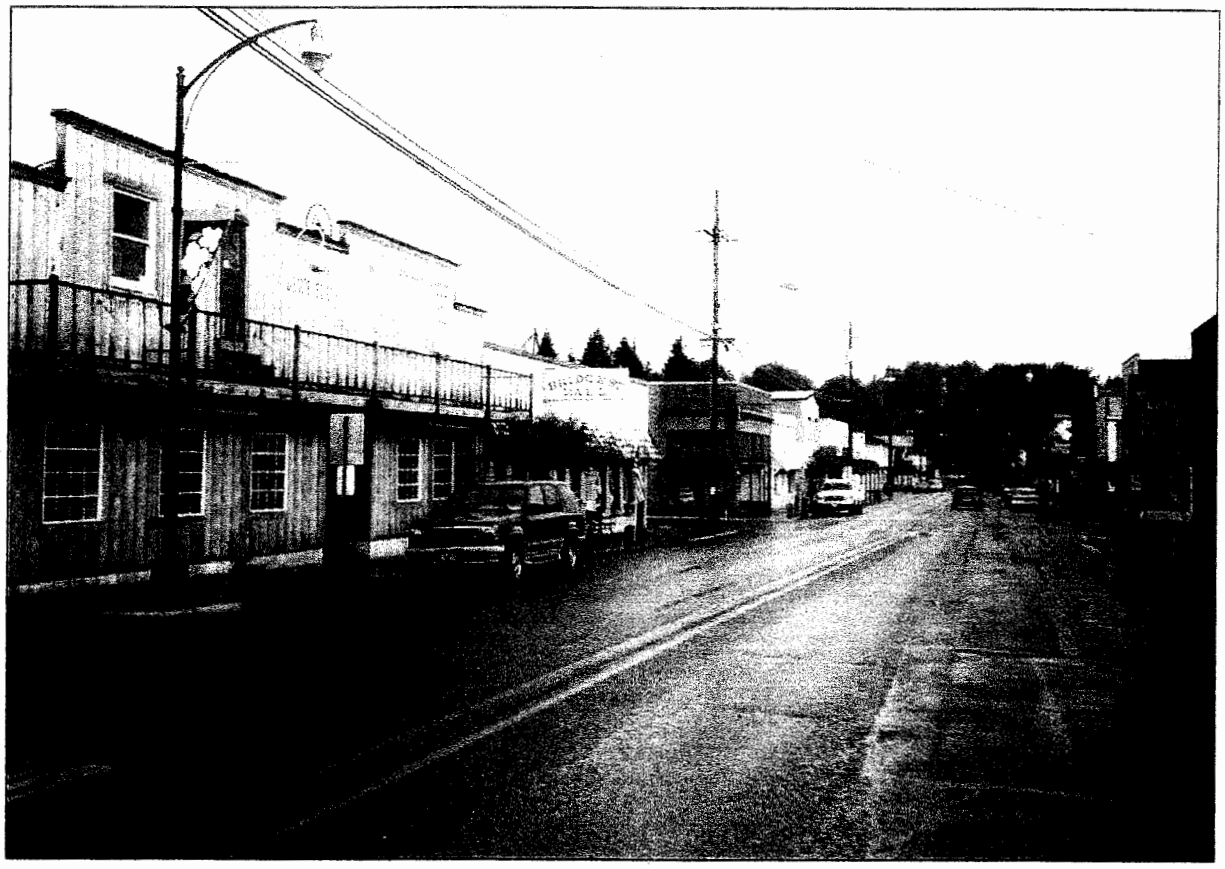
City of Vernonia

Transportation System Plan

July 1999



KCM
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

July 1999

Prepared for:
City of Vernonia
919 Bridge Street
Vernonia, Oregon 97064

and
Oregon Department of Transportation
Region 1
TGM Program

Prepared by:

KCM

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223
(503) 684-9097

Project #28670002

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development.
This TGM grant is financed, in part, by federal Intermodal Surface Transportation Efficiency Act, local government, and State of Oregon funds

City of Vernonia
Transportation System Plan
TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

This Transportation System Plan (TSP) identifies deficiencies of the City of Vernonia's existing transportation system, assesses current and future demands on the system, and outlines a coordinated network of transportation facilities to meet these needs. The proposed transportation system meets the requirements of Oregon's Transportation Planning Rule (TPR) and addresses the needs and concerns of those who live in the study area and use the system. This TSP considers all modes of transportation: motor vehicles, bicycles, pedestrians, air, rail, water and pipeline.

A detailed roadway inventory was completed as part of the TSP study. The inventory indicated that many streets in Vernonia have inadequate pavement width to provide for all required functions. Highway 47 is in need of widening in several locations, as are several of the City's collectors. The pavement condition of most of the City's arterials and collectors is fair or worse. Local roads are also in need of improvements, with many segments in need of paving. Recommendations are made to bring these roads up to acceptable standards.

The review of existing conditions also revealed several safety concerns. Many of these stem from high speeds and lack of sight distance or poorly designed intersections. Some hazards can be removed with modest, low cost projects; others require more detailed solutions.

A level-of-service (LOS) analysis was conducted to determine existing traffic conditions at 10 key intersections. All were found to currently operate at acceptable levels of service; no intersection experiences an average stopped delay longer than 10 seconds.

The TSP also addresses the lack of connectivity across the City. The state highway is the main connector for the whole City. Collectors and local streets that tie into Highway 47 do not provide a complete grid. Much of this lack of connectivity is due to the topographical features of the City. Bodies of water, hills and bluffs inhibit connections between some streets. Most of the connections that were evaluated were cost prohibitive, but it is recommended that Louisiana be developed to provide another north-south connection and that Clatsop be connected to Weed across Railroad Grade to provide an east-west alternative to Highway 47.

Vernonia is expected to grow by about 1,200 residential dwelling units and about 600,000 square feet of commercial/industrial development over the next 20 years. This translates to about 17,400 additional vehicle trips per day on the City's roads. Traffic projections through 2018 predict nearly 15,000 average daily trips along Highway 47 in the downtown area. This traffic level can be accommodated with the current two through lanes on Highway 47. A left turn lane at State Street will be required to maintain an adequate level of service; a traffic signal may be warranted. A traffic signal will be needed at the Bridge Street/Rose Avenue intersection, along with other intersection improvements.

In keeping with the City's goal of encouraging alternative modes of transportation, this TSP identifies several improvements for the bicycle and pedestrian systems. The first major improvement is the development of street design standards and recommended upgrades throughout the study area. Five-foot bike lanes are included in the standard for rural

arterials, and sidewalks are included under all urban standards and the rural collector standard. Extensions of the Banks-Vernonia Linear Trail are recommended, and several improvements are included to make the street network safer for cyclists and pedestrians.

Three overall transportation improvement alternatives were evaluated based on the goals of the TSP. The recommended alternative includes road design standards, a functional classification system, and projects to achieve several key purposes:

- To bring the roads up to design standards
- To improve surface conditions where needed
- To provide cost efficient safety improvements
- To maintain an acceptable level of service by the end of the planning period
- To improve connectivity to provide greater mobility for motor vehicles and alternative modes of transportation.

The estimated total cost of the recommended improvements is $4.4 million. Elements of implementing this plan include funding options and recommendations for amending the City's comprehensive plan, zoning ordinance, and subdivision ordinance.

CHAPTER 1.
INTRODUCTION

This Transportation System Plan (TSP) assesses current and future demands on the City of Vernonia's transportation system and outlines a plan for developing a coordinated network of facilities to meet these demands. The transportation system that is developed must meet the requirements of Oregon's Transportation Planning Rule (TPR) and consider the desires and concerns of those who live in the study area and use the system daily. The TSP considers all modes of transportation for people and goods—motor vehicles, bicycles, pedestrians, air, rail, water and pipeline.

STUDY AREA

The City of Vernonia is a small community on the eastern edge of the Nehalem River Valley in northwest Oregon, approximately 46 miles from Portland (see Figure 1-1). The current population is approximately 2,350. The local economy has traditionally depended on the timber industry. However, with growth in the Portland metropolitan area, the City of Vernonia will likely become more of a bedroom community for people working in Portland, Beaverton, and Hillsboro.

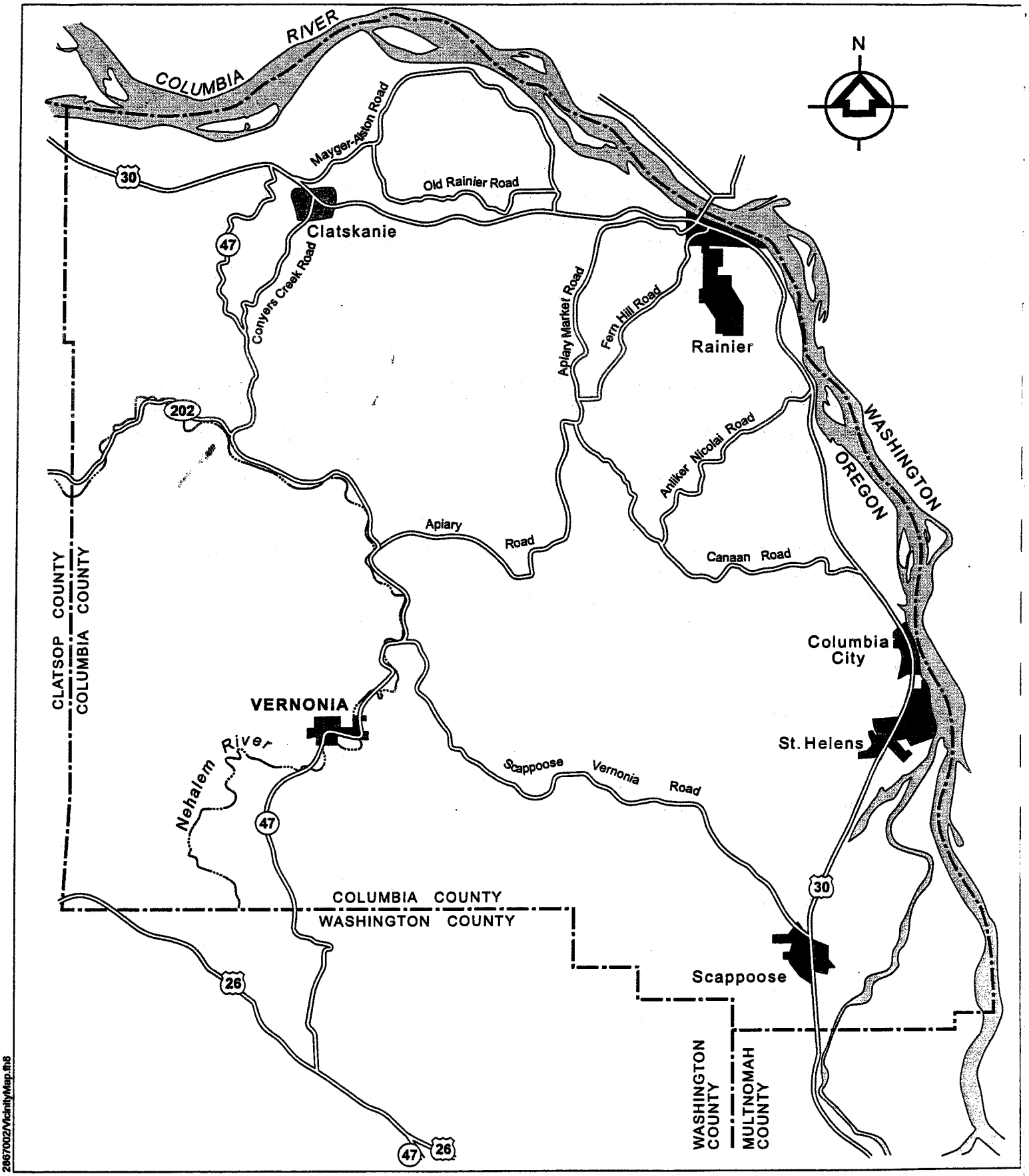
The study area for the TSP includes the region within the City's urban growth boundary (UGB; see Figure 1-2). The Vernonia municipal airport also was assessed, even though it is outside the study area. The topography of the area includes several bodies of water, hills, and bluffs. Some of the area is within a floodplain. These topographical features present challenges to developing a well connected transportation system and to providing adequate roadway widths.

PUBLIC INVOLVEMENT

This TSP will direct the future of transportation in the City of Vernonia, and public involvement and acceptance are crucial to its success. The public was involved in development of this document in two ways—participation on an advisory committee and attendance at public meetings. Agendas and minutes of public involvement meetings are included in Appendix A.

