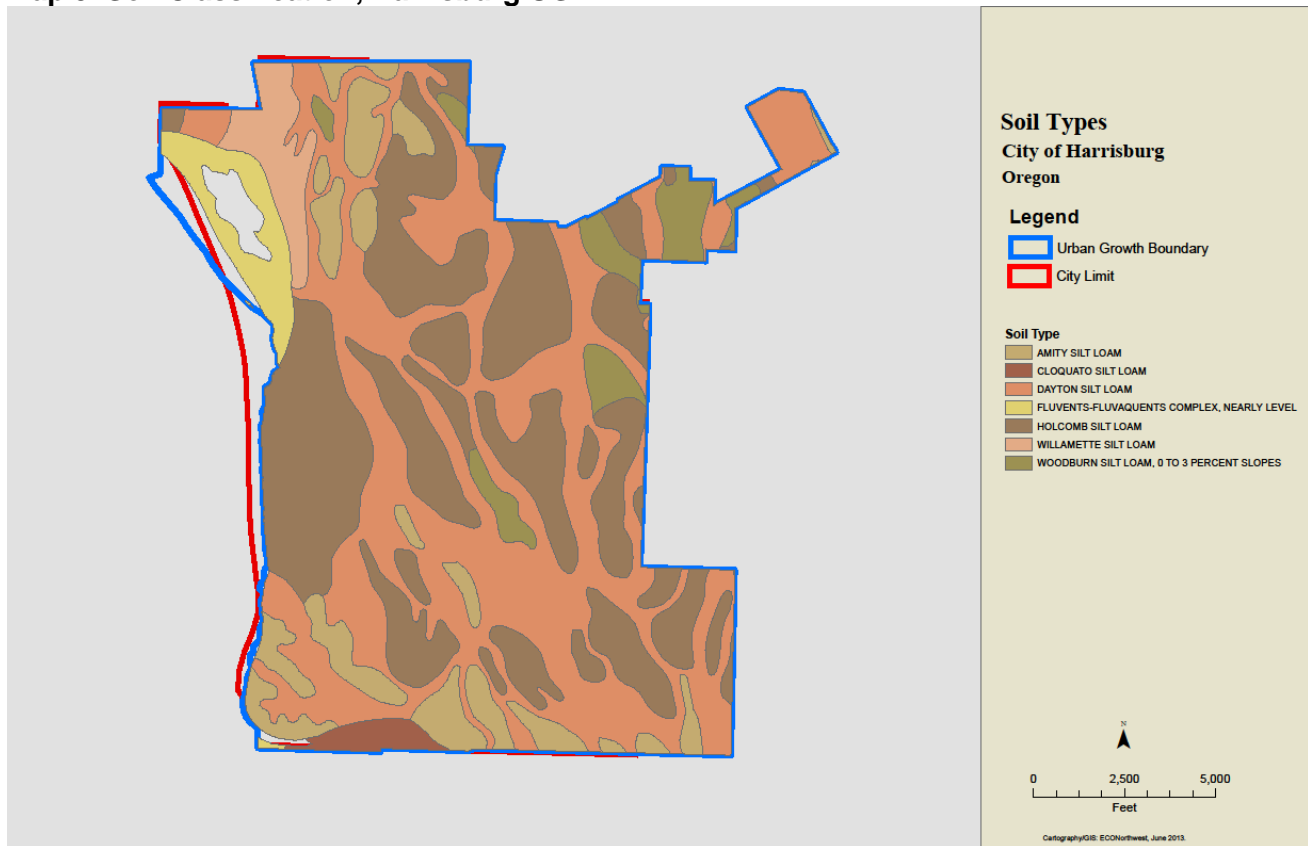
The deposits of the recently abandoned flood plains are of a younger origin than the terrace deposits. They are the present flood plains of the Willamette River, and Muddy Creek and are referred to as the "bottom lands" by local farmers. (Department of mineral Industries, 1974)

There is a wide range of textures from gravel to clay in the bottom lands. The most recent deposits in the formation are sand and gravel bars in and along the banks of the streams. These deposits are classified in the soil series called alluvial land and are a prime source of aggregate resources.

Map 3 shows the types of soils in the Harrisburg Planning area as classified by the Soil Conservation Service. Capability classes are designated by the Roman numerals I through VIII. Higher numerals indicate progressively greater limitations and narrower choices for agricultural or development purposes.

The bottom land soils range from excessively drained to well drained soils. There are also small pockets of well drained soils North of Harrisburg and adjacent to Muddy Creek to the east of the Planning area.

**Map 3. Soil Classification, Harrisburg UGB**



A brief description of soils present in the Harrisburg planning area follows. Much of the planning area is subject to a high water table which can present challenges for development.

Amity Silt Loam: Class II. Deep, somewhat poorly drained. Slope is 0 to 3 percent. Permeability is moderately slow, runoff is slow and the hazard of erosion slight. Surface layer is usually very dark grayish brown silt loam about 16" thick. Seasonably high water table is at a depth of 1 to 1.5 feet from November to May. Not suited to septic tank absorption fields due to the seasonal high water table. Roads and streets should be designed to offset the limited ability of the soil in this unit to support a road.

Cloquato Silt Loam: Class II. Deep, well drained soil on floodplains. Slope is 0 to 3 percent. Moderate permeability, runoff is slow, and the hazard of erosion is slight, except in brief periods of flooding from November to March. The grayish brown silt loam surface layer is about 21" thick. If used for home sites, the main limitation is the hazard of flooding. Septic tank absorption fields do not function properly during periods of flooding. Dikes and channels that serve as floodwater outlets can be used to protect from flooding.

Dayton Silt Loam: Class IV. Deep, poorly drained soil with slope of 0 to 2 percent. The grayish brown surface layer is typically 9" thick. Permeability is very slow, and runoff is very slow to ponded. A seasonal high water table is at a depth of 0.5 foot above the surface to 1.5 feet below the surface from November to May. Building limitations include: poor drainage, slow permeability, shrinkage, and low soil strength. Not suited to septic tank

absorption fields due to the seasonal high water table. Buildings and roads should be designed to offset the effects of shrinking and swelling and the limited ability of the soil to support a load.

Fluents-Fluvaquents Complex: Class VII. Nearly level sand bars, low flood plains, oxbows and sloughs along major rivers or streams. Moderate to poorly drained. Permeability is moderate to rapid. Runoff is slow, and the hazard of erosion is very high because of overflow. The main limitation is hazard of flooding. Poorly suited to development other than recreational.

Holcomb Silt Loam: Class III. Deep and somewhat poorly drained soil. Slope is 0 to 3 percent. The surface layer is dark grayish brown silt loam to 7 inches over a mottled silty loam about 14 inches thick. Permeability is very slow, as is runoff. Hazard of erosion is slight. There is a seasonal high water table at a depth of 1 foot to 1.5 feet from November to May. Building limitations: wetness, slow permeability, shrinkage/swelling and low soil strength. Design roads to offset the limited ability of this soil to support a load.

Willamette Silt Loam: Class II. Deep, well drained soil with slope of 0 to 3 percent. Surface layer is dark brown silt loam to 13 inches. Moderate permeability, slow runoff, and the hazard of erosion is slight. Building limitations mainly concern shrink-swell potential and low soil strength. Design roads and street to offset the limited ability of this soil to support a load.

Woodburn Silt Loam: Class II. Deep, moderately well drained soils with slope of 0 to 3 percent. The surface layer is usually very dark brown silt loam about 6 inches thick overlaying a dark brown loam about 13 inches thick. If used for home sites the main limitations are the shrink-swell potential, low soil strength, wetness, and slow permeability. Not well suited for septic tank absorption fields due to the low permeability and the seasonal high water table.

Riverwash: Class VIII. Deep and excessively drained to poorly drained soils. Riverwash is subject to overflow when rivers are high and is poorly suited to urban development. It is limited mainly by seasonal flooding, wetness and erosion.

Surface Drainage. Surface drainage in most of the Harrisburg Planning Area is poor due to the soil texture and topography of the area. The terrace deposits, predominately Dayton soils, have poor drainage characteristics and there is only a slight slope to the Northwest toward the Willamette River. Therefore, surface drainage runs generally in a Southeast to Northwest direction across the Planning Area. Details of existing and proposed drainageways are documented in the City's Surface Drainage Plan adopted by the City in February 1994.

## **NATURAL RESOURCES**

The natural resources of the Harrisburg Planning Area are important to the economic base of the City and affect the quality of life experienced by residents of the area. It is therefore essential that the natural resources of the Planning Area be inventoried and considered in the planning process. This section will discuss the following: surface water; groundwater; aggregate deposits; fish and wildlife habitat; and scenic resources.

Surface Water. Surface water in the Harrisburg Planning Area is made up of two streams and some intermittent drainage courses. The two streams are the Willamette River and Muddy Creek.

Willamette River. The Willamette River, the region's major river, and recently designated Heritage River, is a valuable resource in the Planning Area. Originally, it was the only year-round source of transportation in the Valley and Harrisburg's location and early growth can be traced to the River.