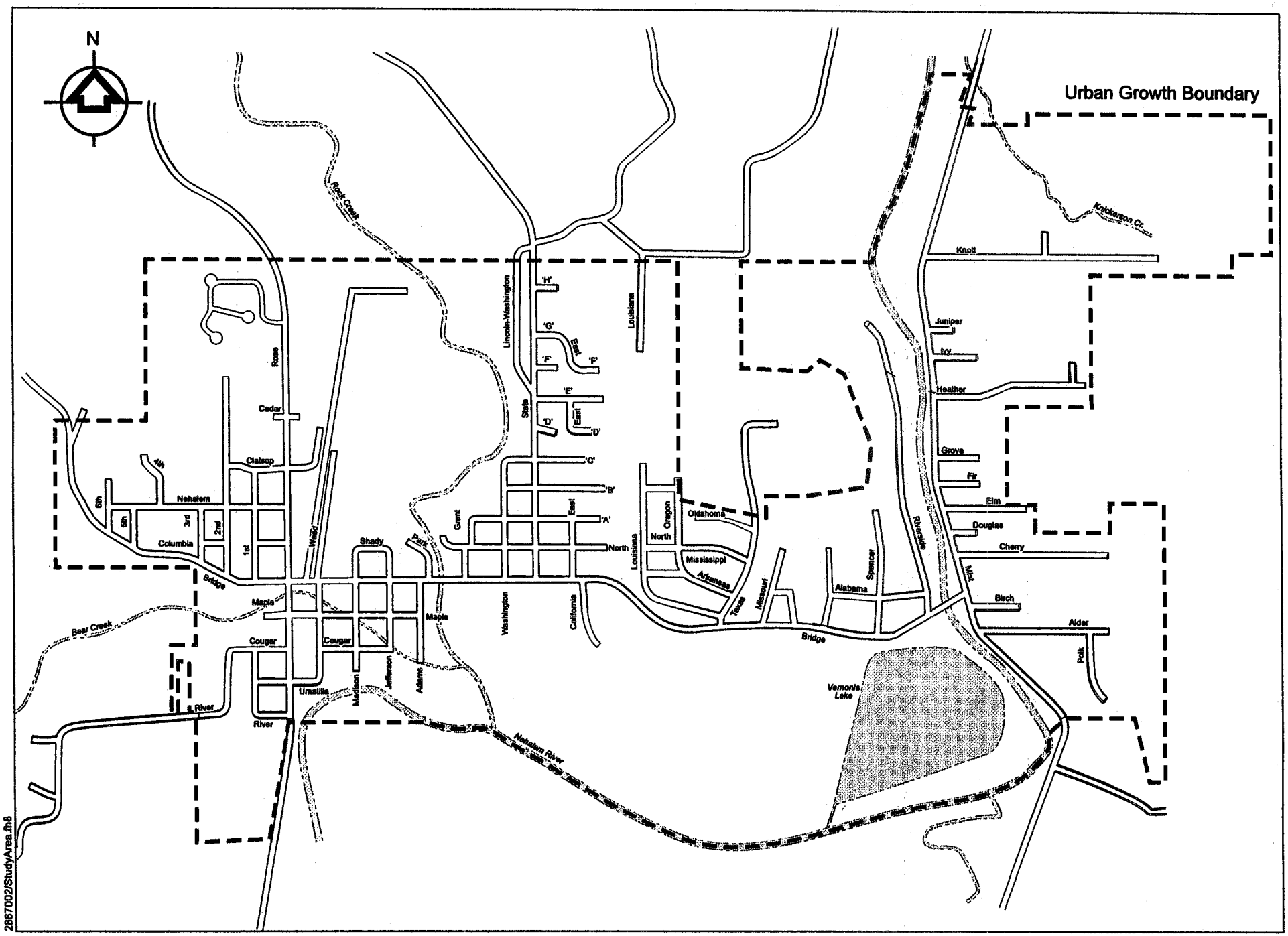
Citizens Advisory Committee

The Citizen Advisory Committee consists of representatives from the Planning Commission, the Parks Commission, and City staff. The primary role of the citizen advisory committee was to review and comment on development of the TSP. The process of preparing the TSP included three meetings of the advisory committee.



2867002/VicinityMap.fh8

KCM 7080 SW Fir Loop Portland, Oregon 97223	City of Vernonia TRANSPORTATION SYSTEM PLAN	Figure 1-1. PROJECT VICINITY



KCM 7080 SW Fir Loop Portland, Oregon 97223	City of Vernonia TRANSPORTATION SYSTEM PLAN	Figure 1-2. STUDY AREA

2867002/StudyArea.fh8

Public Meetings

The general public had two opportunities to provide input into the development of the TSP. An open house was held to review and receive input on the draft of the TSP. Prior to adoption of the TSP by the City Council, comments will be solicited at a public hearing. This public involvement plan is in accordance with the requirements of the TPR.

GOALS AND POLICIES

The establishment of goals and policies is an important step in the development of a TSP. Goals and polices guide and direct development of the plan in a way that is consistent with county policies and the state TPR. They also reflect the concerns and interests of the community and give priority to the variety of competing interests. The following goals were developed and used by the project team and advisory committee:

- Goal 1: Approval Process and Coordination—Develop a coordinated process for the Transportation System Plan.
- Goal 2: Operation and Safety—Preserve and improve the function, capacity, level of service and safety of the roadway system.
- Goal 3: Transportation Alternatives—Support the use of other modes of transportation (bicycles, pedestrians, equestrians, and transit) through effective transportation improvements.
- Goal 4: Air Transportation—Support efforts to maintain and investigate expansion of the airport facilities.
- Goal 5: Finance—Use a sound fiscal approach to financing transportation system improvements.

A complete list of goals and policies is included in Appendix B.

ORGANIZATION OF THE REPORT

Chapter 2 of this document describes the current condition of the study area transportation network. It provides information relevant to street capacity and function, including roadway condition and width. It also inventories bicycle and pedestrian facilities, public transportation services, and regional transportation services, including air, rail, water and pipeline.

Chapter 3 describes future conditions expected after a 20-year period. The impact of additional vehicles is described in terms of the level of service on major roadways and at intersections. The effect of growth on bicycle and pedestrian facilities, on public transportation and regional transportation is also described in this chapter.

Alternative transportation systems are described in Chapter 4. These alternatives, developed by project staff working with the public and advisory committees, are evaluated based on the goals of the plan. A preferred alternative is identified. Chapter 5 addresses pavement management.

The final part of the document focuses on implementation. Chapter 6 is the Transportation System Plan. This chapter summarizes the preferred future transportation system and the steps needed to achieve it. Chapter 7 lists financial options for achieving the plan's goals, and Chapter 8 describes required land use planning modifications. Chapter 9 describes the requirements of the Transportation Planning Rule and how this document complies.

CHAPTER 2.
EXISTING CONDITIONS

The existing conditions of a transportation system have to be assessed to identify deficiencies and areas where improvements are needed. This section describes the existing conditions of the transportation network within the Vernonia UGB.

FUNCTIONAL CLASSIFICATION

The functional classification of a roadway identifies the kind of service it is intended to provide. The functional class generally identifies the type of travel a road is used for and how many vehicles it carries.

Vernonia currently has no formal roadway classification system. The primary roadway providing access to and through the City is Oregon Highway 47, the Nehalem Highway. The Oregon Department of Transportation classifies Highway 47 as a "highway of district importance."

A system of classification for City streets is proposed as part of this TSP. The classification system was used in the analysis of future conditions. Three classifications are proposed: arterial, collector, and local street. Arterials provide access between areas of a city and between cities. They are generally designed for high speed travel and should have minimum interference from through movement. Collectors provide access and traffic circulation within residential neighborhoods and the central business district. Travel distances are typically shorter than on arterials, and more moderate speeds are characteristic. Local roads provide access to land adjacent to the collector network and serve travel of short distances. The proposed classifications for Vernonia are as follows (see Figure 2-1):

- Arterials—In the study area, Highway 47 is an arterial roadway. It is the primary roadway providing access to and through the city. Highway 47 has several different names within the city limits. The designation of arterial applies on Rose Avenue from the south city limits to Bridge Street, on Bridge Street from Rose Avenue to Mist, and on Mist from Bridge Street to the north city limit.
- Collectors—The following streets are designated as collectors: State Avenue from Bridge to the north city limit, River/Cougar/2nd Street, Rose north of Bridge Street, Louisiana, Nehalem and Knott.
- Local Streets—All other roadways in Vernonia are classified as local streets.

ROADWAY CONDITION

A detailed inventory of roadway width and surface condition was completed for the TSP. Every roadway in the study area was included in this review. Roadway width findings are described below. Surface condition is addressed in Chapter 5.

Roadway width is an important characteristic of arterials and collectors because it reflects the road's ability to handle expected traffic. Inadequate roadway width can cause difficulties for large vehicles, bicyclists and pedestrians. Roads that are too wide often encourage high travel speeds, requiring high levels of traffic enforcement or the use of traffic calming measures.

To prepare the roadway inventory, the paved width of each roadway in the study area was visually approximated and recorded. The results are shown on Figure 2-2. Table 2-1 compares the range of pavement widths recorded to recommended street standards for all roadway classifications in the City. The standards were modeled based on *Model Ordinances to Implement the Transportation Planning Rule* (prepared by David Evans & Associates Inc. and underwritten by ODOT).

TABLE 2-1.
OBSERVED ROADWAY WIDTHS
COMPARED TO PROPOSED DESIGN STANDARDS

Functional Classification	Pavement Width (feet)	
	Design Standard	Observed
Arterial	34-38	22-36
Collector	26-36	14-40
Local	18-28	8-40

STATE HIGHWAY ACCESS CONDITIONS

Section 60-12-045(2) of the TPR requires that jurisdictions protect future operation of transportation corridors. The intent of this section is to protect roadways from incompatible land uses and preserve the corridors primarily for the movement of goods and services.

Highway 47 is the only arterial in the study area. It begins in the southwest as Rose Avenue, turns east, becoming Bridge Street, and finally heads north as N. Mist Drive. An inventory was conducted to identify the number of access points along the highway, as listed in Table 2-2. An access point is defined as a driveway or private road that connects directly to the state facility.

Many driveways access Highway 47 directly. This lowers the overall highway capacity and creates conflict points where accidents can occur. Roadway design and development standards that encourage access on side streets and consolidation of entrances can help preserve the corridor and maximize capacity.

TRAFFIC SAFETY

The traditional traffic engineering approach is to improve areas with the highest accident rates first. A proactive approach is to review facilities and correct deficiencies that might contribute to accidents first. Safety issues were identified by reviewing existing geometric deficiencies and receiving input from citizens on their observations of accidents and near accidents.

LEGEND

- Arterial Rural Standard
- Collector Rural Standard
- Local Street Rural Standard
- Arterial Urban Standard
- Collector Urban Standard
- Local Street Urban Standard
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- Urban Growth Boundary
- Major Park
- School

N

Rock Creek
Knickerson Cr.
Roseview Heights (Private)
Roseview
Fairway (Private)
Railroad Grade (Private)
Rose
Cedar
Clatsop
Nehalem
4th
6th
5th
3rd
2nd
1st
Columbia
Bridge
Weed
Hawkins Park
Shady
Park
Grant
Lincoln-Washington
'H'
'G'
East
'F'
'E'
'D'
'C'
'B'
'A'
North
Louisiana
Oregon
Oklahoma
Mississippi
Arkansas
Texas
Missouri
Spencer Park
Riverside
Spencer
Alabama
Locker (Private)
Bridge
Knott
Juniper
Ivy
Heather
Grove
Fir
Elm
Douglas
Cherry
Mist
Birch
Alder
Polk
Maple
Bear Creek
Cougar
Madison
Jefferson
Adams
Washington
California
PROPOSED NEW BRIDGE
(Private)
(Private)
Umatilla
Anderson Park
Noakes
River
Nehalem River
Vernonia Lake

2867002/Classification.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORATION SYSTEM PLAN

Figure 2-1
ROADWAY FUNCTIONAL CLASSIFICATIONS

LEGEND

- Paved Street
- Gravel Street
- Street Outside the UGB
- Sidewalk
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- 12'/2 Street Width (feet)/Condition Rating (1=poor; 5=good)
- 3 Sidewalk Condition Rating (1=poor; 5=good)
- Urban Growth Boundary
- Major Park
- School

N

Rock Creek
Roseview Heights (Private)
Roseview
Rose
Fairway (Private)
Railroad Grade (Private)
Cedar
Clatsop
Nehalem
4th
6th
5th
3rd
2nd
1st
Columbia
Bridge
Weed
Hawkins Park
Shady
Park
Grant
Maple
Bear Creek
Cougar
River
Umatilla
Madison
Jefferson
Adams
Washington
Anderson Park
PROPOSED NEW BRIDGE
(Private)
Lincoln-Washington
State
'A'
'B'
'C'
'D'
'E'
'F'
'G'
'H'
East
North
Louisiana
Oregon
Oklahoma
Mississippi
Arkansas
North
Texas
Missouri
California
(Private)
Spencer Park
Locker (Private)
Bridge
Alabama
Spencer
Riverside
Knickerson Cr.
Knott
Juniper
Ivy
Heather
Grove
Fir
Elm
Douglas
Cherry
Mist
Birch
Alder
Polk
Vernonia Lake
Nehalem River

Note: Pedestrian and bicycle facility deficiencies are indicated by lack of sidewalks or bike paths where called for by roadway classification standards

2867002/Condition.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 2-2
STREET AND SIDEWALK INVENTORY

LEGEND

- Location of Safety Problem
- Paved Street
- Gravel Street
- Street Outside the UGB
- Sidewalk
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- Urban Growth Boundary
- Major Park
- School

N

Sight Distance

Sight Distance

Sight Distance; Vehicle/Bicycle/Pedestrian Conflicts (at Park/Bridge intersection)

Vehicle/Bicycle/Pedestrian Conflicts (on Bridge St. from Rose to Rock Creek)

Sight Distance; School U-Turns

School Safety

Channelization; Confusing Signing/ Signal/Striping

Sight Distance; Speeding

Alley Traffic Conflicts (in O-A Hill area)

Channelization

Vehicle/Bicycle/Pedestrian Conflicts

Sight Distance

Channelization

Vehicle/Bicycle/Pedestrian Conflicts (on bridge)

PROPOSED NEW BRIDGE (Private)

Rock Creek

Knickerson Cr.

Bear Creek

Nehalem River

Roseview Heights (Private)

Roseview

Fairway (Private)

Railroad Grade (Private)

Rose

Cedar

Clatsop

4th

6th

5th

3rd

2nd

1st

Columbia

Bridge

Maple

Cougar

Umatilla

River

Noakes

Hawkins Park

Shady

Park

Grant

Lincoln-Washington

'H'

'G'

'F'

'E'

'D'

'C'

'B'

'A'

East

State

Louisiana

Washington

Adams

Jefferson

Madison

Anderson Park

California

Texas

Missouri

Spencer Park

Locker (Private)

Alabama

Spencer

Riverside

Knott

Juniper

Ivy

Heather

Grove

Fir

Elm

Douglas

Cherry

Mist

Birch

Alder

Polk

2867002/Safety.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

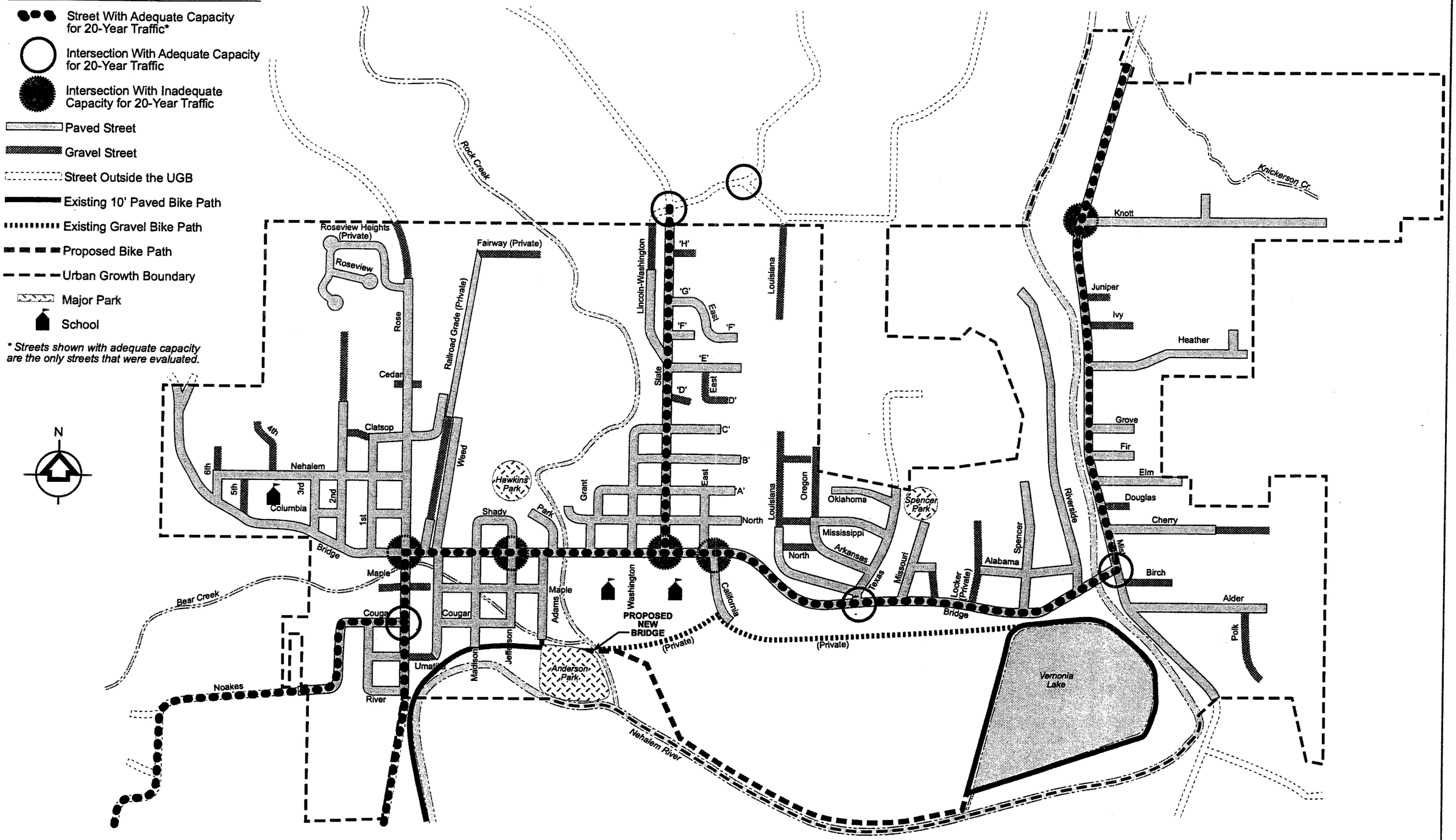
City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 2-3
SAFETY ISSUES

LEGEND

- Street With Adequate Capacity for 20-Year Traffic*
- Intersection With Adequate Capacity for 20-Year Traffic
- Intersection With Inadequate Capacity for 20-Year Traffic
- Paved Street
- Gravel Street
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- Urban Growth Boundary
- Major Park
- School

** Streets shown with adequate capacity are the only streets that were evaluated.*

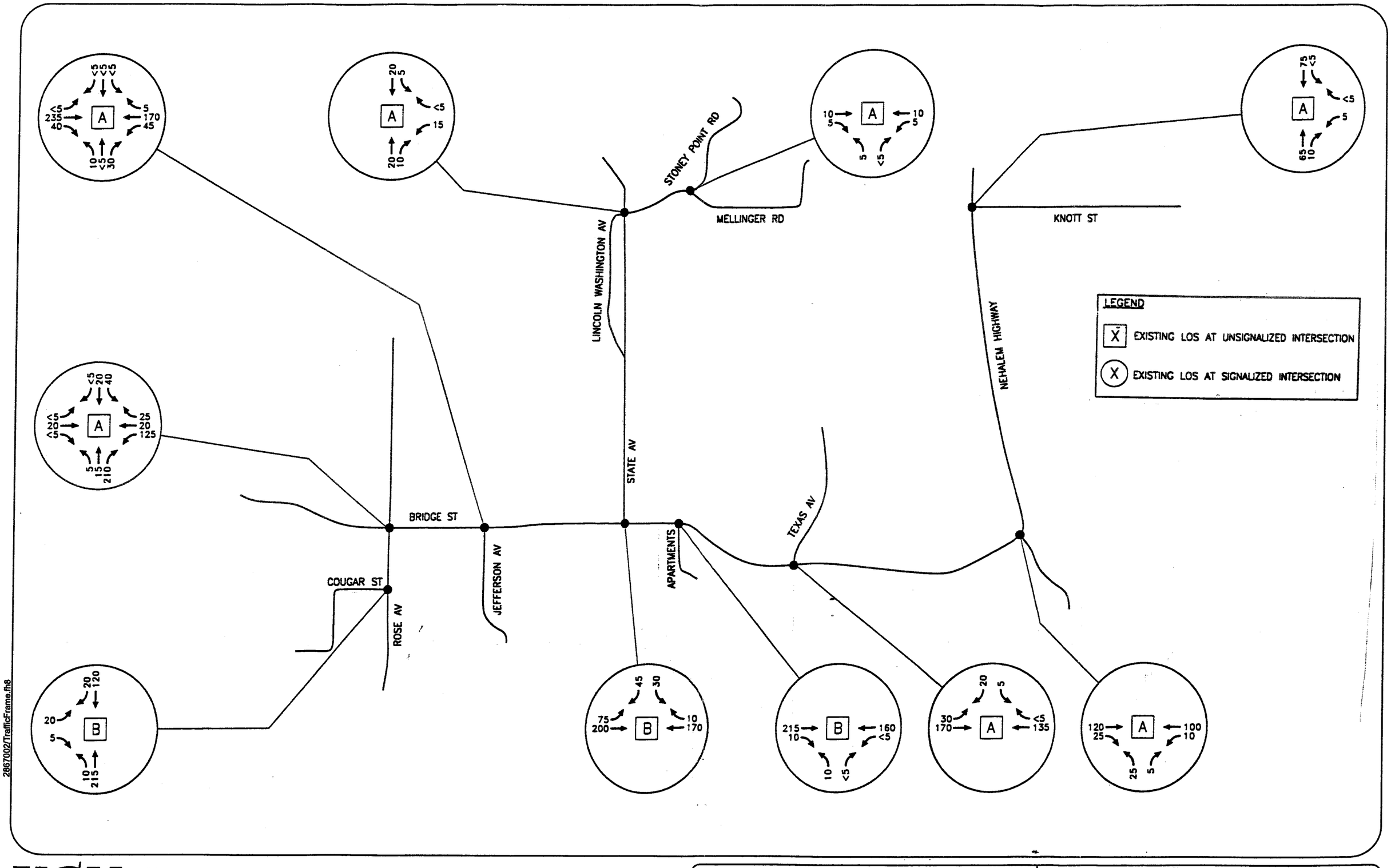


2867002/Capacity.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 2-4
ROADWAY OPERATIONS EVALUATION



2867002/TrafficFrame.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 2-5
INTERSECTION PM PEAK HOUR VOLUME AND LEVEL OF SERVICE

LEGEND

- Location of Connectivity Shortcoming
- Paved Street
- Gravel Street
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- Urban Growth Boundary
- Major Park
- School

N

Note: Floodway; Requires Bridge

Note: Requires Bridge

Note: Three Alternatives

Alt. 1

Alt. 2

Alt. 3

PROPOSED NEW BRIDGE (Private)

For Bike/Pedestrian

Rock Creek

Knickerson Cr.

Roseview Heights (Private)

Roseview

Fairway (Private)

Railroad Grade (Private)

Rose

Cedar

Clatsop

4th

6th

5th

3rd

2nd

1st

Nehalem

Columbia

Bridge

Weed

Hawkins Park

Shady

Park

Grant

East

Lincoln-Washington

State

'H'

'G'

'F'

'E'

'D'

'C'

'B'

'A'

North

Louisiana

Oregon

Oklahoma

Mississippi

Arkansas

North

Texas

Missouri

Spencer Park

Spencer

Alabama

Locker (Private)

Bridge

Riverside

Knott

Juniper

Ivy

Heather

Grove

Fir

Elm

Douglas

Cherry

Mist

Birch

Alder

Polk

Maple

Bear Creek

Cougar

Umatilla

Madison

Jefferson

Adams

Washington

California

Anderson Park

Noakes

River

Nehalem River

Vernonia Lake

2867002/Connectivity.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 2-6
CONNECTIVITY SHORTCOMINGS AND POTENTIAL IMPROVEMENTS

TABLE 2-2.
HIGHWAY 47 ACCESS INVENTORY

Highway 47 Road Segment	Number of Access Points to Highway	
	South & East Side	North & West Side
Rose Street from limits to Bridge	2	9
Bridge Street from Rose Avenue to Rock Creek	8	10
Bridge Street from Rock Creek to Texas Avenue	5	8
Bridge Street from Texas Avenue to Mist Drive	9	8
N. Mist Drive from Bridge to Ivy Street	10	0
N. Mist Drive from Ivy Street to City Limits	3	14
Total access points	**37**	**49**

The portion of Highway 47 in the City was checked against ODOT's traffic accident database for the last three years in which a full year's data is available. There were four accidents each in 1995 and 1996 and six accidents in 1997 on Highway 47 in Vernonia. The records do not indicate any specific danger spots along the highway. The records were compared to average accident rates on secondary urban state highways (*1997 State Highway Accident Rate Tables*, ODOT, August 1998). Table 2-3 shows the comparison.

TABLE 2-3.
COMPARISON OF ACCIDENT RATE FOR HIGHWAY 47 IN VERNONIA TO STATE AVERAGE

	Accident Rate (accidents per million vehicle miles)	
	Highway 47 in Vernonia	State Average for Secondary Urban State Highways
1995	1.51	3.27
1996	1.53	3.1
1997	1.85	2.93

City staff and advisory committee members identified the following safety issues (see Figure 2-3):

- Along Highway 47:
  - *Traffic flow problems and lack of proper channelization at intersection of Bridge and Rose*—The existing configuration is confusing and does not clearly delineate the main flow of traffic along the state highway, with minor flows approaching from the north and west.
  - *Traffic flow problems and lack of proper channelization at intersection of Bridge Street, Weed and Railroad Grade*—Two intersections are too close to each other, interfering with the proper function of both. A long

unmarked connection from North to Highway 47 creates driver confusion and traffic flow conflicts.

- *Conflict between bikes and parking automobiles on Bridge Street between Rose and Rock Creek*—There is designated parking along Highway 47 in the downtown area. With the traffic flow on the highway and cars pulling to and from parked position, there is very little space left for bicycles, who avoid that section of highway.
- *School delivery U-turns and sight distance at California*—Parents bring children to schools on the south side of Bridge street between Rock Creek and California. After children are dropped off, automobiles continue east and turn around at Bridge Street and California. Sight distance along the highway looking east is not adequate, creating conflict when traffic reenters Bridge Street.
- *Traffic flow problems and lack of proper channelization at intersection of Bridge and Louisiana/Texas*—Two intersections so close to each other that they merge together, interfering with the proper function of both. A long, unmarked connection from North to the state highway creates driver confusion and traffic flow conflicts.
- *Limited sight distance at intersection of Bridge and Spencer*—Sight distance to the east is inadequate for traffic entering from Spencer to the state highway, making this intersection very dangerous.
- *Traffic flow problems and lack of proper channelization at intersection of Bridge and Mist*—The existing configuration is confusing and does not clearly delineate the main flow of traffic along the state highway, with minor flow approaching from the south.
- *Limited sight distance and speeding concerns on Rose at River*—Traffic traveling from River eastbound to enter Rose does not have adequate sight distance to do so safely. This is exacerbated by northbound traffic on the state highway exceeding the posted speed limit on entering the City limits.

- Other areas of Vernonia:
  - *Limited sight distance at intersection of State and Stoney Point*—Sight distance along State just south of this intersection is inadequate to allow drivers to see traffic from the east. There also are sight distance problems on other legs of this intersection. A sign posted at the intersection designates the intersection as unsafe.
  - *Limited sight distance at intersection of Mellinger and Stoney Point*—Traffic approaching the intersection from either direction has inadequate sight distance. This is somewhat mitigated by the stop sign from Mellinger.
  - *"O-A" Hill area alley traffic conflicts*—It is difficult to know where traffic flow comes from. There is not proper delineation between streets and alleys, creating traffic conflicts.

POSTED SPEEDS

The posted speed on Highway 47 is 25 mph along Rose and Bridge and 45 mph along Mist. The speed limit on other city streets is 25 mph. School zones are posted at 20 mph. Parks are posted at 15 mph, as are some private developments.

ON-STREET PARKING

There is designated on street parking in the downtown area along both sides of Bridge Street.

LOCATION OF ACTIVITY CENTERS

Schools and parks, which are the main activity centers, are shown on Figure 2-1. A community center (city hall and library) is to be constructed at Jefferson and Bridge.