Historically, but less so today, the aggregate deposits found along the Willamette were an important part of the local economy. The River is also an important source of fish and wildlife habitat, a major source of scenic attraction, and an important recreational resource for the planning area.

Further information on the Willamette River is included in the section on the Willamette Greenway.

Muddy Creek and Intermittent Streams. Muddy Creek, a small stream which meanders along Northeast of the Planning Area, and drains the land East of the Planning Area. Small, intermittent drainage courses adjacent to the Planning Area include Lake Creek, draining land North of Harrisburg, and Camous Creek draining land east of the Planning Area. These streams and their riparian vegetation provide wildlife habitat and scenic values to the Planning Area.

## **GROUNDWATER**

Groundwater is water that fills spaces in rock and around soil particles beneath the land surface. Precipitation, mostly in the form of rain, is the principle source of groundwater. Its existence depends on the porosity and permeability of a geologic material and its mineral quality is generally related to the geologic environment.

Availability in the Harrisburg Planning Area. Both of the two geological units existing in the Harrisburg area are good aquifers. The older alluvium of the terrace will yield from moderate to large quantities of water to wells.

Groundwater moves from areas of recharge to areas of discharge. The rate of which Groundwater is replenished depends upon the amount and intensity of precipitation, the infiltration capacity of the soils, and the ability of the underlying geological strata to transmit water.

The aquifers in the Willamette Valley are recharged mostly during late autumn and winter and are usually filled to capacity by January or February. Discharge occurs through seeps and springs adjacent to or in stream channels, by evapo- transpiration in areas where the water table is near the surface, and by pumping for wells. During the dry summer months, the rate of discharge exceeds the rate of recharge and the water table is lowered. The City Public Works Department monitors the water table at each well site.

Quality. Wells in the Planning Area that take water from the alluvial deposits beneath the Valley plain, and from the present flood plain of Willamette River contain relatively small concentrations of most dissolved minerals. However, concentrations of calcium and magnesium, tend to run high in the Planning Area, as does iron, so that the groundwater is

generally rated as hard. Fecal coliform has rarely been found in water samples taken from the Planning Area. The presence-of fecal coliform indicates pollution from fecal wastes.

Existing Uses. Groundwater in the Harrisburg area is used for a variety of purposes. The largest use is in agriculture. A 1976 study of a 350 square mile area in the Harrisburg-Halsey region showed that 91% of the groundwater was withdrawn for irrigation and the rest was withdrawn for domestic, industrial, and public use. Harrisburg uses groundwater for its municipal water supply.

Protections for Future Years. The City monitors the water table level at the well sites. According to City monitoring reports from 1998 the water table level fluctuates from 36' to 52' at well #4, and from 24' to 44' at well #5. 1998 was a fairly wet year and water table levels are often lower during drier years. The lowest levels occur in the warmest months when water usage is highest. Monitoring local water table levels is the most accurate way to determine aquifer capacity. A Willamette Basin Study is underway which may provide useful information as to water use in the region. The information from the study will help the City plan for future water requirements.

Fish and Wildlife. Preservation of fish and wildlife species is important to the natural balance of the environment. It is also important for recreational purposes and can bring in revenue to a local economy.

Every wildlife species has the basic needs of food, water, and cover that must be met in order for survival. If any of these basic needs is lacking, the chances of survival for a species is reduced.

An important principle of wildlife habitat is the "edge effect." Where two or more different landscape types come together, there is more opportunity for all three of the basic needs to be provided. This is very important in the Harrisburg Planning Area where the open fields of the Valley floor meet the wooded and heavily brushed fringes of the Willamette River and in places where streams run or an area of brush or a grove of trees is in the midst of open fields. For this reason the preservation of edge areas is important to wildlife preservation. In and around Harrisburg, the most important edge areas are the riparian areas.

The most common wildlife types in the Harrisburg area are deer and small animals (otters, rabbits, raccoons, skunks, opossum, nutria, etc.) and several bird species, including several waterfowl species. A bald eagle nest is located approximately 1 mile down river on the west shore.

The Willamette River provides a good habitat for several species of fish in the area near Harrisburg. These include various warm water game fish, Trout, and anadromous fish, especially Fall Chinook. (Oregon Department of Fish and Wildlife, 1973)

The Oregon Department of Fish and Wildlife has discovered Salmon spawning areas just south of the bridge, and are exploring the resource further. Several species of salmon found in the Willamette River have recently been listed as threatened and endangered, and protection plans are being developed to assure their survival. Protection plans may impact how the City and residents use and treat waters that flow into the Willamette River.

Aggregate Resources. Aggregate resources include sand, gravel, and crushed rock. They are used in the making of concrete, asphalt, rip-rap, and select fill.

Sand and gravel have been important resources in the Harrisburg Planning Area. They occur along present and former courses of major rivers and, in the Planning Area, are found in the younger alluvium deposits that make up the present flood plain of the Willamette River. These deposits are about 30 feet thick in the Harrisburg area.

There is presently one sand and gravel extraction site within the Northwest portion of the Harrisburg Urban Growth Boundary, owned by Morse Brothers. Extraction from this site has permanently ceased due to a decrease in the amount of economically removable aggregate. Another aggregate extraction operation is located outside of, but adjacent to, the Southwest portion of the Urban Growth Boundary. Extraction at this site may continue into the future (See map No. 4). No significant aggregate resource sites exist within the Harrisburg Urban Growth Boundary.

Open Space and Scenic Resources. Goal 5 of the LCDC Statewide Goals and Guidelines calls for the conservation of open space and protection of natural and scenic resources. To achieve this goal, inventory of available open space must be taken and the impact of land use on open space and scenic resources should be considered.

Open Space. Open space consists of land in a natural state and land in agricultural or forest uses. Those undeveloped lands are not only important for the scenic resources they provide, but also for the protection of air, water, soil, and wildlife resources.

Open space is a steadily decreasing resource within the Urban Growth Boundary. Vacant industrial lands in the northern areas of the Urban Growth Boundary provide some open space, but they are destined to be converted to industrial use, and will therefore not provide open space in the future. Residential development in the eastern portion of the City is proceeding at a rapid rate and existing vacant lands in this portion of the City will be converted to home sites and will provide limited open space for the future.

Lands along the Willamette River that are generally unsuitable for building could provide valuable open space in the City of Harrisburg. These lands are currently designated industrial lands, but the bulk of these riparian lands are within the City's recently designated Safe Harbor Area, and would provide valuable recreational opportunities to residents if set aside as open space. Concerned residents and Council members have expressed interest in obtaining public access to these lands in order to connect the existing riverfront park to the City's Lagoon Property.

Harrisburg has a museum park, a small railroad park, a riverfront park and a newly acquired riverfront parcel north of the boat ramp which total slightly over 5 acres.

Scenic Views and Sites. Scenic views and sites are those that are valued for their esthetic appeal. The Willamette River, the historic Harrisburg Bridge and riparian areas provide the major scenic attractions for the City. These visual resources are appreciated for the intangible quality they add to the lives of residents and to those who pass through the area. This resource also has economic value as a tourist attraction since the demand for access to natural areas within easy driving is increasing while such resources are becoming scarce.

Rural farmland, views of distant mountains, and water-related views are all types of landscapes that have universal appeal as scenery. All of these are features of the Harrisburg Planning Area. Views of the Willamette River from any point of the bank within Harrisburg are especially attractive and noteworthy.



City landscapes may also contribute scenic appeal and efforts can be made to increase the scenic attractiveness of a city in many ways. Civic organizations often get involved in various efforts to contribute to the scenic attractiveness and livability of cities. These efforts may include, among other things, planting trees or establishing an area in a park that will attract wildlife. Businesses can contribute by fixing up their storefronts and lots. The City itself can make efforts to protect and increase the attractiveness of its environs and protect surrounding scenic views through landscaping projects and zoning, building, and subdivision ordinances.

Planning for scenery is often difficult because its value is hard to measure, its disappearance is not always immediately apparent, and a great deal of what is scenic is privately owned. For this reason, if scenic resources are to be protected, they must be considered whenever planning and development decisions are made.

Energy Resources As the traditional sources of energy become less available and more expensive, discussions about energy become relevant, even for small cities such as Harrisburg. In Oregon, space heating and automobile use account for 86% of a family's energy use. (Mackie and Mackie, 1977). Russ Hurst at Pacific Power & Light suggests that the current trends toward gas heat, heat pumps, and gas water heaters will continue due to cost, availability, and government encouraging gas as a cleaner alternative to electricity. Electric companies are struggling with how to handle possible deregulation. The availability of energy will play an important role in the future growth of Harrisburg and the future well-being of its citizens. Within the framework of its comprehensive plan, the City can consider and address alternative sources of energy and methods of energy conservation.

Presently, Harrisburg residents use primarily two forms of energy in their homes: electricity and natural gas. Electricity is supplied by Pacific Power and Light Company and natural gas is supplied by Northwest Natural Gas Company. As the cost of these two energy forms has continually risen, wood has also increasingly been used to heat homes. As dams become less viable sources of electricity in the northwest due to environmental constraints, alternative energy sources become more important. PP & L has invested in wind farms in Wyoming and plans to increase investment in alternative energy sources to meet future demand.