PLANNED NEW FACILITIES

A bicycle/pedestrian bridge over Rock Creek in Anderson Park has been designed and is scheduled for summer 1999 construction. The bridge will enable extension of the Banks-Vernonia linear trail.

ROADWAY OPERATION

There currently are no fully actuated signals in Vernonia. A flashing beacon is installed at the intersection of the intersection of Bridge and Rose. All other intersections are stop controlled; most are two-way stops. For the TSP analysis, 10 unsignalized intersections were chosen to be studied in greater detail:

- Highway 47 (Rose Avenue)/Cougar Street
- Highway 47 (Rose Avenue)/Highway 47 (Bridge Street)
- Highway 47 (Bridge Street)/Jefferson Avenue
- Highway 47 (Bridge Street)/State Avenue
- Highway 47 (Bridge Street)/California
- Highway 47 (Bridge Street)/Texas Avenue
- Highway 47 (Bridge Street)/Highway 47 (Mist Dr.)
- Highway 47 (Mist Dr)/Knott Street
- Keasey Road/State Avenue/Stoney Point Road
- Stoney Point Road/Mellinger Road.

Figure 2-4 shows the location of these intersections.

Existing Traffic Volumes

Field observations and manual traffic counts were conducted in July 1998 to determine existing traffic volumes through the study intersections. The counts indicated that the weekday p.m. peak hour occurs between 4:15 and 5:15 p.m. The existing weekday peak hour traffic volumes are shown in Figure 2-5.

Current Intersection Level of Service

A level-of-service (LOS) analysis was conducted to evaluate existing traffic conditions. The analyses were performed in accordance with the procedures described in the 1994 *Highway Capacity Manual* and procedures adopted by the Oregon Department of Transportation. To ensure that this analysis was based on a reasonable worst-case scenario, the peak 15-minute flow rate during the weekday p.m. peak hour was used. For this reason, the analysis reflects conditions that are only likely to occur for 15 minutes out of each average weekday. The existing LOS for the study intersections is listed in Table 2-4 and shown on Figure 2-5. Level-of-service "D" or better generally represents an acceptable operation level for unsignalized intersections.

All study intersections currently operate at acceptable levels of service—at LOS B or better. No intersection experiences an average stopped delay greater than 10 seconds.

TABLE 2-4.
1998 EXISTING CONDITIONS LEVELS OF SERVICE

Intersection	Average Stopped Delay	LOS Rating
Highway 47 (Rose Avenue)/Cougar Street	5.5 seconds	B
Highway 47 (Rose Avenue)/Highway 47 (Bridge Street)	6.7 seconds	B
Highway 47 (Bridge Street)/Jefferson Avenue	6.7 seconds	B
Highway 47 (Bridge Street)/State Avenue	5.6 seconds	B
Highway 47 (Bridge Street)/California	5.8 seconds	B
Highway 47 (Bridge Street)/Texas Avenue	3.7 seconds	A
Highway 47 (Bridge Street)/Highway 47 (Mist Drive)	4.8 seconds	A
Highway 47 (Mist Drive)/Knott Street	4.0 seconds	A
Keasey Road/State Avenue/Stoney Point Road	3.5 seconds	A
Stoney Point Road/Mellinger Road	3.6 seconds	A

CONNECTIVITY

State Highway 47 is the City's main connector. The collectors and local streets that tie into Highway 47 do not provide a complete grid. Much of this lack of connectivity is due to topography—bodies of water, hills and bluffs inhibit the connection of some streets. Additional connections could help reduce the overall vehicle miles traveled in the City to make more efficient use of existing capacity. Areas where further examination is warranted include the following (see Figure 2-6):

- An east-west connector along the northern edge of the UGB connecting Rose across Rock Creek to Lincoln-Washington and State Street, and from Mellinger to N. Mist Street at Knott
- Minimum north/south connections from Bridge Street to the north edge of the UGB; possibly continuing Texas through to Mellinger or continuing Oregon north to Louisiana or straight to Mellinger
- A north-south connection between streets that intersect Mist
- An east-west connection between streets that intersect Bridge between Texas and Mist
- A connection from the west end of Maple to Cougar
- A connection from the east end of Clatsop across Railroad Grade to Weed
- A connection from the north end of Park to Shady.

These issues are further examined in development of alternatives Chapter 4.

BICYCLE FACILITIES

The only designated bicycle facility in the study area is the north end of the Banks-Vernonia Linear Trail. This trail runs along the length of the Banks-Vernonia Linear Park, which parallels Highway 47 from Vernonia to the south boundary of Columbia County, then continues on to Banks in Washington County.

There are currently no designated bicycle facilities on the street network in the study area. Due to the lack of other east-west connections, bicyclists use the state highway or sidewalks. Most of the arterials and collectors in urban sections of the City are constructed with 36 to 40 feet of paved width. Due to low traffic volumes on the street system away from the state highway, there is room for bicyclists and parking along the shoulders. However, most of the highway has a need for improved bicycle facilities. Bicycle facilities are deficient in the "O-A" Hill area.

There is no east-west connection besides Highway 47. A scenic route that links some of the recreational attractions—such as the Banks-Vernonia Linear Park, Anderson Park, schools, and Vernonia Lake—may encourage bike use while decreasing conflicts on Highway 47.

City staff and advisory committee members have identified a few specific areas as safety hazards for cyclists. There is no safe bicycle connection from California to Texas along the Bridge Street corridor. A sight distance problem at the intersection of Park and Bridge Street creates an unsafe condition for vehicles, bicyclists and pedestrians. Also, on Bridge Street from Rose to Rock Creek, there are conflict points between vehicles, pedestrians and bicyclists. Finally, there is a bicycle/pedestrian safety issue on Highway 47 at and near the bridge over the Nehalem River. These locations are identified on Figure 2-3.

The issue of providing a bicycle lane on the north or south side of the Bridge Street right-of-way was discussed during the preparation of the recently completed Downtown Revitalization Plan. The only option identified for accommodating bicyclists on Bridge Street was to take away one side of the on-street parking. It was determined that bicycle

lanes on Bridge Street are not feasible, given the infeasibility of widening the right-of-way and the need to accommodate on street parking and pedestrians in the downtown business district. To accommodate bicyclists in the downtown area, Maple Street, from Rose to Adams, has been identified as an appropriate alternative alignment.

PEDESTRIAN FACILITIES

Walking is an important element of the transportation system. The TPR (Section 660-12-045(3)) requires that jurisdictions plan for pedestrian facilities as part of the TSP process. Pedestrian facilities are needed to accommodate short trips, for recreational purposes, and to accommodate non-driving populations such as school-age children.

The City of Vernonia has sidewalks along roadways through much of the downtown area, in the neighborhoods surrounding State Street, and on isolated segments within the UGB. Most sidewalks are in fair to good condition; only a few are in marginal or poor condition. As seen in Figure 2-2, there are a number of missing links in the pedestrian network, including along arterials and collectors. Arterials and collectors where pedestrian facilities are lacking include:

- N. Mist Drive between Birch and north city limits
- Bridge Street between Missouri and Spencer
- Nehalem between Rose Avenue and 6th Avenue
- Rose Avenue from Maple to Roseview Heights
- Cougar Street between 2nd Avenue and Rose Avenue.
- South side of Bridge from Weed West
- "O-A" Hill area.

Downtown Revitalization Plan

The City of Vernonia recently completed a Downtown Revitalization Plan, which recognizes that a pedestrian element is an important component of revitalizing the core commercial area. The plan identifies Bridge Street as a main pedestrian corridor, with such destinations as City Hall, the library and parks. As such, it needs not only to serve as the main thoroughfare for motor vehicles, but also to provide a safe and comfortable atmosphere for pedestrians. The plan's recommended pedestrian improvements for Bridge Street include the following:

- Intersection crossing improvements
  - Curb extensions at intersections to shorten crossing distances and improve visibility
  - Well-defined crosswalks
- Improvements to the pedestrian environment
  - Continuous street trees spaced at consistent intervals
  - Flowering trees at intersections

  - Sidewalk and furniture zones that create separation from each other
  - Ornamental lighting
  - Improved street furnishings
  - Improved gathering spaces
- Traffic management
  - Curb extensions that define parking zones and provide traffic calming.

This TSP supports the recommendations of the Downtown Revitalization Plan. Additional recommendations made in this TSP will augment this plan.

PUBLIC TRANSPORTATION SERVICES

Transit service in Columbia County is provided by Colco Transportation, operated by Columbia County Transportation. Colco Transportation provides bus service on a dial-a-ride basis, primarily targeting individuals with medical needs, the handicapped and the elderly. Colco operates on an ability-to-pay basis and does not have a fare schedule. The company also provides trips for medical services between Portland, Beaverton and Hillsboro and Vernonia, St. Helens and Scappoose. Colco has funding problems at this time.

REGIONAL TRANSPORTATION

Air

National and international air transportation is provided via Portland International Airport, which is approximately 50 miles southeast of Vernonia. The Vernonia Municipal Airport is located west of the City. This is a public airport and has only a grass landing strip. The Columbia County TSP indicates that there is funding available to upgrade this airport, so it may eventually be reclassified and become eligible for inclusion in the National Aviation System Plan (NASP).

Rail

There are no rail facilities in the City of Vernonia. A branch line of the Willamette and Pacific parallels the Columbia River. There is no rail passenger service in Columbia County. Amtrak provides service at Kelso, Washington, with eight daily trains, four in each direction along the Seattle to Portland corridor.

Water

There is no scheduled water freight or passenger service to Vernonia. The Port of St. Helens, about 20 miles to the east, is the closest port on the Columbia River.

Pipeline

Natural gas pipelines that serve Columbia County are owned by Northwest Natural.

CHAPTER 3.
FUTURE CONDITIONS

This chapter summarizes expected growth in Vernonia and the likely effects of this growth on the transportation system. Traffic projections for 2018, a 20-year horizon, have been developed and the resulting transportation network deficiencies have been identified. Some solutions to the capacity problems are discussed in this chapter; the solutions are developed further in the next chapter.

FUTURE TRANSPORTATION DEMAND

Twenty-year (2018) traffic projections for Vernonia were developed using a Level 2 Cumulative Analysis procedure. The procedure involved estimating the number of residential dwelling units and the square footage of non-residential development in each of the City's traffic analysis zones and translating the development into traffic estimates using rates established in the Institute of Transportation Engineers' *Trip Generation, 6th Edition*. Traffic projections for typical weekdays were developed for daily and p.m. peak hour conditions.

The 20-year projections assumed full buildout of all developable land within the current Vernonia UGB. This amounts to an increase of 1,200 residential dwelling units and 600,000 square feet of commercial/industrial development. This growth will generate approximately 17,400 added vehicle trips per weekday, or 1,920 per weekday p.m. peak hour.

An intersection level of service was projected for the 10 key intersections studied. Level of service is measured from A to F. Level A describes free flowing traffic and level F is totally congested traffic. Public facilities are generally designed to meet at least level of service D. Level of service D is considered the minimum standard for Vernonia City Streets. A detailed explanation of the trip generation process and future traffic forecasting is included in Appendix D.

DESIGN STANDARDS

A set of design standards has been recommended for the City of Vernonia. The standards define requirements for sidewalks, parking and planting strips and the accommodation of bicyclists. In addition to establishing requirements for each functional classification (arterial, collector, and local), the standards distinguish between roads of urban character and those of rural character. For local roads of urban character, separate standards also have been developed for new construction and retrofitting. The proposed standards are outlined in Table 3-1.

TABLE 3-1.
PROPOSED ROADWAY DESIGN STANDARDS

Street Type	Travel Lanes	Parking	Bikeways	Total Pavement	Unpaved Shoulders	Planting Strip	Sidewalks	Right of Way[a]
Urban (Fig. 2-1)								
New Local	2 – 9'	5' both sides	—	28'	—	5' both sides	5' both sides	50'
Local Preferred Retrofit	2 – 9'	6' one side	—	24'	—	5' both sides	5' both sides	46'
Local Minimum Retrofit	2 – 9'	—	—	18'	—	—	5' one side	25'
Collector	2 – 10'	8' one side[a]	5' both sides	38'	—	5' both sides	6' both sides	62'
Arterial	2 – 11'	8' both sides[a]	5' both sides	48'	—	—	10' both sides[b]	70'
Rural (Fig. 2-1)								
Local	2 – 9'	—	—	18'	2' both sides	—	—	30'
Collector	2 – 10'	6' one side	5' both sides	36'	4' both sides	—	5' both sides	62'
Arterial	2 – 12'	—	5' both sides	34'	4' both sides	—	5' both sides	60'

a. Required right of way is the total of pavement, shoulders, planting strip, and sidewalks, plus 2 feet for urban roadways and 8 feet for rural roadways.
b. Standards for urban arterials and collectors require 8-foot parking lanes in the downtown area, where storefront commercial land uses make on-street parking desirable. The urban and rural standards application areas are defined by Figure 2-1. Outside of downtown, parking lanes may be excluded if adjacent land uses do not support the need (for instance, if buildings are set back from the right-of-way and have off-street parking). Where on-street parking is eliminated, total pavement width shall be reduced by the same amount.
c. The 10-foot arterial sidewalk is for the downtown area and may be reduced to 6 feet elsewhere.

ROADWAY OPERATIONS

Roadway Levels of Service

The 2018 traffic projections reflect a significant increase in traffic on Highway 47 through central Vernonia. The lack of a parallel east-west collector street on the north side of Vernonia forces traffic from the north to travel into downtown Vernonia and then backtrack to access new residential areas on the north side of the City. Also travel from residential

areas in the east part of the City to industrial areas in the west might become a problem if the zoned industrial area is developed.

Along Highway 47 through central Vernonia, projected 2018 traffic can be accommodated with the current two through lanes, even if an east-west collector roadway is not constructed. However, average daily traffic would approach 15,000 vehicles.

In the short-term, operation of the flashing beacon at Bridge and Rose should be modified to eliminate confusion from the all-red and green right turn arrow signals for northbound Highway 47 traffic approaching this intersection.