Renewable energy sources, such as solar radiation, could also be used in Harrisburg. The use of solar energy requires that development occur so that structures are not obstructed from the sun's rays. Special development regulations are needed to insure this.

Energy-conservation can also be considered in planning for the future development of a city. The clustering of development, provision of bicycle paths, and existence of neighborhood convenience stores are examples of city development methods which can conserve energy.

Because of limited energy resources, it is important for cities to consider conservation and renewable energy resources in planning for the future.

## **HISTORIC RESOURCES**

Historic Resources. This section is contained within the document, *Historic Resources Program of the City of Harrisburg*.

## **GOAL 6: AIR, WATER, AND LAND RESOURCES QUALITY**

LCDC Goal #6 is: "To maintain and improve the quality of the air, water and land resources of the state". It requires that waste and process discharges do not threaten environmental quality standards. The following section includes inventories of pollution and potential pollution sources in the Harrisburg area, discussions about protection of land, air and water resources, and discussion about applicable regulations.

### **LAND**

When discussing land resources, several aspects of land resource quality must be dealt with. One aspect concerns problems associated with development of the land. In Harrisburg, these problems are related to poor soil drainage and will be discussed in the "Goal 11" section. A third aspect concerns the preservation of valuable resource capabilities of the land. This is discussed in this section and in "Goal 5" section of the plan.

Drainage Problems. The combination of flat terrain and poorly drained soils creates several development problems in the Harrisburg Planning Area. The problem of ponding which is associated with poor drainage and can present development restriction, was discussed in the Natural Hazards section. This section will discuss soil septic suitability and dwelling suitability.

Septic Suitability. Soil septic suitability is rated on its limitations to absorb effluent. Soils in the Harrisburg Planning Area generally have poor suitability ratings (Personal communication with Jan Heron at Linn County Environmental Health Dept. March 1999) due to their tendency to percolate slowly and/or flood. Because of these limitations, development within the City where there are no sewer lines must remain at low densities. The Linn County Environmental Health Department is responsible for issuing septic system permits. The City of Harrisburg requires all new development within the City to connect to the City Sewer System.

Dwelling Suitability. Soils in the Harrisburg Planning Area also present generally severe limitations for building houses. These limitations include wetness, high shrink-swell potential, tendency to flood, and low strength. Because of these limitations, special precautions must be taken when building, to protect both that which is being built and adjacent properties. The City requires necessary drainage improvements to be made when property is developed.

Agricultural Capabilities. Lands adjacent to the Planning Area are predominantly Class I through IV soil and, therefore, are considered agricultural lands. Goal 14 of the LCDC Goals and Guidelines requires consideration of retention of agricultural land in the establishment and change of urban growth boundaries.

### **AIR**

Air pollutants come from several sources in the Harrisburg area. These include industry, automobiles, and slash burning. Generally, movement of the air will carry these pollutants away, however, the Willamette Valley is often subject to periods of poor ventilation causing these pollutants to dissipate more slowly.

The Oregon Environmental Quality Commission (EQC) has legal authority to adopt administrative rules concerning environmental air quality. The DEQ, administrative body of the EQC, solicits comments on proposed regulations of the EQC. Notice of all applicable proposed rule-making actions is sent to the City of Harrisburg for comment.

In 1972, Oregon adopted a Clean Air Implementation Plan which set standards for each pollutant that are either equal to or more stringent than required Federal standards. This plan is revised from time to time to respond to changing conditions or new information. The Oregon Department of Environmental Quality (DEQ) is responsible for implementation of this Plan. (DEQ, 1978) Current air pollution information is accessible at the DEQ website at [www.deq.state.or.us](http://www.deq.state.or.us).

The Department of Environmental Quality's pollution prevention programs have resulted in 99% of Oregonians living in areas that meet the National Air Quality Standards. This is a dramatic change from 1980 when only 30% of Oregonians lived in areas that met the National Standards. The air pollutants of greatest concern in Oregon fall into three categories:

- 1) Ground level ozone, commonly known as smog;
- 1) Carbon monoxide (mostly from motor vehicles); and
- 2) Fine particulate matter (mostly from wood smoke and dust). The Environmental Protection Agency recently issued new standards for particulate matter and ozone. Information about the new standards or other EPA regulations can be accessed at the EPA web site at [www.epa.gov](http://www.epa.gov).

Air Pollution in the Harrisburg-Planning Area. The DEQ regulates field burning in Oregon. Until recently, field burning was considered a major source of air pollution in the Harrisburg area. Field burning has been greatly reduced and is no longer a source of major air pollution.

A significant source of air pollution is automobile exhaust. The opening of Interstate 5 in 1960 brought about a significant drop in the average daily traffic passing through Harrisburg on Highway 99E and therefore, reduced the carbon monoxide level in the City at that time. (From 8,200 ADT (average daily traffic) in 1959 at Territorial and 99E, to 3,300 ADT at the same location in 1960). However, since that time traffic on Highway 99E has been steadily increasing. ODOT's 1997 traffic volume tables document the ADT at Territorial and 99E at 8,500, a significant increase from the 1960 traffic counts, in spite of access to I-5. (ODOT, State Hwy. Division 1960,1997).

Vehicle exhaust may become an increasingly problematic source of air pollution for the City if traffic volumes on 99E continue to increase. Detailed traffic information for Harrisburg is documented in the City's 1999 Transportation System Plan.

## **NOISE**

LCDC Goal #6 defines noise as a waste and/or process discharge and requires that it "shall not threaten to violate, or violate applicable state or federal environmental quality statutes, rules, and standards." Excessive noise can be a health hazard. It can interrupt sleep, cause fatigue, headaches, muscle tension, hearing loss and other ailments, and disrupt

communication. Harrisburg does not currently have any severe noise pollution problems. Major sources of noise in the community include the two railroads that pass through it, construction projects, and motor vehicles on Highway 99E. At present, there is no indication that significantly more noise will be coming from these sources in the planning period.

Noise Standards. Although there are some federal laws concerning noise, the primary responsibility for noise control rests with state and local governments. The Oregon Noise Control Act (ORS 457), adopted in 1971 and amended in 1977, authorized the Environmental Quality Commission to adopt statewide standards of noise control. These standards are administered and enforced by the DEQ. The standards adopted by the EQC are contained in OAR 340-35-005 through 340-35-100 and deal primarily with motor vehicles, commercial and industrial sources.

Noise Control and Land Use Planning. The primary method of implementing noise control policies that are included in a comprehensive plan is through a zoning ordinance. Through zoning, noise sources can be separated from noise sensitive areas. This can be done by placement of the zones themselves and through setback requirements. Overlay zones can also be used to establish special provisions for sensitive areas affected by high level noise.

Special provisions (performance standards) can also be applied to common noise producing land uses. Special provisions that can be used include certain construction practices and site design details, which tend to lessen noise incompatibilities. One such method is the use of buffer strips. Another method is the use of noise barriers such as earth berms and walls. Construction standards, which require certain acoustical treatments, can also be used.

Finally, performance standards can be used to regulate the amount of noise from a source. In this case, a noise source can be required to demonstrate that it will comply with a noise standard. Harrisburg currently has noise performance standards in its limited Industrial zone.

In addition to zoning regulations, local governments can adopt and enforce noise ordinances for their Jurisdictions. Harrisburg has a nuisance ordinance, which includes noise control regulations. The DEQ provides technical assistance to jurisdictions wanting to develop noise control ordinances.

## **WATER**

Good water quality is important not only for drinking purposes, but for many other non-consumptive uses. These uses include recreation, fish and wildlife, irrigation, and industrial uses. Maintenance of good water quality requires limiting the amount and type of pollutants that enter a body of water.

Federal Regulations. The Water Pollution Control Act Amendments, enacted in 1972, is the most significant Federal legislation with respect to local comprehensive plans. Its purpose is to regulate municipal and industrial polluters. The act affects water quality management on three levels. The first level is on a river basin scale (Section 303); the second level is on a smaller regional scale (Section 208); the third level is on the municipal scale and provides funding to improve or build sewer systems (Section 201).

During 1980 Harrisburg was involved in the Section 201 level, to separate the storm sewers from the sanitary sewers, and complete modifications to the sewage treatment plant. The Federal government, through the EPA, funded 75% of the cost of improvements with Section 201 money. In 1992, the Sewage Lagoon Project was completed. The City purchased 200 acres just North of town, on the west side of Peoria road. At that site a three cell lagoon, made up of 14 acres, was constructed. In 2004, the City doubled the capacity of the wastewater treatment plant by adding another 14 acres of treatment lagoons. The project was funded by a grant and low interest loan from the USDA Rural Development.

The City installed three new pumps for pumping sewage out to the lagoon, along with installing many new electrical boxes and rewiring. A 10" pressure main from the pump station pumps effluent to the lagoon site. A growth factor of twenty plus years has been planned into this project. All irrigation pumps, treatment, testing, and maintenance will be carried out by city crews. The existing Lagoon is nearing its capacity, so the City must plan for an expansion in the near future.