A southbound left turn lane could be required on Highway 47 on the north side of Vernonia at Knott Street or at an access farther south to handle the traffic associated with anticipated future industrial development in that area on the east side of Highway 47. This should be addressed upon development of the industrial area.

Intersection Levels of Service

An updated 2018 traffic operations analysis of the weekday p.m. peak hour was undertaken for the 10 study intersections. Figure 5 of Appendix D identifies the level of service for the most heavily congested side street approach at each intersection, assuming each intersection would remain unsignalized through 2018. The analysis found side street levels of service of F for the weekday p.m. peak hour on the north approach of Rose Street to Highway 47 and the north approach of State Street to Highway 47. The side street volumes would meet peak hour signal warrants at a minimum, and level of service would be adequate if signals were provided.

PUBLIC TRANSPORTATION SERVICES

Currently, transit service is provided on demand to Vernonia residents by Colco Transportation. The Columbia County TSP reports that Colco's recent experience with fixed route bus service indicated a low level of transit demand in rural areas. As population grows, transit demand may increase. For the planning horizon, the dial-a-ride van service will serve rural transit demands effectively and economically.

Since some residents of Vernonia work in Portland, Beaverton and Hillsboro, commuter travel is a significant consideration. The City of Vernonia will work with Columbia County to set up vanpools and rideshare matching services for commuter travel. The County reports in its TSP that the establishment of formal park-and-ride lots is an important priority. These lots are desirable to commuters because they provide convenient locations for car pools and buses to pick up passengers.

One of the three future park-and-ride lot locations sited by Columbia County is on Highway 47 south of Vernonia. This lot is part of the county's long term plans and is expected to serve commuters into Hillsboro and Beaverton. When it is operational, the City should assess the demand for a peak hour fixed route bus service through the City to the park-and-ride lot.

REGIONAL TRANSPORTATION

Air

It is anticipated that the Vernonia Municipal Airport will continue to be used for recreational purposes. The City is investigating grant funding to pave the airport's runway, which would increase the utility of the airport. The plan development identified no additional measures at this point.

Rail

It is not anticipated that rail will directly serve Vernonia or become a component of its transportation system within the planning horizon.

Water

It is not anticipated that water travel will be a component of Vernonia's transportation system within the planning horizon.

Pipeline

As reported in the Columbia County TSP, the county is adequately served by pipeline facilities. No needs for expansion have been identified.

CHAPTER 4.
FUTURE TRANSPORTATION SYSTEM ALTERNATIVES

This chapter presents options for addressing identified deficiencies in Vernonia's transportation network under existing and future conditions. Potential projects to improve each deficiency are listed, followed by overall improvement alternatives combining some of the individual projects. From the overall alternatives, a recommended alternative is selected.

POTENTIAL PROJECTS

Possible projects to improve specific deficiencies were identified in four categories:

- Projects needed to bring the existing network up to acceptable design standards
- Projects that correct safety issues
- Projects that are necessary to provide an acceptable level of service in 2018
- Projects needed to improve the connectivity of the transportation system or to complete a modal network.

Projects that address only pavement condition where no other problems have been identified are discussed in Chapter 5. Estimated costs for all projects are included in Appendix C.

Meeting Standards

Many streets in Vernonia fail to meet the design standard for pavement width. Arterial and collector streets generally are too narrow and in many cases suffer from lack of bicycle/pedestrian facilities, poor sight distance, steep grades and inadequate room for large trucks. Many of these problems are addressed by problem-specific solutions. In other cases problems are corrected with widening projects that are recommended to bring the City's network up to the proposed standards. No projects are identified strictly for reasons of meeting standards. Standards are used as a guideline to identify deficiencies.

Standards for arterials in Vernonia (outlined in Table 3-1) were developed to meet the needs of a rural city. Standards developed by David Evans & Associates, Inc. for small jurisdictions were used as a guideline. These standards are not always consistent with ODOT's *Highway Design Manual*, which sets standards for Highway 47. Projects designed to Vernonia standards on the state highway will likely require design exceptions from ODOT. It is appropriate to use this approach because a full ODOT standard would likely encourage faster traffic through the City and create conflicts with bicyclists, pedestrians and adjacent land uses, especially in the downtown area. Although ODOT classifies all of Highway 47 within the city limits as "urban" Vernonia design standards call for a rural highway cross-section everywhere outside of downtown. This is in recognition of citizen preference and the fact that topography and other constraints will limit urban development

in the City. Highway 47 improvements to meet City standards are not a high priority for state funding under Oregon Transportation Commission (OTC) funding policies. It is likely that other state needs in Vernonia will be addressed first.

The following improvements were identified to bring existing arterials up to the proposed design standards:

- ***ST1. Highway 47/Bridge Street between East Avenue and N. Mist Drive***—Widen and overlay entire section to bring up to rural arterial standards.
- ***ST2. Highway 47/Rose Avenue between Maple Street and Bridge Street***—Full retrofit needed to bring up to urban arterial standards.
- ***ST3. Highway 47/N. Mist Drive between Bridge Street and the north city limit***—Widen and overlay entire section to bring up to rural arterial standards. Land constraints might make this improvement difficult.

The following improvements are needed to bring existing collectors up to the proposed design standards:

- ***ST4. State Avenue between D Street and the city limit***—Overlay entire section and add sidewalks to bring up to standards and improve surface condition.
- ***ST5. 2nd Avenue/Cougar Street/River Street between the city limit and Rose Avenue***—Widen and overlay along 2nd and River, add sidewalk to entire section.
- ***ST6. Knott Street between N. Mist Drive and the city limit***—Widen, overlay and add sidewalk to entire section.
- ***ST7. Nehalem Street between 6th and Rose Avenue***—Widen, add sidewalk, and overlay entire section.
- ***ST8. Louisiana Avenue between Mellinger and Texas***—Widen and pave where needed, overlay remainder, add sidewalk entire section.
- ***ST9. Rose Avenue between Roseview Heights and the UGB***—Widen, pave and overlay as needed.

The cumulative cost of these projects is $1,685,000.

Safety Improvements

Study area safety issues are shown in Figure 2-3. Potential solutions were identified by members of the project staff. Project-specific costs are listed in Appendix C. The problems and potential solutions are described below. The solutions include a variety of corrective measures, such as revising geometrics, adding signals and turn lanes, and adding infrastructure to separate pedestrians and vehicles.

Motor Vehicle Safety Issues Along Highway 47

Safety problems along Highway 47 and potential solutions are as follows:

- ***SF1. Traffic flow problem and lack of proper channelization at intersection of Bridge Street and Rose Avenue***—Provide turning and improve channelization at intersection of Bridge and Rose (right turn westbound, left turn eastbound). Modify the flashing beacon by separating right turn green arrow from flashing red to minimize confusion of northbound traffic upon entering intersection from south. Eventually provide a fully actuated traffic signal when warranted. Consolidate accesses near the intersection. Upgrade curbs, add sidewalk and overlay. Ensure that pedestrian crosswalks are well marked and adequate lighting is provided. (Also discussed in LS1.)
- ***SF2. Traffic flow problem and lack of proper connection at intersection of Bridge Street, Weed and Railroad Grade***—Revise connection at the intersection of Bridge and Weed and Railroad Grade. Eliminate access from Railroad Grade to Bridge Street and move it to Weed. Add some curb, gutter and sidewalk. A secondary part of this project is to provide additional parking on Railroad Grade near Highway 47.
- ***SF3. Conflict between bikes and parking automobiles on Bridge Street between Rose Avenue and Rock Creek***—Relocate bikeway from Bridge Street between Rose and Rock Creek to Maple. This involves paving Maple from Rose to Weed and providing striping and signing. Adding bike lanes in the congested downtown environment was considered and rejected in favor of keeping wide sidewalks and parking.
- ***SF4. School delivery 'U' Turns and sight distance at Lincoln School on Bridge Street***—Provide turn-out for temporary parking for dropping off and picking up students, and construct a turnaround across Bridge street from school. Improve signage to identify school zone.
- ***SF5. Traffic flow problem and lack of proper connection at intersection of Bridge Street and Louisiana/Texas***—Realign the intersections of the collector (Louisiana) with Highway 47 and Texas with Louisiana. This project requires some paving and delineation with curb and gutter.
- ***SF6. Limited sight distance due to slope by the road at intersection of Bridge Street and Spencer***—Close access from Spencer onto Highway 47. Build a cul-de-sac where Spencer comes to Bridge to sever this connection. Acquire right of way and pave Locker (private) to allow adequate access onto Bridge.
- ***SF7. Traffic flow problem and lack of proper channelization at intersection of Bridge Street and N. Mist Drive***—Provide turning lanes and improve channelization for turning movements.
- ***SF8. Limited sight distance and speeding concerns on Rose Avenue at River***—Regrade slope along west side of Rose Avenue heading south. This project has possible impacts on utilities. Right of way is required.
- ***SF9 Limited sight distance at California toward east***—Regrade the area just east of the intersection to increase visibility.

Motor Vehicle Safety Issues in Other Areas of Vernonia

Safety problems in the City apart from Highway 47 and potential solutions are as follows:

- ***SF10. Limited sight distance at intersection of State and Stoney Point***—Improve sight distance at the intersection, regrade and rearrange the intersection to align all roads in one point. A retaining wall and right-of-way purchase may be required.
- ***SF11. Limited sight distance at intersection of Mellinger and Stoney Point***—Improve sight distance and realign intersection. Some right-of-way purchase is required.
- ***SF12. "O-A" Hill area alley traffic conflicts***—As streets in the area are improved, provide better delineation and signing for alley traffic.

Bicycle and Pedestrian Safety Issues

Safety problems related to bicycle and pedestrian traffic and potential solutions are as follows:

- ***BP1. There is no safe bicycle connection from California to Spencer along the Highway 47/Bridge Street corridor***—Create an off-road bike path bypass parallel to and south of Bridge Street. This involves paving about 1,200 feet of existing gravel base. Right of way would have to be purchased. The property is being developed and it is expected to be very difficult to design a bike way through the pending development. The recommended improvement of Bridge Street (ST1) proposes wider shoulders, which will also accommodate bicyclists.
- ***BP2. There is a sight distance problem at the intersection of Park Drive and Bridge Street, which creates an unsafe condition for vehicles, bicyclists and pedestrians***—One way to resolve this issue is to redesign the intersection of Park Drive and Bridge street, widening Bridge in this area. Because of the significant impact on existing development and cost of this approach, the recommended solution is to make Park Drive one-way and create a new connection to Shady Lane/Jefferson Avenue. Bicycles will then reenter Bridge from Jefferson at a safe connection. This involves about 300 feet of new construction and rededication of park property to right of way.
- ***BP3. There is a bicycle/pedestrian safety issue on Highway 47 at and near the bridge over the Nehalem River***—Improve bicycle/pedestrian access to the bridge over the Nehalem River. The bridge has sidewalks on both sides. It works well for pedestrians. With a proper wheelchair ramp approach, bicycles will be able to use this short section jointly with pedestrians. Modify existing bridge sidewalks with proper approaches to allow bicycle/wheelchair access. The bridge looks old, but ODOT inspection records indicate that it is sound. ODOT has no present or future plans to replace this bridge.

- ***BP4. There is a bicycle/pedestrian safety issue on Highway 47 over Rock Creek***—Improve bicycle/pedestrian access to the bridge over the Nehalem River. The bridge has sidewalks on both sides. It works well for pedestrians. With a proper wheelchair ramp approach, bicycles will be able to use this short section jointly with pedestrians. Modify existing bridge sidewalks with proper approaches to allow bicycle/wheelchair access. ODOT has no present or future plans to replace this bridge.

Providing Acceptable Levels of Service in 2018

Analyses of future traffic in the City identified locations where desired levels of service would not be met by 2018 without improvements to the transportation network. The location of these deficiencies and potential solutions are as follows:

- ***LS1***—A left turn lane and fully actuated traffic signal might be warranted at State Avenue and Bridge Street.
- ***LS2***—At the Highway 47/Bridge Street/Rose Avenue intersection, a traffic signal will be warranted in the future. A southbound left turn lane on the north Rose Street approach to this intersection will also be required. This intersection will need to be widened to accommodate the added turn lane and to facilitate truck-turning movements (in particular the westbound left turn). The side street volumes would meet peak hour signal warrants at a minimum, and level of service would be adequate if signals were provided. (Covered by SF1)
- ***LS3***—A southbound left turn lane might be required on Highway 47 on the north side of Vernonia at Knott Street or at an access farther south to handle traffic associated with possible future industrial development on the east side of Highway 47 in that area. No action is recommended at this time. Upon development of the industrial area, the need for this project should be reevaluated. The City should consider developing a funding mechanism that would enable system development charges be assessed for development.
- ***LS4***—The 2018 traffic forecast indicated substandard LOS at Bridge and Jefferson and at Bridge and California. These areas need to be addressed as traffic counts approach the forecast. Additional channelization for turning movement will be a likely solution.

Connectivity Improvements

As traffic volume increases in Vernonia over the next 20 years, Highway 47 will carry much of the load as the only east-west and the main north-south connector in the City. Improving the connectivity and completing parts of the grid network will provide some relief for the arterial. Much of the lack of connectivity is due to topographical features in the City. The topography will continue to be challenge to connectivity. Some additional connections could be made to help reduce the overall vehicle miles traveled and to use existing capacity most efficiently.

Areas where improvements are warranted were reviewed in the field. Gross cost estimates for each project, along with the field inspection findings, were used to determine whether the project warrants further consideration. Locations of connectivity problems and potential solutions are shown on Figure 2-6. Cost estimates for the proposed improvements are outlined in Appendix C.

Motor Vehicle Connectivity

The City's largest missing link is a connection line along the northern edge of the UGB. Potential solutions are as follows:

- ***C1. An east-west connector along the northern edge of the UGB connecting Rose Avenue across Rock Creek to Lincoln-Washington and State Street***—A possible connection would be across Rock Creek near the City water plant and moving west near Fairway Lane (private), connecting to Rose just north of Roseview Heights and connecting State via Lincoln-Washington. This would involve 2,000 feet of new construction, right-of-way acquisition, a new bridge and upgrade of existing roads. Topographical features, wetlands, floodway issues, and the need to acquire right of way make this project very challenging. The most direct route with the least impact was reviewed and costs estimated.
- ***C2. An east-west connector along the northern edge of the UGB connecting State via Stoney Point and Mellinger to N. Mist Drive at Knott***—A possible connection would cross the Nehalem River across from Knott, heading west to Mellinger. This would involve 1,500 feet of new construction, a new bridge, upgrade of surrounding roads, and steep grades. Steep grades near the river, the need to acquire right of way, and the new bridge crossing make this project very challenging. The most direct route with least impact was reviewed and costs estimated.

The other notable missing link is a connection from Bridge Street to the northern edge of the UGB from the area between State and Mist. Potential solutions are as follows:

- ***C3&C4. A north-south connection from Bridge Street to the north edge of the UGB***—Four alignments were reviewed for this connection. The primary alternative is to develop Louisiana into a collector by upgrading the existing road and constructing a new road on the existing right of way. Other alternatives include continuing Texas north to Mellinger, continuing Oregon north to Mellinger, and continuing Oregon north to about F and then west to Louisiana.

  The Louisiana route (C3) and Oregon route north to Mellinger (C4) are both recommended. The public right of way already exists along both alignments. The Louisiana route is almost in place. It is currently passable with four wheel drive vehicles and can be upgraded to gravel road with minimum expense and developed to standard collector later. The Oregon route provides better grades and easier geometric alignment, but will be more costly to connect.

Potential solutions to other connectivity issues are as follows:

- ***C5. A north-south connection from Heather to Cherry parallel to Mist***—There are natural obstructions in this area and new drainage and right of way would be required. A connection here would involve 2,200 feet of new construction. A floodplain and existing residential dwellings are in the way of the route. The affected streets are short, so the lack of this connection adds little travel distance. The connection would provide minimum vehicular benefit at a large cost and therefore is not recommended. However this connection could be considered for a multiple use path at a future date.
- ***C6. A new connection from Cherry to Alder parallel to Mist***—There are natural obstructions in this area and new drainage and right of way would be required. A connection here would involve 1,000 feet of new construction. A floodplain and existing residential dwellings are in the way of the route. The affected streets are short, so the lack of this connection adds little travel distance. The connection would provide minimum vehicular benefit at a large cost. However this connection could be considered for a multiple use path at a future date.
- ***C7. An east-west connection between the streets that intersect Bridge Street between Texas and Spencer***—About 1,200 feet of new construction and right of way would be required for this connection. The affected streets are short, so the lack of this connection adds little travel distance. The connection would provide minimum vehicular benefit at a large cost.
- ***C8. A connection from the west end of Maple to Cougar***—This connection would involve new construction for 300 feet. The affected streets are short, so the lack of this connection adds little travel distance. The connection would provide minimum vehicular benefit.
- ***C9. A connection from the east end of Clatsop across Railroad Grade to Weed***—There is an informal crossing at this location for part of the way connecting Railroad Grade to Weed. About 200 feet of new construction would be needed to complete the project. This connection will complete the grid in the northwest part of the City and take traffic off Highway 47 (Bridge Street).

Bicycle and Pedestrian Connectivity

Potential bicycle/pedestrian connectivity problems and potential solutions are as follows:

- ***BP5. Extend bikeway from end of paved surface in Anderson Park to bridge under development***—This improvement involves about 400 feet of paving over existing gravel and is recommended. The City is applying for a federal grant to fund this project.
- ***BP6. Extend bikeway from new bridge to Vernonia Lake***—This improvement requires about 3,500 feet of paving over an existing gravel base. Right of way purchase is required. The improvement is recommended. The City is applying for a federal grant to fund this project.

- ***BP7. Extend bikeway from new bridge via schools to California***—This improvement requires about 1,200 feet of paving over an existing gravel base. Right of way purchase is required. This is the most direct route to expand bicycle/pedestrian facilities to schools from the southwest part of the City. The improvement is recommended. The City is applying for a federal grant to fund this project.
- ***BP8. Construct a bike bypass of Highway 47 parallel to N. Mist Drive from Riverside Drive at Bridge Street***—Since Highway 47 (Mist Drive) is not pedestrian or bicycle friendly, some level of improvements is required. As an alternative to on-the-road improvement, a separate bikeway was considered. This bikeway would be routed underneath the existing bridge to avoid a highway crossing, then routed along Riverside Drive and cross the Nehalem River at Knott Street to tie back into Mist. This improvement involves widening Riverside, new construction for about 1,000 feet, and a new bridge. This project would be expensive. North-south bicycle/pedestrian access will be improved when N. Mist Drive is upgraded as recommended elsewhere (ST3).
- ***BP9. Provide pedestrian facilities on N. Mist Drive between Birch and north city limits***—This road segment is recommended to be improved elsewhere. Pedestrians will be accommodated with paved shoulders (ST3).
- ***BP10. Provide pedestrian facilities on Bridge Street between Missouri and Spencer***—This road segment is recommended to be improved elsewhere. The improvements will provide shoulders. Pedestrians will be accommodated with paved shoulders (ST1).
- ***BP11. Provide pedestrian facilities on Bridge Street between Rose Avenue and 6th Avenue***—Sidewalks currently exist on the north side of this segment up to Lincoln School. The terrain along this roadway precludes widening to add sidewalks on the south side. It is recommended that Nehalem, which runs parallel to this segment, be developed to an urban collector. Sidewalks will be included with that improvement (ST7).
- ***BP12. Provide pedestrian facilities on Rose Avenue from Maple to Roseview Heights***—To improve the connectivity of the pedestrian network, 5-foot sidewalks would be installed on both sides of the street for the length of this segment.
- ***BP13. Provide pedestrian facilities on Cougar Street between 2nd Avenue and Rose Avenue***—Sidewalks are included with the recommendation to bring this road section up to collector standards (ST5).

OVERALL IMPROVEMENT ALTERNATIVES

Three alternatives for overall transportation network improvements were developed:

- No-build alternative
- Highway 47 Route alternative
- Northern Connector alternative

The alternatives are described below.

No-Build Alternative

The no-build alternative calls for the City of Vernonia to continue its current practice of using state funds for basic maintenance projects. No major improvement projects would be undertaken. No financial investments would be required.

With the growth expected in Vernonia over the next 20 years and no expansion of the road improvement program, deterioration of the transportation infrastructure would accelerate. Pavement conditions would worsen, decreasing capacity. As unsafe conditions are not corrected and the number of vehicles increases, the number of accidents would increase.

Congestion would increase under the no-build alternative. An estimated 1,920 vehicle trips per day will be added on the Vernonia roads. There would be a significant increase in traffic on Highway 47 through central Vernonia. There would be long delays at the Bridge Street/Rose Avenue intersection. Long queues would develop eastbound on Bridge at State Street as vehicles block the main route waiting to turn left. Level of service during the weekday p.m. peak hour would be F on the north approach of Rose Avenue to Highway 47 and the north approach of State Street to Highway 47.

Alternative modes of travel, such as bicycle and pedestrian, would not be encouraged under this alternative. Many gaps would remain in the bicycle/pedestrian network and several unsafe conditions would exist. These deficiencies would deter many people from using alternatives to cars.

Highway 47 Route Alternative

Improvements under the Highway 47 Route alternative would bring the transportation system up to acceptable limits. This alternative provides many benefits over the no-build alternative. Over a 20-year period, all arterials and collectors within the study area would meet design standards. Known safety hazards would be eliminated, and capacity would be maintained. The additional traffic expected on City roads would not result in unacceptable levels of service. Bicycle and pedestrian traffic would be encouraged, with greater connectivity resulting from upgrades and improved safety. The total cost of this alternative is approximately $4,409,000. Table 4-1 lists the included improvement projects.

Connectivity improvements under this alternative would provide several benefits. Shorter trip lengths would be possible, resulting in fewer vehicle miles traveled. Providing more than one route for the same trip would reduce traffic on the main roadway. Greater connectivity also would encourage pedestrian and bicycle trips as trip lengths become shorter and more feasible for a pedestrians or cyclists.

The proposed north-south connection along Louisiana would divert traffic from State Street. Areas northeast of the City would have an alternative to travel on Highway 47/Bridge Street. Clatsop would be connected to Weed across Railroad Grade. The informal crossing already in place at this location indicates that this is a valuable connection to some. This short connection may take some trips off Bridge Street and reduce trip lengths for those traveling between the two areas served.

TABLE 4-1.
IMPROVEMENT PROJECTS INCLUDED IN HIGHWAY 47 ROUTE ALTERNATIVE

Projects to Upgrade Roadways to Design Standards

ST1—Highway 47/Bridge Street between East Avenue and N. Mist Drive

ST2—Highway 47/Rose Avenue between Maple Street and Bridge Street

ST3—Highway 47/N. Mist Drive between Bridge Street and the north city limit

ST4—State Avenue between D Street and the city limit

ST5—2nd Avenue/Cougar Street/River Street between the city limit and Rose Avenue

ST6—Knott Street between N. Mist Drive and the city limit

ST7—Nehalem Street between 6th Avenue and Rose Avenue

ST8—Louisiana Avenue between Mellinger and Texas

ST9—Rose Avenue between Roseview Heights and the UGB.

Projects to Address Motor Vehicle Safety

SF1—Provide turning lanes and improve channelization at the intersection of Bridge and Rose. Modify flashing beacon. Provide fully actuated traffic signal when warranted and consolidate accesses.

SF2—Revise connection at the intersection of Bridge and Weed and Railroad Grade. Eliminate access from Railroad Grade to Bridge Street and move it to Weed. Provide additional parking on Railroad Grade near Highway 47.

SF4—Widen Bridge Street in front of Lincoln School to provide temporary parking for children being dropped off and picked up from school and construct a turnaround.

SF5—Realign intersections of Bridge Street with Louisiana and Louisiana with Texas.

SF6—Close access from Spencer onto Highway 47 and build a cul-de-sac. Acquire right of way and pave Locker (private) to allow adequate access onto Bridge Street from Spencer.

SF7—Provide turning lanes and improve channelization at intersection of Bridge Street and N. Mist Drive.

SF8—Regrade slope at intersection of Rose and River to increase sight distance.

SF9—Regrade the area at the intersection of California and Bridge to increase visibility.

SF10—Improve sight distance at the intersection of State and Stoney Point, regrade and rearrange the intersection to align all roads in one point.

SF11—Improve sight distance and realign the intersection of Mellinger and Stoney Point.

SF12—As streets in the O-A Hill area are improved, provide better delineation and signing for alley traffic.

TABLE 4-1 (continued).
IMPROVEMENT PROJECTS INCLUDED IN HIGHWAY 47 ROUTE ALTERNATIVE

Projects to Address Bicycle/Pedestrian Safety
SF3—Relocate bikeway from Bridge Street between Rose and Rock Creek to Maple.
BP2—Make Park Drive one-way and create a new connection to Shady to eliminate unsafe sight distance problem for cyclists and pedestrians.
BP3—Improve access to Highway 47 bridge over Nehalem River for bike and pedestrian traffic by modifying sidewalk.
BP4—Improve access to Highway 47 bridge over Rock Creek for bike and pedestrian traffic by modifying sidewalk.
Projects to Maintain Acceptable Level of Service
LS1—Provide a left turn lane at State Street and install a fully actuated traffic signal.
Projects to Provide Motor Vehicle Connectivity
C3—Provide a north/south connection from Bridge Street to the north edge of the Urban Growth boundary by developing Louisiana into a collector.
C4—Provide a north/south connections from Bridge Street to the north edge of the Urban Growth boundary by developing Oregon.
C9—Create a connection from the east end of Clatsop across Railroad Grade to Weed.
Projects to Provide Bicycle/Pedestrian Connectivity
B5—Extend bikeway from end of paved surface in Anderson Park to bridge.
B6—Extend bikeway from new bridge to Vernonia Lake.
B7—Extend bikeway from new bridge via schools to California.
B12—Provide sidewalk on Rose Avenue from Maple to Roseview Heights.

The bicycle improvements included in this alternative are a natural continuation of the Banks-Vernonia Linear Trail and connect recreational points of interest in the area. The sidewalk along Rose Avenue north of Bridge Street would provide a safe and attractive pedestrian path from Roseview Heights and other residential areas along Rose to the downtown core area.

Northern Connector Alternative

The Northern Connector alternative would address identified roadway deficiencies through a system of connectivity improvements that would be required if the Highway 47 were not upgraded. Key elements of this alternative are a northern connector, additional connectivity projects, safety projects, and bicycle/pedestrian elements of the Highway 47 capacity improvements not included in this alternative. This alternative provides some benefit over the Highway 47 alternative by improving connectivity in this geographically challenging north area of the City. However, it is very expensive and has significant environmental impact. The total cost of this alternative is approximately $12,347,000. Table 4-2 lists the included improvement projects.

TABLE 4-2.
IMPROVEMENT PROJECTS INCLUDED IN NORTHERN CONNECTOR ALTERNATIVE

Projects to Upgrade Roadways to Design Standards

ST4—State Avenue between D Street and city limits

ST5—2nd Avenue/Cougar Street/River Street between city limits and Rose Avenue

ST6—Knott Street between N. Mist Drive and city limits

ST7—Nehalem Street between 6th Avenue and Rose Avenue

ST8—Louisiana Avenue between Mellinger and Texas

ST9—Rose Avenue between Roseview Heights and UGB

Projects to Address Motor Vehicle Safety

SF1—Provide turning lanes and improve channelization at the intersection of Bridge and Rose. Modify flashing beacon. Eventually provide fully actuated traffic signal and consolidate accesses.

SF2—Revise connection at the intersection of Bridge and Weed and Railroad Grade. Eliminate access from Railroad Grade to Bridge Street and move it to Weed. Provide additional parking on Railroad Grade near Highway 47.