State Programs and Regulations. The DEQ has primary responsibility for water quality management and pollution control regulation in Oregon. Because proper management of water quality is related to land use, several DEQ programs can affect or are affected by local comprehensive plans. Those programs that require local plan conformance or that may in the future, are listed here:

1. The DEQ requires the approval of on-site sewage disposal systems (primarily septic systems) and issuance of a permit prior to building permit issuance. In Linn County, permits are issued by the Linn County Environmental Health Department. (Statement from local agency certifying plan/goal conformance is now required)
2. State and Federal regulations require waste water discharge permits for new or modified sewage and industrial waste sources. DEQ issues these permits.
3. Before initiation of construction, DEQ approval is required for sewage and industrial waste treatment facilities (new plants and expansions.)
4. (Statement from local agency certifying plan/goal conformance is now required.)
5. Prior to initiation of construction, DEQ approval is required on plans for extension and new sewer systems. (See approval guidelines above)
6. DEQ certification is required on sewerage works construction grant applications to EPA. (Plan conformance statement required)
7. The State, through the DEQ, offers grants and loans for sewerage works construction. (Conformance statement required)

Other DEQ programs affecting land use include:

1. The DEQ prioritizes sewerage works needs for Federal funding assistance.
2. The DEQ enforces standards and administers plans for sewage and industrial waste disposal and protection of water quality. Citizens and local agencies are given the

opportunity to comment on all proposed plan elements and rules. The following are important existing rules:

- a. State-wide Water Quality Management Plan, OAR 340, Division 41;
- b. Subsurface sewage disposal rules, OAR 340, Division 71, 74, and 75; and
- c. Other DEQ rules and procedures contained in OAR 340.

Water Quality in the Harrisburg Planning Area. Residential waste water flows in the City of Harrisburg are estimated to be about 87 gallons per day per capita. Existing industrial and commercial businesses do not contribute industrial wastes, only employee domestic wastes.

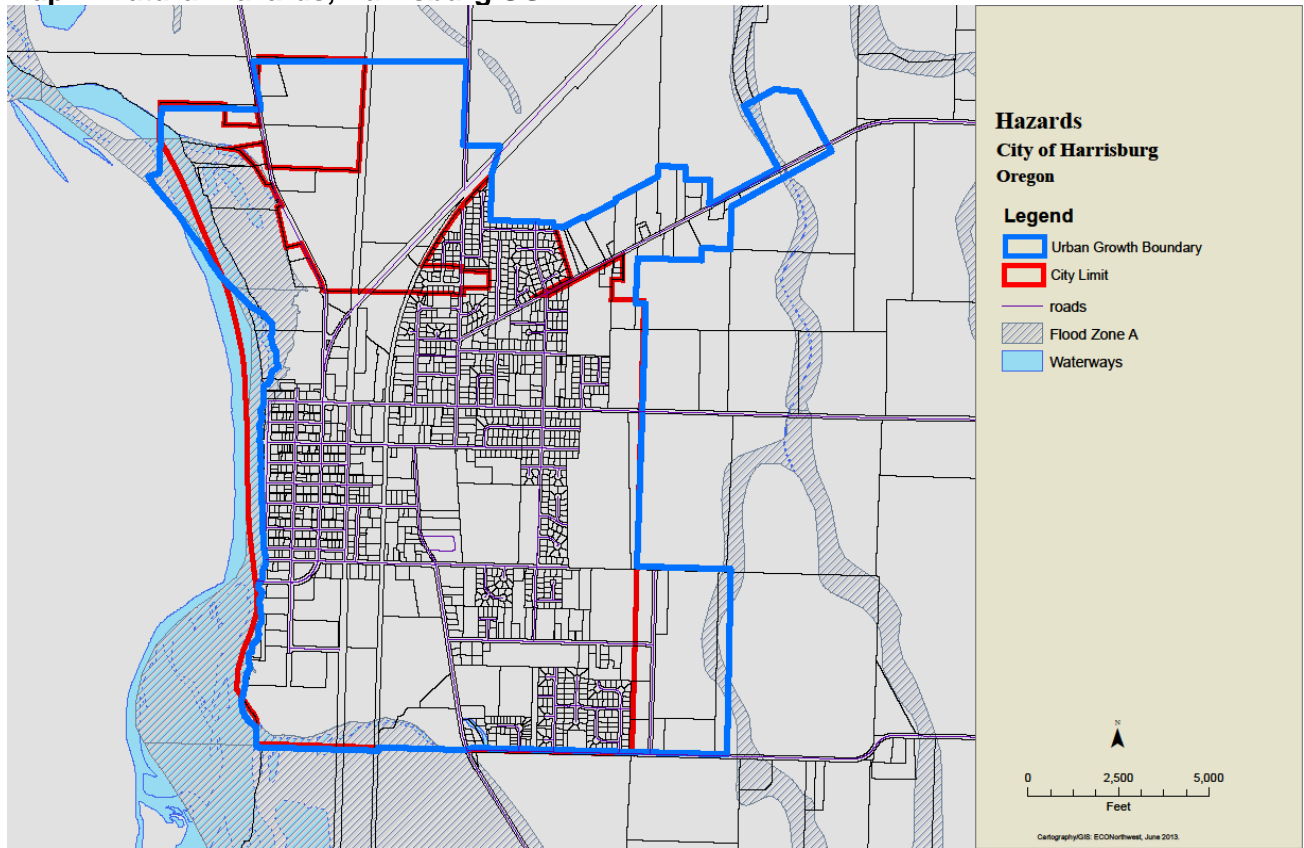
The City's sewage system had been subject to excessive infiltration and inflow, which resulted in the overloading of the sewage treatment facilities. A Facility Plan of the system was prepared and approved by the regulatory agencies and adopted by the City of Harrisburg. As outlined in the Facility Plan, a rehabilitation program was initiated to remove the excessive infiltration and inflow of the existing collection system. The City has adopted a continuing program to monitor the collection system and the correction of defective conditions has been determined.

The City's current wastewater treatment plant was constructed in 1992 and was designed for an average dry weather flow of 0.242 million gallons per day (mgd) and an average wet weather flow of 0.485 mgd. It was designed to accommodate 2,800 people. The wastewater treatment plant was expanded in 2004 to serve a total population of 6,000 people. It was designed for an average dry weather flow of 0.516 mgd and an average wet weather flow of 1.110 mgd.

## GOAL 7: NATURAL HAZARDS

In the Harrisburg planning area, there are several types of natural hazards which should be considered when developing planning policies and making planning decisions. The hazards of concern in the planning area are flooding, streambank erosion, and highwater table.

**Map 4. Natural Hazards, Harrisburg UGB**



**Flooding.** Various state and federal agencies have been active in studying flood plains. These agencies include the U.S. Army Corps of Engineers, the U.S. Soil Conservation Service, the U.S. Department of Housing and Urban Development (HUD), the Water Resources Board of the State of Oregon, and the U.S. Geological Survey. For the purpose of flood plain management, a flood of the magnitude likely to occur with a 1% chance in any year is commonly used to identify the boundary of the flood prone area. This is commonly known as the 100-year flood plain and has been identified by the Army Corps of Engineers. (refer to map 4)

Identification of the 100-year flood boundary does not guarantee that a higher flood may not occur at some time in the future. However, if development is designed to avoid damage during a flood, the risk of loss will be reduced to the point where serious loss is unlikely and insurance should be available at a reasonable rate to cover the remaining risk.

**Flood Plain Management.** Harrisburg participates in the National Flood Insurance Program administered by the Federal Insurance Administration (FIA) of the U.S. Department of Housing and Urban Development. To participate in this program, a community must adopt

flood plain management regulations. Harrisburg has adopted a flood hazard ordinance which designates a flood hazard zone determined by the FIA, and places special requirements on development in that zone.

Harrisburg is currently covered under the National Flood Insurance Program, and a Flood Insurance Rate Map has been developed. Harrisburg now participates in the Regular Program which provides double the amount of coverage available under the Emergency Program with the additional coverage being available at actuarial rates. On September 14, 1987, Harrisburg adopted an ordinance which uses the Flood Insurance Rate Map as a basis for restrictions. The City amends the ordinance as required to comply with all applicable laws.

High Ground Water. High ground water refers to ground water which is near to the surface. High ground water is likely to result when ground water is recharged faster than it is discharged and often occurs in January and February during periods of high amounts of precipitation. High ground water is a condition that occurs over much of the Willamette Valley typically in areas of flat terrain.

A high ground-water table can create buoyancy which can cause underground storage tanks and septic tanks to surface, cause basements to crack and lift swimming pools out of the ground. Adverse soil conditions for construction often exists where there is water at or near the ground surface. These soils are usually inadequate for foundations of large structures. In addition, caving can occur in deep excavations of soils with a high water content.

Engineering information for large scale construction and development projects should include an assessment of the high water table with emphasis placed on the highest level of occurrence during the wet season rather than on the low levels representative of the dry season. Damage from high ground water can be prevented or reduced through the use of various drainage measures and regulations such as zoning ordinances, sub-division ordinances, building codes, or development limitation ordinances.