SF4—Widen Bridge Street in front of Lincoln School to provide temporary parking for children being dropped off and picked up from school and construct a turnaround.

SF5—Realign intersections of Bridge Street with Louisiana and Louisiana with Texas.

SF6—Close access from Spencer onto Highway 47 and build a cul-de-sac. Acquire right of way and pave Locker (private) to allow adequate access onto Bridge Street from Spencer.

SF7—Provide turning lanes and improve channelization at intersection of Bridge Street and N. Mist.

SF8—Regrade slope at intersection of Rose and River to increase sight distance.

SF9—Regrade the area at the intersection of California and Bridge to increase visibility.

SF10—Improve sight distance at the intersection of State and Stoney Point, regrade and rearrange the intersection to align all roads in one point.

SF11—Improve sight distance and realign the intersection of Mellinger and Stoney Point.

SF12—As streets in the O-A Hill area are improved, provide better delineation and signing for alley traffic.

Projects to Address Bicycle/Pedestrian Safety

SF3—Relocate bikeway from Bridge Street between Rose and Rock Creek to Maple.

BP1—Create an off-road bike path bypass parallel to and south of Bridge Street. From California to Spencer.

BP2—Make Park Drive one-way and create a new connection to Shady to eliminate unsafe sight distance problem for cyclists and pedestrians.

BP3—Improve access to Highway 47 bridge over Nehalem River for bike and pedestrian traffic by modifying sidewalk.

BP4—Improve access to Highway 47 bridge over Rock Creek for bike and pedestrian traffic by modifying sidewalk.

TABLE 4-2 (continued).
IMPROVEMENT PROJECTS INCLUDED IN NORTHERN CONNECTOR ALTERNATIVE

Projects to Provide Motor Vehicle Connectivity
C1—An east-west connector along the northern edge of the UGB connecting Rose Avenue across Rock Creek to Lincoln-Washington and State Street
C2—An east-west connector along the northern edge of the UGB connecting State via Stoney Point and Mellinger to N. Mist Drive at Knott
C3—Provide a north/south connections from Bridge Street to the north edge of the Urban Growth boundary by developing Louisiana into a collector.
C4—Provide a north/south connections from Bridge Street to the north edge of the Urban Growth boundary by developing Oregon.
C5—A north-south connection from Heather to Cherry parallel to Highway 47, Mist
C6—A new connection from Cherry to Alder parallel to Highway 47, Mist
C7—An east-west connection between the streets that intersect Bridge between Texas and Spencer
C8—A connection from the west end of Maple to Cougar
C9—Create a connection from the east end of Clatsop across Railroad Grade to Weed.
Projects to Provide Bicycle/Pedestrian Connectivity
B5—Extend bikeway from end of paved surface in Anderson Park to bridge.
B6—Extend bikeway from new bridge to Vernonia Lake.
B7—Extend bikeway from new bridge via schools to California.
B8—Construct a bike bypass of Highway 47 parallel to N. Mist Drive from Riverside Drive at Bridge
B9—Provide pedestrian facilities on N. Mist Drive between Birch and north city limits
B10—Provide pedestrian facilities on Bridge Street between Missouri and Spencer
B12—Provide sidewalk on Rose Avenue from Maple to Roseview Heights.

Connectivity improvements under this alternative would provide several benefits. Shorter trip lengths would be possible, resulting in fewer vehicle miles traveled. Providing more than one route for the same trip would reduce traffic on the main roadway. Greater connectivity also would encourage pedestrian and bicycle trips as trip lengths become shorter and more feasible for a pedestrians or cyclists. The proposed north-south connection along Louisiana would divert traffic from State Street. Other connectivity improvements, including the northern connector, would decrease the load on Highway 47.

The bicycle improvements included in this alternative are a natural continuation of the Banks-Vernonia Linear Trail and connect recreational points of interest in the area.

EVALUATION OF ALTERNATIVES

The overall alternatives were evaluated against TSP goals and policies using the following rating criteria:

- Operation and Safety—Ability to improve the function, capacity, level of service and safety of the roadway system
- Transportation Alternatives—Ability to support the use of alternate modes of transportation (bicycles, pedestrians, and transit) through effective transportation improvements
- Air Transportation—Ability to support efforts to maintain the airport facilities.
- Finance—Economic feasibility and effectiveness.

Table 4-3 summarizes the ratings for each alternative against these criteria.

TABLE 4-3.
EVALUATION OF ALTERNATIVES (1= POOR, 5=EXCELLENT)

Evaluation Criteria	No-Build Alternative	Highway 47 Alternative	Northern Connector Alternative
Operation and Safety	1	4	3
Transportation Alternatives	1	3	4
Air Transportation	3	3	3
Finance	4	3	1
Total	**9**	**13**	**11**

RECOMMENDED ALTERNATIVE

The No-Build alternative does not meet the general intent of the evaluation criteria, which include additional connectivity that preserves capacity and encourages alternate modes of transportation.

The Northern Connector alternative provides no capacity improvement on Highway 47. Intersection LOS problems on Highway 47 would not be addressed, so this alternative does not score high for the operation and safety criterion. The Northern Connector alternative was primarily intended to enhance connectivity. Some reduction in volume on Highway 47 would probably occur, but this alternative was not analyzed to determine whether the reduction would be significant.

Another significant drawback to the Northern Connector is its high cost, which far exceeds all likely available sources. As development happens (i.e. large-scale UGB expansion or development on the north end of town, which could result in increased trip demand for a connector and justify contributions from developers), this alternative may become more feasible and desirable. Those conditions are not expected at this time.

For these reasons, the Highway 47 alternative is recommended. Improvements included in this alternative are shown on Figure 4-1. Chapter 7 contains a study of funding alternatives; several methods of paying for this plan will be combined to present a viable option.

LEGEND

- Study Area Street
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Urban Growth Boundary
- School

Improvements Under Recommended Alternative:

- Improve Roadway to Standards
- Motor Vehicle Safety Improvement
- Bike/Pedestrian Safety Improvement
- Maintain Adequate Level of Service
- Motor Vehicle Connectivity
- Bike/Pedestrian Connectivity

N

Rock Creek
Roseview Heights (Private)
Roseview
Fairway (Private)
Railroad Grade (Private)
Rose
Cedar
Clatsop
Nehalem
4th
5th
6th
3rd
2nd
1st
Columbia
Bridge
Weed
Shady
Park
Grant
East
North
Lincoln-Washington
Louisiana
State
Oregon
Oklahoma
Mississippi
Arkansas
Texas
Missouri
Louisiana
Riverside
Spencer
Alabama
Looker (Private)
Bridge
Knickerson Ct.
Knott
Juniper
Ivy
Heather
Grove
Fir
Elm
Douglas
Cherry
Mist
Birch
Alder
Polk
California
Washington
Adams
Jefferson
Madison
Maple
Cougar
Umatilla
River
Bear Creek
Noakes
Anderson Park
Nehalem River
Vernonia Lake

ST1 ST2 ST3 ST4 ST5 (constructability issues) ST6 ST7 ST8 ST9
SF1 SF2 SF3 SF4 SF5 SF6 SF7 SF8 SF9 SF10 SF11 SF12
BP2 BP3 BP4
LS1
B5 B6 B7 B12
C3 (costs included in ST8 costs)
C4 (preferred)
C9
'A' 'B' 'C' 'D' 'E' 'F' 'G' 'H'

2867002/Recommended.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 4-1
ELEMENTS OF
RECOMMENDED ALTERNATIVE

CHAPTER 5.
PAVEMENT MANAGEMENT

This chapter presents options for addressing identified pavement deficiencies in Vernonia's transportation network. These projects were separated from the alternatives developed in Chapter 4. The projects discussed in this chapter would improve pavement on Vernonia streets to a serviceable level.

SURFACE CONDITION

Surface conditions can be attributed to construction, maintenance, or repair of the roadway network. A road with cracks, potholes, or other visible features often indicates an inadequate sub-base, poor roadway drainage, or damage from flooding or heavy vehicle loads. For this study, a modified version of the Transportation Research Board pavement condition rating system was used to assess roadway condition. This system uses a five-point scale to rate a roadway's surface condition (*Asphalt Overlays for Highway and Street Rehabilitation*, The Asphalt Institute, 1983):

1 **Poor Condition**—Pavement is in poor to very poor condition with extensive and severe cracking, alligatoring (a pattern of cracking in all directions on the road surface), and channeling. Ridability (a measure of surface smoothness) is poor, meaning that the surface is rough and uneven. Reconstruct within 2 to 3 years.

2 **Marginal Condition**—Pavement is in fair to poor condition with frequent cracking, alligatoring, and channeling. Ridability is poor to fair, meaning that the surface is moderately rough and uneven. Reconstruct within 3 to 5 years.

3 **Fair Condition**—Pavement is in fair condition with frequent slight cracking and intermittent, slight to moderate alligatoring and channeling. Ridability is fairly good, with intermittent rough and uneven sections. Resurface within 3 to 5 years.

4 **Good Condition**—Pavement is in good condition with very slight cracking. Ridability is good, with a few rough or uneven sections. Normal maintenance required.

5 **Excellent Condition**—Pavement is in excellent condition with few cracks. Ridability is excellent, with only a few areas of slight distortion.

The TSP inventory identifies the condition of most streets in the City as poor to fair (see Figure 2-2). Some of these ratings are likely due to recent flooding; but most are due to a poor sub-base and poor roadway surface maintenance. Table 5-1 lists the condition of key arterials and collectors in the study area.

TABLE 5-1.
SURFACE CONDITION OF KEY ROADWAYS

Road	Condition Rating	
	Range	Average
Highway 47	2.0—4.0	2.6
Rose Avenue (north of Bridge)	5.0—5.0	5.0
2nd Avenue/Cougar	5.0—5.0	5.0
State Avenue	3.0—5.0	3.6
Louisiana	2.0—4.0	3.0
Nehalem	2.0—3.0	2.5
Knott Street	3.0—3.0	3.0
All Study Area Roadways	1.0—5.0	2.6

CRITICAL IMPROVEMENTS

Arterials and Collectors

Most arterials and collectors are in fair condition or worse, with the exception of stretches of Rose Avenue, State Avenue and Cougar Street. Arterials and collectors in marginal to poor condition that should be improved are as follows:

- PM1—Highway 47 (Bridge Street) between Weed Avenue and Washington Avenue
- PM2—Highway 47 (Bridge Street) between Missouri Avenue and Spencer Avenue (Covered by Project ST1)
- PM3—Highway 47 (Bridge Street) between Riverside and N. Mist Drive (Covered by Project ST1)
- PM4—Highway 47 (Mist Drive)—various sections between Alder Street and Knott Street (Covered by Project ST3)
- PM5—Nehalem—various sections between 6th Street and 2nd Street (Covered by Project ST7)
- PM6—Louisiana between North and Texas (Covered by Project ST8)

Local Roadways

Many local roadways in the City are in fair to poor condition. While not as critical to the overall movement of vehicles, these segments represent areas where substantial repairs will be needed within the next five years or the roads will deteriorate to the point that expensive total rebuild will be required. The worst segments of local roadways are those ranked 1.0, as follows:

- East-West Roadways:

- PM7—Clatsop Street from Rose Avenue to east street end
- PM8—Cougar Street from Weed Avenue to Jefferson Avenue
- PM9—Umatilla Street from 1st Avenue to Weed Avenue
- PM10—River Street from 1st Avenue to Rose Avenue
- PM11—E Street from East Avenue to east street end
- PM12—C Street from State Avenue to west street end
- PM13—B Street from State Avenue to east street end
- PM14—North Street from west street end to Grant Avenue
- PM15—Alabama Avenue from west street end to Riverside Road
- PM 16—Bridge Street from 6th to City limits.

• North-South Roadways:

- PM17—6th Avenue from Nehalem Street to Bridge Street
- PM18—1st Avenue from Clatsop Street to Nehalem Street
- PM19—1st Avenue from Columbia Street to Bridge Street
- PM20—Weed Avenue from Bridge Street to Maple Street
- PM21—Weed Avenue from Cougar Street to Umatilla Street
- PM22—Madison Avenue from Shady Lane to Bridge Street
- PM23—Grant Avenue from North Street to Bridge Street
- PM24—Washington Avenue from A Street to Bridge Street
- PM25—Oregon Avenue from north street end to Mississippi Avenue
- PM26—Arkansas Avenue from Mississippi Avenue to Texas Avenue.

There are also 17 gravel segments of road in the study area. Although these are lower-volume roads, it is recommended that these segments be paved to improve ridability and to minimize particulate pollution (dust) and future maintenance. These improvements, identified collectively as pavement management project PM27, are listed in Appendix C.

CHAPTER 6.
TRANSPORTATION SYSTEM PLAN

This chapter summarizes all elements of the recommended City of Vernonia Transportation System Plan (TSP). The TSP outlines steps for developing a coordinated network of transportation facilities to meet current and future demands on the transportation system. Recommendations are described in the following areas:

- Roadway System Plan
- Bicycle System Plan
- Pedestrian System Plan
- Public Transit System Plan
- Regional Transportation System Plan.

ROADWAY SYSTEM PLAN

In addition to road improvement projects, the roadway system plan includes standards and guidelines for providing a balanced transportation system. A functional classification system is outlined for City streets. Design standards are recommended to ensure that as the transportation infrastructure is improved, it will safely and efficiently serve the traveling public. Road improvement projects described in this element will provide sufficient capacity and improve safety. Recommendations for managing access are also made.

Roadway Functional Classification

The functional classification of a roadway identifies the kind of service it is intended to provide. The functional class generally identifies the type of travel a road is used for and how many vehicles it carries. Vernonia currently has no formal roadway classification system. Such a system has been developed as part of this TSP. Three classifications of roadways were used—arterial, collector, and local. Roadway functional classifications are shown on Figure 2-1.