Stream-bank Erosion Stream-bank erosion is the loss of land due to natural stream action. In the Harrisburg Planning Area this erosion is meander generated. Meandering is the tendency of some streams and rivers to assume S-shaped courses and is characterized by a steep bank on one side of the river associated with a sand and gravel bar on the opposite side. Areas with a steep bank are typically subject to erosion while areas with sand and gravel bars are a result of deposition of previously eroded materials.

There are many factors affecting the amount and distribution of stream-bank erosion. These include the sediment load of a stream, stream velocity, channel gradient and roughness, and stream geometry. A change in any one of these variables will initiate a compensating change in another. Thus, channel straightening increases stream gradient, which in turn, will increase both stream velocity and stream bank erosion downstream.

Stream-bank erosion can lead to the destruction of roads, buildings, and bridge abutments, and to property loss. Flooding can aggravate these effects, when flood waters flow over sharp meanders and the resulting scouring destroys the river-bank.

The amount of stream-bank erosion is subject, to a degree, to human actions, and efforts are often made to control it. Dams can affect stream-bank erosion by reducing stream



discharge during high flow periods and this will result in a river having less energy, which should decrease bank erosion downstream. Channel straightening is not a viable solution because, as previously mentioned, it increases stream gradient, leading to increased stream velocity and greater bank erosion downstream.

The use of revetments is effective in reducing stream-bank erosion in areas of critical concern and is more economically feasible than other methods. Dredging and bar removal can be used in conjunction with revetments to reduce bank erosion in some cases and will also provide supplies of sand and gravel.

Stream-bank erosion in the Harrisburg Planning Area. Stream-bank erosion is or has been a threat to several areas in and around Harrisburg (see Map 4). Revetments on the East bank of the Willamette River in the central part of Harrisburg protect that part of the city from critical erosion. In addition, there are revetments in several other places in the Harrisburg Planning Area. However, there are also unprotected areas that are presently subject to erosion. There is an area extending along the East bank of the Willamette River North of the city, where stream-bank erosion is doing considerable damage. This area is primarily in farm use. Erosion of the City's Sewage lagoon property is of particular concern. There is no problem of stream-bank erosion along Muddy Creek. This is probably due to its low velocity. (Dept. of Geology and Mineral Industries, 1974).

## **GOAL 8: PARKS AND RECREATION FACILITIES**

Harrisburg prepared and adopted the *Harrisburg Parks Master Plan*. The *Parks Master Plan* supports the Comprehensive Plan and articulates the City's vision for the municipal park system. The Plan includes a community needs assessment that details the City's strategies for meeting park facility needs.

The *Parks Master Plan* is designed as a tool for planning, programming, and capital improvements to meet the recreational needs for the citizens of Harrisburg. The Plan identifies current and future park and recreation needs; identifies alternative ways to meet the needs of the citizens; and, establishes a capital improvement program to meet the recreational needs of the City of Harrisburg.

## **GOAL 9: ECONOMICS**

Harrisburg has historically been an industrially based community with considerable influence from the agricultural sector. Economic analysis and planning is very important in determining the future economic stability and overall welfare of the community. Demographic and economic information is documented in the City's *Urbanization Study* (June 2013).

## **GOAL 10: HOUSING**

Harrisburg provides opportunities for development of a variety of housing types, with an emphasis on single-family housing. In 2010, 80% of the housing stock in single-family detached and manufactured housing and about 20% of the housing stock in attached and multifamily housing in 2010. Nearly three-quarters of Harrisburg's housing stock was owner-occupied in 2010. Additional housing market and demographic information is documented in the City's *Urbanization Study* (June 2013).

## **GOAL 11: PUBLIC FACILITIES AND SERVICES**

Consideration of public facilities is important when developing a comprehensive plan for a city. Public facilities are necessary for the proper functioning and livability of a city and their provision will affect the rate and direction of growth of a city. The following section inventories existing public facilities in Harrisburg and identifies future needs.

### **WATER SYSTEM**

#### **Water Supply Wells**

There are currently five wells serving the City. The wells were installed in 1966, 1996, 2002, 2003, and 2008. Four of the wells (Wells 4, 5, 6, and 7) are located south of Highway 99E along the Willamette River. The fifth well (Well 8) is located along Peoria Road north of the City. Water from Wells 4 through 7 is chlorinated prior to being discharged into storage tanks. Water from Well 8 is chlorinated prior to being discharged into the water distribution system. The wells have an approximate capacity of 840 gpm. This water supply would serve a population of approximately 4,400 people.

Water from the City's wells does not meet secondary contaminant levels which are set for contaminants that do not have health effects, but can cause aesthetic problems. Currently the well water is not treated, but only disinfected. It has been determined that it would be more cost effective to treat water from the Willamette River than to treat the well water. Therefore, the City has obtained a water right permit to use water from the Willamette River with the intent to construct a raw water intake and surface water treatment facility in the future when funds are available. At that time the wells would be used as a backup water source.

#### **Storage**

The City has two water storage tanks located at the City shops near 2nd Street and Highway 99E. One tank is a 500,000 gallon steel tank which was constructed in 2000. The other tank is a 2,000,000 gallon concrete structure which was constructed in 1966. The total storage capacity of 2,500,000 gallons is capable of serving a population of 6,042 people. However, the 2,000,000 gallon tank does not meet the current seismic code requirements and is in need of replacement.

#### **Pump Station**

A pump station located near the storage tanks transfers water from the tanks into the distribution system. The pump station includes three pumps with 30, 40, and 60 hp motors and has a total capacity of 3,900 gpm at a discharge pressure of 48 psi.

#### **Distribution System**

The City's water distribution system consists of 2-inch through 14-inch pipe. Pipe materials include steel, PVC, transite, and ductile iron.

#### **Future Water Projects Titles**

- Water Intake and Water Treatment Plant – Located on east bank of Willamette River south of Harrisburg/Junction City bridge
- Replace Water Storage Tank – 790 S. 2<sup>nd</sup> Street
- Water Line Improvements identified in Harrisburg CIP – Located throughout City

## **WASTEWATER SYSTEM**

### **Collection System**

The City's wastewater collection system consists of approximately 59,000 feet of gravity sewers. The majority of the gravity sewers are 8-inch. There are some segments of 4-inch, 6-inch, 10-inch, 12-inch, and 16-inch sewers.

### **Raw Sewage Pump Stations**

There are five raw sewage pump stations in the City's wastewater collection system. One of the pump stations is a small package pump station with dual self priming pumps mounted adjacent to the wet well. Three other pump stations are small wet pit type pump stations with submersible pumps. The fifth pump station is the main pump station that pumps the City's entire wastewater flow to the wastewater treatment facility. The main pump station is a wet pit type pump station with dual submersible pumps. A 7,900-foot 10-inch pressure line conveys the wastewater from the main pump station to the wastewater treatment facility.

### **Treatment Facility**

The City's Wastewater treatment facility, located on Peoria Road just north of town, occupies 200 acres. The facility consists of two separate, but identical lagoon treatment systems. The first system was constructed in 1991, while the second system was constructed in 2004. Each system consists of a 9-acre primary facultative lagoon, a 4-acre secondary facultative lagoon, and a 1-acre submerged rock polishing pond. Effluent from the facility is disinfected in a chlorine contact chamber and discharged to the Willamette River from November through April and is irrigated on 63 acres of Poplar trees from May through October. The treatment facility was designed for an average dry weather flow of 0.516 million gallons per day(mgd) and an average wet weather flow of 1.110 mgd. It was designed to serve a total population of 6,000 people.

### **Future Wastewater Projects Titles**

- Additional Poplar Plantings – Located at 23914 Peoria Road

## **STORM DRAINAGE**

The City's storm drainage system has typically been designed for a 5-year storm intensity. During storm events of higher intensity, storm water has backed up in some areas of the City. However, there has been only minimal property damage due to the backed up water. Due to an unfavorable cost-benefit ratio, grants are not available to provide funds for storm drainage improvements. The City has been periodically making improvements to the system as local funds become available. As new development occurs, the City has been requiring that developers install storm water detention systems so as not to overload the City's existing storm drainage system.

### **Future Storm Drainage Project Titles**

- Kesling Street Trunk Sewer – Located on Kesling Street from west side of High School fields to Willamette River
- Southerly Perimeter Ditch – Located along the south boundary line of UGB
- Easterly Perimeter Ditch – Located along the east boundary line of UGB

## **SOLID WASTE DISPOSAL**

Collection of Harrisburg's solid waste is provided by Albany-Lebanon Sanitation Service. Albany-Lebanon hauls to the Coffin Butte Landfill in Corvallis, which is supported by Linn County/Benton County private hauler revenues.

## **EMERGENCY SERVICE**

Police. Harrisburg contracts with the Linn County Sheriff's Department for police services. Through this agreement, Harrisburg gets the services of four County deputies who are on duty in the City for about 70% of the time. At times, when no deputy is on duty in the City, a County deputy can respond from Halsey or Brownsville in case of emergency.

### **Fire and Medical Emergencies**

Fire. Harrisburg Fire/Rescue, a nationally recognized Fire District, protects approximately 100 square miles of Western Oregon's Willamette Valley, including the City of Harrisburg. Working out of one fire station, located at 500 Smith Street, the department's 20 volunteer firefighters answer approximately 450 calls a year, including fire, emergency, medical, water rescue and hazardous material.

All firefighters are trained to the State of Oregon level of Firefighter 1. Several firefighters are trained and certified as Emergency Medical Technician-Basic, with some having more advanced medical training.

The City of Harrisburg currently enjoys a fire insurance ISO rating of a Class 5, with a 1 being the highest rating, and a 10 meaning little or no fire protection.

The fire station was constructed in 1968. The facility includes seven apparatus bays, three offices, a combined kitchen/training room and restroom facilities. In 1991, a 2,500 square foot addition was built with donations and labor provided by the volunteer firefighters.

The District is funded by property taxes from the Harrisburg Fire/Rescue District. The City was annexed into the Rural Fire District on July 1, 1998 and hired a full time Fire Chief. The Harrisburg Fire/Rescue District Board of Directors provides directions for the Fire Department operations.

The Department has the apparatus necessary to provide emergency fire protection and medical assistance.

Ambulance service is provided by the cities of Eugene and Springfield Fire Departments. Response time for ambulance service is approximately 15 minutes.

## **HEALTH FACILITIES AND SERVICES**

Health facilities and services in the City of Harrisburg are minimal with no medical clinics and one dentist office. Additional Doctors and Dentists are available in nearby Junction City.

Certain types of other health services available in Harrisburg are provided by the Linn County Health Department (Conversation with County Health Nurse Supervisor Pat Crozier 4/6/99):

- 1) Immunization Services through the Schools
- 3) Fall Flu Clinics at the Senior Center
- 4) Babies First which provides home visits for new mothers
- 5) Maternity Case Management, which provides prenatal care and education for mothers to be.
- 6) Healthy Start which provides volunteer home visits to parents of first born children.
- 7) STARS (students today aren't ready for sex) program. County provides a local coordinator for program. High School students teach 6<sup>th</sup> grade students about the program.
- 8) Breast and Cervical Cancer Project provides free exams to uninsured women, usually over 40 years of age.

## CITY FACILITIES

City Hall. The City Hall includes offices for the city administrator, city recorder, community development superintendent, finance officer, and two utility clerks/receptionists.

Justice Center and Library. The Municipal Court and Justice Court occupy this building which also includes the Harrisburg Library and a sub-station for the Sheriff's Deputies. The courtroom is also used as an auditorium and occasional meeting room for the city council or planning commission.

Senior Center. The Senior Center provides a meeting place for senior citizens in the Harrisburg community. Facilities include a meeting room, kitchen, rest rooms, pool table and card tables. The City provides this room, some of its maintenance, and pays for its utilities. Cleaning maintenance is done by the senior citizens.

City Shops. The City currently has two shops. One is located at the South end of town adjacent to the two million-gallon tank, and the other is located on Peoria Road adjacent to the wastewater facility. Both facilities have storage areas to store city equipment.

## SCHOOLS

There is one elementary school in Harrisburg: Harrisburg Elementary School. It serves students from the City and an area outside the City.

Middle School and High School students are served by Harrisburg Middle School and Harrisburg High School, respectively. The high school district is a union high school district which includes the middle school and the elementary school district.

**Table 20. SCHOOLS SERVING THE HARRISBURG PLANNING AREA**

Facility	Enrollment	Capacity with Facility Change for Expansion
Harrisburg Elementary School, Grades K-5	386	495
Harrisburg Middle School,	199	450*



Grades 6-8		
Harrisburg High School, Grades 9-12	262	

\*Note: Capacity in the Middle and High schools is combined

Growth in school enrollment will primarily come from population growth in the City since the area outside the City is agricultural land and is not expected to experience much population growth.

## GOAL 12: TRANSPORTATION

Transportation is a topic of increasing concern because of the rising cost of gasoline and uncertainty about its future availability. Transportation information is documented in the *City's 1999 Transportation System Plan* and the *2004 Transportation System Plan Addendum*.

Major arterials handle traffic originating in other cities and from major highways, as well as local traffic. They handle large volumes of inter-area traffic. The major arterial in Harrisburg is Third Street (Highway 99E). It is the major thoroughfare in Harrisburg and, as one of the primary North-South routes in the Willamette Valley, it receives considerable through traffic as well as local traffic.

Minor arterials provide more access to land and offers a lower level of traffic volume and mobility than major arterials. However mobility is still the primary function of the street. The Minor arterials in Harrisburg are:

- 1) Peoria Road
- 2) 7th Street onto and including Diamond Hill
- 3) So. 6th Street from LaSalle to Priceboro

Collector Streets connect intra-area traffic to the arterial system. Collectors penetrate all areas of the city, gather traffic, and channel it to arterials. The Collector Streets in Harrisburg include:

- 1) Territorial from 2<sup>nd</sup> Street to Cramer Avenue
- 2) LaSalle from 2nd Street to Cramer
- 3) Priceboro from So. 6th to Cramer Avenue
- 4) Smith Street from 2nd Street to Cramer Avenue
- 5) 2nd Street from Sommerville Avenue to Territorial Road
- 6) 9th Street from Priceboro to Diamond Hill Drive
- 7) 10th Street from Diamond Hill Drive to Priceboro Road
- 8) Cramer Avenue from Diamond Hill Drive to Priceboro Road

Local Streets generally provide access to abutting properties and are not intended as primary through streets. Local streets are streets not designated as arterials or collectors.

### BIKE WAYS

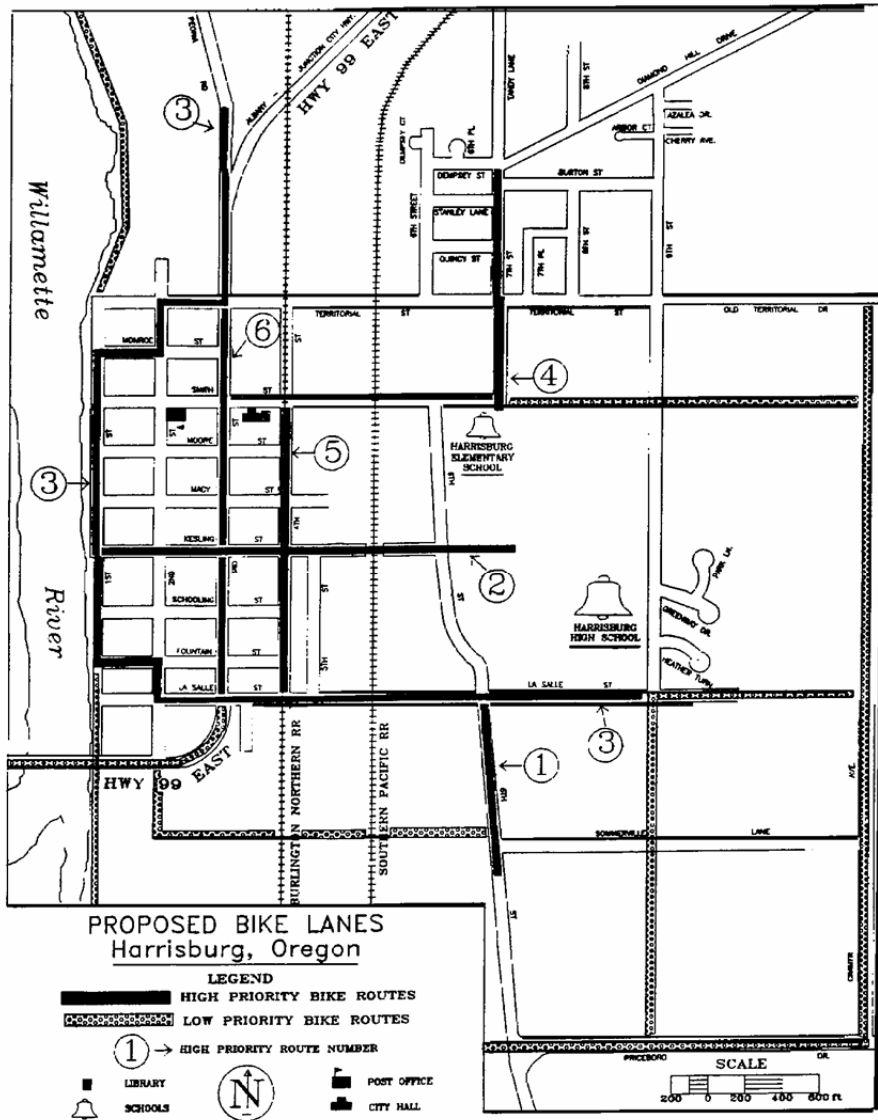
The use of bicycles as means of transportation and recreation has seen a tremendous increase in recent years. Bicycle and foot transportation are especially suited to small cities,

such as Harrisburg, because of the short distances within these cities from one place to another. Map 5 on the next page shows the high and low priority bike routes in Harrisburg.

Information pertaining to Bikeways within the Planning Area, are contained in the City's 1993 Master Bicycle Plan and the 2004 Transportation System Plan Addendum.

**Map 5. High and Low priority bike routes**

Map 5. High and Low Priority Bike Routes



## **GOAL 14: URBANIZATION**

LCDC GOAL #14 addresses the manner in which cities grow. The goal is: "To provide for an orderly and efficient transition from rural to urban land use." Orderly and efficient growth of a city generally occurs through logical, phased, outward expansion from the main previously developed area of a city. This type of growth is quite different from what is commonly referred to as "sprawl." Sprawl is created by strip development along highways and "leapfrogging" of close-in vacant land for outlying land, which can often be obtained at lower prices.

The development of a sprawled urban form creates many problems. One of these problems is the premature loss of agricultural land. Leap-frogged agricultural land is usually no longer suitable for agricultural use because of conflicts with urban uses. Another problem created by sprawl is brought about by the extension of urban services to outlying development. This requires untimely and illogical municipal expenditures through the misdirection of public funds without the support of a sound tax base for the greater demand on city services.

Properly managed growth is more likely to contribute to, rather than detract from, the economic well-being and livability of a community. Growth management can be accomplished in various ways. LCDC Goal #14 requires each city to establish an urban growth boundary (UGB) to separate urbanizable land from rural land. The establishment and change of UGB's must be based on several factors concerning the need and location of land chosen to accommodate future growth of a city. A UGB and a plan for unincorporated land within it must be established by mutual agreement of the city and county and must be adopted by both jurisdictions. In addition, the goal requires conversion of urban uses to be based on consideration of the following factors:

- 1) Orderly, economic provision for public facilities and services;
- 2) Availability of sufficient land for the various uses to insure choices in the market place;
- 3) LCDC goals; and
- 4) Encouragement of development, within urban areas before conversion of urbanizable areas. (LCDC, 1975)

Although Harrisburg is a small city, for the past several years it has been experiencing high growth rates, and is expecting this trend to continue into the future. As a result, the City must direct attention to the management of complicated growth problems.

### **ITEMS FOR CONSIDERATION IN DEVELOPING URBAN GROWTH BOUNDARY POLICIES AND AGREEMENTS**

#### **A. Intent of Urbanization Policies**

1. Separation of urban land from rural lands
2. Encourage urban growth inside the urban growth boundary(UGB); retain the character of land outside the UGB

3. Encourage an orderly and efficient transition from urbanizable rural to urban land.
4. Protect resource lands from conflicts with the urban land uses.
5. Comply with the provision of LCDC Goal 14.
  - a. Orderly, economic provision for public facilities and services.
  - b. Availability of sufficient land for the various uses to insure choices in the market place
  - c. Encouragement of development within urban areas before conversion of urbanizable areas.
6. Application of the city plan within the urban growth boundary, after review and approval by the county.
7. Establishment of guidelines for the provision of public facilities and services in coordination with land use control provisions and procedures.
8. Establishment of procedures for review of development activities within the urban growth boundary.

The following is a list of possible techniques for Urban Growth Management:

1. Relation of development to the provision of services, application of Capital Improvement Programming
2. Development phasing program.
3. Annexation policies.
4. Use of bonus or incentive techniques in zoning planned development; performance standards.
5. Resource zoning in relation to urban growth boundary - agriculture, forestry, greenway and the like.
6. Development limitation controls - i.e., steep slopes, flood plains, etc.
7. Environmental quality considerations, particularly land and water quality.
8. Use of moratoriums (usually temporary and related to inadequate utilities).
9. Employment and population targets.
10. Annual permit limits.
11. "Fair share" allocations on a regional basis.
12. Other.

#### Annexation: Possible Service Provision Concerns.

1. City as the provider of basic urban public services and facilities (water, sewer, drainage, police and fire protection, parks, urban streets).
2. Use of the city limits as the other boundary for urban services.
3. Basis for the extension of services outside the city.
4. Orderly annexation process.
5. Use of the delayed annexation technique.
6. Utility extension in case of health hazards.
7. Special Districts - limits on creation.
8. What services are applicable: water, sewer, storm drainage, fire protection, police protection, urban streets, curbs, gutters and sidewalks, parks, etc.
9. Delayed annexation agreement provisions: three party contracts; limits on county responsibility; services to be provided; development, maintenance to city standards and under city supervision; review process; inspections; etc.

#### Utility Extension and Phases Development Concerns:

1. Urban development only where services are available.
2. Expansion of services as a method of controlling and directing growth.
3. Development phasing program to establish priorities, timing and sequencing for urban development.
4. Utility extensions based on financial capacity to provide services.
5. Service extension in conformance with the plan.
6. Drainage basins (or some other logical unit) as planning area for service extension.
7. Expansion in urban areas, before urbanizable ones.
8. Orderly outward annexation process.
9. Extension outside urban growth boundaries in case of health hazard.
10. Services sized to serve only urban growth boundary area.
11. Services sized to maximum density called for in plan.

## Coordinated Land Use Control System:

1. Development in a manner to assure:
  - a. Re-division of oversize lots when services are made available.
  - b. Extension of appropriate streets and assurance of a logical street pattern.
  - c. Full use of public facilities.
  - d. General plan for an entire parcel when a portion is slated for subdivision.
  - e. Division of properties to urban densities as outlined in the comprehensive plan.
  - f. Extension of appropriate urban services to assure a logical pattern of these services.
2. Joint approval of comprehensive plan, amendments, or refinements (sub- area or functional plans)
3. County-City agreements as to application of zoning standards in the urban growth boundary
4. County with zoning controls, but with City review (or approval) or zone changes in urban growth boundary.
5. Coordinated subdivision standards - design, improvements, procedures.
6. Coordinated zoning standards - zones, uses, dimensions, other standards, procedures.
7. Complementary road standards - to convert from rural to urban.
8. In urban growth boundary, City review of county rezones, conditional uses, planned developments, subdivisions, major public improvements projects.
9. In urban growth boundary, county review of City major public improvement projects; annexations.
10. City review and comment in planning area outside urban growth boundary-plan amendments, rezones, subdivisions, public utility districts.
11. Encourage planned unit development, performance zoning, or other incentive zoning techniques as urban growth boundary buffers.
12. Coordinated capital improvement programming.
13. Review process considering notification, type of comments, resolutions of differences.
14. Relation to existing school districts, special districts, utility agencies.

Amendment Procedures:

1. Periodic review and, if necessary, amendment of comprehensive plan, urban growth boundary, urbanization policies.
2. Review and amendment of above, based on need.
3. Monitoring system to assess needs for change to urban growth boundary, etc.
4. Process for review and action on amendments.
5. Amendments to agreements.
6. Termination of agreements.



# GOAL 15: WILLAMETTE GREENWAY

## BACKGROUND INFORMATION

The Greenway encompasses lands of varying widths adjacent to the Willamette River from the Dexter Dam and Cottage Grove Reservoir in the South, to the Columbia River in the North, and includes the Multnomah Channel. The 1967 and 1973 State Legislatures acted to establish the Willamette River Greenway and set policies for its implementation. The purpose of the Greenway is to protect, preserve, enhance and maintain the natural, scenic, historical, agricultural, economic and recreational qualities of lands along the Willamette River.

The Greenway Statute (1973) originally directed the Oregon Department of Transportation (ODOT) to prepare a management plan for the Greenway in cooperation with local governments. The 1973 Legislature delegated the responsibility to the Land Conservation and Development Department (LCDC) to review and revise, if necessary, the plan prepared by ODOT. In addition, Senate Bill 100 requires all state agency plans to be consistent with the state-wide land use planning goals and local comprehensive plans. Since 1990 management of the Greenway has been vested with Oregon's State Parks and Recreation Department. ORS 390.314(2)(d).

In 1975, LCDC adopted a two step process to implement the Greenway Program consisting of: 1) the Greenway Preliminary Order, and, 2) Goal #15, the Willamette River Greenway Land Use Planning Goal.

The Preliminary Order required local governments to:

- Develop final Greenway boundaries within their jurisdictions in cooperation with ODOT;
- Consider issuance of conditional use permits and grant Greenway Extraordinary Exceptions where necessary;
- Incorporate the Greenway Plan in cooperation with ODOT into the local comprehensive plan and ordinances in compliance with the State-wide Willamette Greenway Land Use Planning Goal.

The LCDC Willamette Greenway Goal establishes the process for ongoing management of the Greenway. The long term management program requires local government to:

- Refine and update the Greenway Plan as necessary.
- Provide for the management and acquisition (if necessary) through local comprehensive plans; and,
- Cooperate with ODOT in its administration of the Greenway through the State Parks and Recreation Branch. (LCDC, 1975)

Implications for Harrisburg. Goal 15 of the LCDC Goals and Guidelines requires each city and county located in the Willamette River Greenway to incorporate its respective portions of the ODOT Greenway Plan in its comprehensive plan and implementing ordinances. This

goal requires comprehensive plans to be based on certain management considerations. The goal requires provisions for the following:

1. agricultural lands;
2. recreation;
3. access;
4. fish and wildlife habitat;
5. scenic qualities and views;
6. protection and safety;
7. vegetative fringe;
8. timber resource;
9. aggregate extraction;
10. development; and
11. Greenway setback.

Cities and counties must also establish ordinance provisions for the review of intensifications, changes of use, and developments that will insure compatibility with the Willamette River Greenway. These provisions must include the following:

1. Establishment of Greenway compatibility review boundaries that are not less than 150 feet from the ordinary water line within which review of developments shall take place;
2. Requirement to review intensifications, changes of use, and developments which insure to the greatest possible degree that:
  - a. The intensification, change of use or development will provide the maximum possible landscaped area, open space, or vegetation between the activity and the river;
  - b. Necessary public access will be provided to and along the river by appropriate means;
3. Requirements for a public hearing on each application and notification of the hearing to owners of contiguous property; and
4. A means of imposing conditions on the permit to carry out the purpose and intent of the Greenway. (LCDC, 1975)

Goal 15 also provides an alternative to the review process: Harrisburg may prepare and adopt a design plan and review procedure which must be compatible with the Greenway. If a design plan is adopted, a hearing will not be required on each application.

## INVENTORIES

Goal 15 of the Statewide Goals and Guidelines requires information to be collected "to determine the nature and extent of the resources, uses, and rights associated directly with the Willamette River Greenway." This information is presented in the following inventories. The study area for the Harrisburg Greenway inventories includes the area between the Willamette River and the proposed ODOT Greenway boundary within Harrisburg's Planning Area. (see Map 1). This information will be useful in developing a Greenway management plan for Harrisburg.

Agricultural Land. Lands with soils in the S.C.S. capability classes I through IV are considered agricultural lands (see section on soils). Most of the land adjacent to the river in Harrisburg falls within this I through IV category (Map 3). These soils include Amity silty clay loam (11), Holcolm silt loam (III), and Dayton silt loam (IV). The remaining land has a variety of soils which are referred to as alluvial land and fall into SCS capacity class VIII. (SCS, 1975)

There are currently no agricultural uses in the Greenway area within the City. There is a small area being cultivated North of the City.

Aggregate Excavation and Processing Sites. There was a sand and gravel extraction site within the Northwest portion of the Harrisburg Urban Growth Boundary, owned and operated by Knife River. Extraction from this site has permanently ceased due to a decrease in the amount of economically removable aggregate. Knife River also owns an active aggregate extraction operation located outside of, but adjacent to, the Southwest portion of the Urban Growth Boundary. Extraction at this site is expected to continue for another five years or so. Knife River has entered into an agreement to sell approximately 100 acres of this property to the City of Harrisburg for a park. It is expected that the City will become the owner of the property in 2014, and that Knife River will be allowed to continue extracting aggregate on the property until the extracting is completed. No significant aggregate resource sites exist within the Harrisburg Urban Growth Boundary.

## RECREATION.

Existing Sites and facilities. Recreational information is documented in the City's 1996 Master Park and Recreation Plan.

Historic and Archeological Sites. No historical and/or archeological sites have been designated within the Greenway boundary by the State Advisory Committee on Historic Preservation or the Linn County Historical Society. Local citizen input indicates that the most significant site in the area is the old Willamette River Ferry crossing which existed from approximately 1885 to the 1920's. Citizen's have suggested that a plaque commemorating the once important crossing site be placed at the location.

There is no record of archeological exploration occurring in the area. It is possible that stream erosion may have destroyed any archeological evidence that may have been in the study area.

Timber Resources. Riparian (related to the bank of a natural watercourse) vegetation contributes important scenic qualities to the River, helps stabilize the bank, and provides wildlife habitat.

The most prevalent tree species on the river bank is the black cottonwood, though this species is currently dying out along the Willamette River due to lack of natural flooding which historically supplied the required river soil for seed propagation. State-wide efforts are currently underway to discover how best to reestablish the Black Cottonwood to their historic range along the Willamette River. To the North there is a strip of trees that stretches along the river and continues south to the boat ramp. There is a narrow strip of trees South of the Bridge that continues to the Southern edge of the Planning Area. A larger area of trees (about 27 acres) is located East of the slough, which is near the Southern City boundary. This area is outside of the City, but some of it will become city property once the park land purchase is completed by the City from Knife River.

Fish and Wildlife. The Willamette River and its Greenway, provide important habitat within the study area for several species of fish and wildlife. An important anadromous fish spawning area exists near the Southern boundary of Harrisburg. Important River and streambed conditions occur at this location for redds (redds refer to fish spawning grounds).

Slough areas downstream from the spawning beds provide an ideal feeding location for the young fish which have remained in fresh water before beginning their journey to sea. The sloughs also provide ideal habitat for warm water fish species. Important waterfowl habitat is also provided where there is vegetation on the banks of the river and the sloughs.

Protection Plans for the newly listed Salmon species will impact development and land use decisions in the Planning Area.

The vegetative cover areas furnish cover and forage for many resident and migratory species of wildlife. Some of the most common species include deer, beaver, and various waterfowl species. (Dept of Fish and Wildlife, 1973) Bald Eagles nest in the area and are frequently sighted within the Planning Area. River otters have been observed frequenting the sloughs.

Significant Scenic and Natural Areas. There is a wealth of scenic views and sites in the study area. Areas that provide attractive scenery are primarily associated with riparian vegetation. Scenic views of the River and the opposite bank are available from many points of the bank in Harrisburg. These views, and the fact that they are easily accessible are an important asset to Harrisburg.

Significant natural features include the riparian vegetation, slough areas, and the anadromous fish spawning areas. Streamside vegetation provides erosion control, a buffer zone between the water and riparian land use, wildlife habitat and stream temperature control. Slough areas provide shelter for migratory waterfowl, warm-water fish species habitat, and feeding areas for the fry of anadromous fish. The retention of these features is important therefore, to the scenic attractiveness of the area and, of greater significance, to the maintenance of an environment conducive to fish and wildlife.

Areas of Annual Flooding and Flood Plains. Harrisburg is located on an elevated portion of former Willamette River flood plain. With the increased number of upstream flood control projects, future serious flooding of the city is not very probable. As indicated by the flood plain map, (see Map 4), only a small part of Harrisburg is within the 100-year flood plain. A large part of the Greenway area outside of the City limits is within the 100-year flood plain. Land uses in this area are aggregate extraction, agriculture, and vacant land.

Land Currently Committed to Industrial, Commercial, and Residential. Information on existing land use is documented in the City's *Urbanization Study* (June 2013).

Hydrological Conditions. The hydrology of this section of the Willamette River is affected by conditions of a larger system called the Willamette River Basin, which includes all of the lands that drain into the Willamette River and its tributaries. This Basin encompasses about 12,000 square miles and includes lands in the Coast Range, Cascade Range, and the Willamette Valley. A full discussion about the entire basin is beyond the scope of this report, which will primarily discuss specific conditions near Harrisburg.

The gradient of the Willamette River near Harrisburg is about 5 feet per mile. River water passing Harrisburg is draining from about 3,400 square miles. Mean discharge for an entire year is about 12,000 cubic feet per second (cfs). Maximum discharge, occurring during the winter, averages about 63,000 cfs; minimum discharge, occurring in summer, averages about 5,000 cfs. The flow is regulated by 8 reservoirs upstream. (USGS, 1970)

Meandering of the Willamette River and high stream flow volume produces stream-bank erosion problems, which are severe in this area (see Natural Hazards section). The U.S. Army Corps of Engineers has placed rip rap from Territorial Street to just South of the Highway 99E bridge and this has helped alleviate the problem for that area.

Problems exist in other areas of the City, however, as exemplified by a past occurrence which is a concern to the City. Morse Brothers, the predecessor to Knife River, was required by order of the Corps of Engineers to remove a revetment constructed of reject pre-stress beams and excess concrete from mixer trucks. This allowed River channel change resulting, thus far, in river erosion removal of several acres of Morse Brothers' land as well as adjacent agricultural land. That area, located adjacent to the downstream slough, will continue to be eroded unless some form of bank stabilization is implemented.

The City's Sewage Lagoon Property North of the Planning Area is also severely impacted by stream bank erosion, and stabilization efforts will be required to prevent further erosion.

Ecologically Fragile Areas. The areas, which could be classed as ecologically fragile, include the previously mentioned slough areas and their adjacent vegetation and fish spawning area. The fish spawning area is, of course, subject to modification by hydrologic activity. At present, no man-related changes have affected this spawning area.

The Oregon Fish and Wildlife Department has sought the cooperation of Morse Bros., Inc., owners of the land adjoining the slough areas, in retention of the integrity of these areas prior to, during and after aggregate extraction and processing activity. To date, the company has been cooperating with the Department in this endeavor.

Other Uses. Other uses in the Greenway include some City shops in the Southern part of Harrisburg. There are also several city streets and the Highway 99E bridge. River use, other than recreational, includes dilution and transport of the treated wastes from Harrisburg's sewage lagoon.

## **THE GREENWAY BOUNDARY IN HARRISBURG**

The Department of Transportation recommendation for a Greenway boundary met with considerable opposition from the citizens of Harrisburg, especially those owning property

within the recommended boundary, when the boundary was proposed in 1976. However, after considerable meetings a boundary was approved by the City and LCDC.