Arterials provide access between cities and larger towns. They are generally designed for high speed travel and should have minimum interference of through movement. Urban collectors provide access and traffic circulation between residential neighborhoods and the central business district. Rural collectors generally serve travel within the county. Travel distances are typically shorter than on arterials, and more moderate speeds are characteristic. The local road system provides access to land adjacent to the collector network and serves travel of short distances.

In the study area, Highway 47 is an arterial roadway. It is the primary roadway providing access to and through the city. Highway 47 has several names within the city limits. The designation of arterial applies on Rose Avenue from the south city limits to Bridge Street on

Bridge Street from Rose Avenue to Mist, and on Mist from Bridge Street to the north city limit.

State Avenue, River/Cougar/2nd Street, Rose north of Bridge Street, Louisiana, Nehalem and Knott Streets are collectors.

All the remaining roadways in Vernonia are classified as local roadways. A map of the roadway functional classification system is shown in Figure 2-1.

Street Design Standards

A set of design standards has been recommended for the City of Vernonia. The standards define requirements for sidewalks, parking and planting strips and the accommodation of bicyclists. In addition to establishing requirements for each functional classification (arterial, collector, and local), the standards distinguish between roads of urban character and those of rural character. For local roads of urban character, separate standards also have been developed for new construction and retrofitting. The proposed standards are outlined in Table 3-1. Figure 2-1 shows the standards applied to each street in the City.

Roadway Improvements

Roadway improvements have been identified to achieve several purposes: to bring roads up to design standards; to improve surface conditions; to provide cost efficient safety improvements; to maintain acceptable levels of service through 2018; and to improve connectivity to provide greater mobility. The proposed projects are listed in Table 4-1 and shown on Figure 4-1.

Access Management

As the amount of traffic increases on the City's highways, the potential for conflict increases. With the expected growth in the area's traffic, it will become more important for the City to implement access management policies and techniques that limit the number of access points from major highways and encourage the consolidation of driveways.

Many driveways directly access Highway 47, the City's only arterial. This lowers the overall highway capacity and creates conflict points where accidents can occur. The City must work with the Oregon Department of Transportation to limit additional access to Highway 47 to help preserve the corridor and maximize capacity. This will be accomplished through site plan reviews for proposed development along the highway. The City must actively encourage driveway combinations and the relocation of driveways to secondary streets off the highway as opportunities present themselves.

The City should work to remove driveway accesses that are very wide and poorly defined. These accesses create confusion, as it is not known where vehicles will enter the highway. One such location, at the intersection of Bridge Street and Rose Avenue, has been recommended for correction and is included among the safety improvement projects.

BICYCLE SYSTEM PLAN

There are currently no designated bicycle facilities on the street network. The only designated bicycle facility in the study area is the north end of the Banks-Vernonia Linear Trail. This trail runs along the length of the Banks-Vernonia Linear Park that parallels Highway 47 from Vernonia to the south line of the County boundary, then continues to Banks in Washington County.

This TSP identifies several bicycle system improvements. The first major improvement is the development of street design standards and recommended upgrades throughout the study area. Five-foot bike lanes are included on arterials and collectors, which includes Highway 47. An alternate was developed for the congested downtown area by providing a bikeway one block south of the highway. Maple Street, which runs parallel to and south of Bridge Street, will be the designated bike route through the downtown area. On local streets, cyclists will continue to share the main roadway. Several new bikeways are recommended, as listed in Table 4-1.

A scenic route linking recreational attractions such as the Banks-Vernonia Linear Trail, Anderson Park, schools and Vernonia Lake may encourage bike usage while decreasing bike conflicts on Highway 47.

The final step to encourage bicycling in Vernonia is the identification of safety hazards and improvements to alleviate them. The proposed bicycle safety projects are listed in Table 4-1.

PEDESTRIAN SYSTEM PLAN

Walking is an important element of the transportation system. Pedestrian facilities are needed to accommodate short trips, for recreational purposes, and to accommodate non-driving populations such as school-age children. The proposed design standards require sidewalks on all arterials, collectors, and urban streets. On low-volume rural local roads, pedestrians will share the roadway.

The City of Vernonia has sidewalks along roadways through much of the downtown area, in the neighborhoods surrounding State Avenue, and on isolated segments within the UGB. A number of links are missing in the pedestrian network. Sidewalks will be built at most of these locations, including those along arterials and collectors, when these road segments are brought up to design standards. Interim improvements should be considered for better pedestrian environment if upgrading the adjacent roadways does not happen in the near future. The only major roadway segment where pedestrian facilities are needed that is not already included in an upgrade project is Rose Avenue from Maple to Roseview Heights.

It is recommended that pedestrian use be considered when new developments are reviewed. Pedestrian paths that create shortcuts should be encouraged, particularly through the ends of cul-de-sacs to well traveled roads or near schools or other attractions.

Several safety concerns involving conflicts between vehicles, pedestrians and bicyclists have been identified. The proposed projects to address these are listed in Table 4-1.

This TSP supports and encourages the improvements recommended in the City's Downtown Revitalization Plan. The downtown plan recognizes that a pedestrian element is an important component of revitalizing the core commercial area. Improvements are suggested for Bridge Street, the main pedestrian corridor in the downtown area. The pedestrian improvements include the following:

- Intersection crossing improvements
  - Curb extensions at intersections to shorten crossing distances and improve visibility
  - Well-defined crosswalks
- Improvements to the pedestrian environment
  - Continuous street trees spaced at consistent intervals
  - Flowering trees at intersections
  - Sidewalk and furniture zones that create separation from each other
  - Ornamental lighting
  - Improved street furnishings
  - Improved gathering spaces
- Traffic management
  - Curb extensions that define parking zones and provide traffic calming.

PUBLIC TRANSIT SYSTEM PLAN

Transit service in Columbia County is provided by Colco Transportation, operated by Columbia County Transportation. For the planning horizon, it is anticipated that this dial-a-ride van service will serve rural transit demands effectively and economically. It is recommended that the City support and encourage this service in any manner it can, as it is the only service available to the transportation disadvantaged. No additional service is recommended.

Since some residents of Vernonia work in Portland, Beaverton and Hillsboro, commuter travel is a significant consideration. It is recommended that the City of Vernonia work with Columbia County in setting up vanpools and rideshare matching services for commuter travel. It is also recommended that the City encourage and support telecommuting in policy and planning issues that present themselves, as this reduces vehicle trips, especially during peak hours.

The county reports in its TSP that the establishment of formal park-and-ride lots is an important priority. These lots provide convenient locations for car pools and buses to pick up passengers. One of the three future park-and-ride lot locations cited by Columbia County is on Highway 47 south of Vernonia. This lot is part of the county's long-term plans and is expected to serve commuters into Hillsboro and Beaverton. When this lot is operational, the City should assess the demand for a peak hour fixed route bus service through the City to the park and ride lot.

REGIONAL TRANSPORTATION SYSTEM PLAN

Air

National and international air transportation is provided via Portland International Airport, which is located approximately 50 miles southeast of Vernonia. The Vernonia Municipal Airport is located west of the city. This is a public airport and has only a grass landing strip. It is anticipated that the Vernonia Municipal Airport will continue to be used for recreational purposes. It is recommended that the City support efforts to maintain and expand the airport facilities as needed.

Rail

There are no rail facilities in the City of Vernonia. There is no rail passenger service within Columbia County. Amtrak provides service at Kelso, Washington with eight daily trains, four in each direction along the Seattle to Portland corridor. It is not anticipated that rail will directly serve Vernonia or become a component of its transportation system within the planning horizon. No improvements are needed at this time.

Water

There is no scheduled water freight or passenger service to Vernonia. The Port of St. Helens, located about 20 miles to the east, is the closest port on the Columbia River. It is not anticipated that water travel will be a component of Vernonia's transportation system within the planning horizon. No improvements are needed at this time.

Pipeline

Natural gas pipelines that serve Columbia County are owned by Northwest Natural. As reported in the Columbia County TSP, the county is adequately served by pipeline facilities. No needs for expansion have been identified.

CHAPTER 7.
FUNDING ALTERNATIVES

Identifying funding sources is a critical component of the TSP. Recommended improvement projects in the plan are estimated to cost $4.4 million—a significant amount for a small city, even when spread over 20 years. Funding those projects will require investigation of a wide range of potential funding sources. Many of these sources are discussed in this chapter, and a funding package is recommended. All costs are presented in 1999 dollars.

HISTORICAL FUNDING SOURCES

The City of Vernonia has two main sources of income for transportation infrastructure improvements: approximately $100,000 received from the state each year as gas tax revenue; and about $25,000 per year in small-city allotment from a state highway grant. These funds are typically used for minor rehabilitation projects.

POTENTIAL FUNDING SOURCES

Oregon Department of Transportation

Highway 47, Vernonia's only arterial, is a state highway, and repairs and improvements to this road are the responsibility of the state. Several stretches of the roadway are in marginal condition and in need of an overlay. Improvements are needed on the entire length of the road to bring it up to standards. The cost of bringing this highway up to standards and improving the surface condition where necessary is approximately $841,000.

Safety concerns have been reported at several locations along the highway and improvements are warranted. Safety improvements have been recommended where Highway 47 intersects the following streets: Rose, Weed, Mist, and State. Improved bicycle and pedestrian access is needed at the Highway 47 bridge crossings of the Nehalem River and Rock Creek. The cost of these safety improvements is approximately $156,000.

By the planning year (2018), Highway 47 will be carrying much more traffic than today. Two intersections that will need to be signalized include Rose and State. Signalization and associated widening of these intersections is expected to cost approximately $546,000. The cost of providing all the improvements to Highway 47 is $1,543,000, more than one-third of the total TSP cost.

The draft 2000-03 Oregon Transportation Improvement Program (TIP) was recently published. The only project scheduled for Highway 47 from Highway 26 to the north end of Vernonia is a preservation project. There are many demands on the state's resources for transportation improvements. The City will have to continue lobbying for the limited funds available, especially through the current update of the 2000-03 TIP.

Columbia County

Columbia County owns several road sections in Vernonia that are in need of improvements to meet standards. These roads include parts of Cougar, River and Second, Rose Avenue from Roseview Heights to the UGB, State/Lincoln/Washington from E Street to the UGB, Louisiana from the unimproved section to the UGB, and Knott Street. The county's cost to repair these roads is approximately $400,000. To improve the north-south connectivity of the street system, Louisiana has been recommended for development and upgrade of the gravel sections. Paving the northern section of Louisiana is essential to the success of this connection. The City needs to lobby the County Commission for improvement of county roads in Vernonia. The City is willing to take over the roadways once they are improved to standards.

Federal Grant Programs

Federal grant programs are available to help municipalities finance transportation improvements. For example, the Transportation Efficiency Act, TEA-21, includes funding for enhancement projects. The City is in the process of applying for money from this fund to complete a downtown revitalization project that involves adding and upgrading sidewalks. The City has also applied for money from the same program to construct the bicycle/pedestrian facilities from the Anderson Park bridge to Vernonia Lake and the High School/Washington Grade School/Head Start area.

It is not possible to predict how much funding the City can receive from federal programs. By having the projects defined and prioritized and the costs estimated, the City will be ready to apply for whatever money becomes available. It is strongly recommended that the City take advantage of these programs to the extent possible.

System Development Charges

System development charges (SDCs) are fees the City collects from developers when they develop properties that will use the transportation system. SDCs are collected when building permits are issued. The revenue can be used to finance capital improvements required to provide municipal services to the development. Operation, maintenance, and replacement costs cannot be financed or repaid by SDC revenues.

As established in ORS 223, an SDC has two principal elements—reimbursement and improvement. The reimbursement portion of the SDC is the fee for buying into existing or under-construction capital facilities. The reimbursement fee represents a charge for using excess capacity in an already-paid-for existing facility. The revenue from this fee is typically used to pay back existing loans for improvements. The improvement portion of the SDC is a fee to cover the cost of capital improvements required to provide increased capacity to serve the new development.

Vernonia currently does not charge an SDC for transportation. As the City is expected to grow by about 1,200 dwelling units and 600,000 square feet of commercial and industrial development over the planning horizon, it is strongly recommended that the City institute SDC fees based on projected capital costs for the proposed transportation improvements.

Funding transportation projects with SDCs is an equitable option because newcomers pay for the extra services needed to support them. SDCs could cover about $1.7 million of the recommended improvements. Some of the identified improvements could be considered for direct improvement as part of development in the immediate vicinity.

Street Utility Fees

Utility fees are monthly charges to all residences, businesses, and other users of the transportation system. Although user fees are not sufficient to finance major capital construction projects, they can be used to pay for maintenance and minor rehabilitation projects. These fees are established by the City Council and may be modified as needed to account for changes in operation and maintenance costs, need for new improvements, etc.

The monthly charges are typically based on a user classification (e.g., single-family dwelling, multi-family dwelling or commercial establishment). Projects eligible to be funded by the utility fee amount to approximately $264,000.

Local Improvement Districts

Local improvement districts (LIDs) are set up to finance specific projects that benefit a distinct set of properties. Property owners may petition the City to establish an LID and to issue tax-exempt bonds to pay for the improvements. The property owners are then assessed for the payment of the debt.

While this is not a particularly viable financing option for Vernonia today, as development occurs there may be property owners to whom an LID would prove attractive.

General Obligation Bonds

Selling municipal general obligation (GO) bonds is the most common form of local financing for large-scale capital improvements. GO bonds use the City's basic taxing authority and are retired with property taxes based on distribution of the bonded obligation across the City's assessed valuation. GO bonds are normally sold to finance facilities that benefit an entire community. They must be approved by a majority of the City's voters.

GO bonds are backed by the City's full faith and credit, as the City must pledge to assess property taxes sufficient to pay the annual debt service. This portion of the property tax is outside the state constitutional restriction limiting property taxes to a fixed percentage of assessed value.

The general procedure followed to finance transportation improvements with GO bonds is as follows:

- Determination of the capital costs required for the improvement
- An election by the voters to authorize the sale of bonds
- Sale of the bonds
- Use of the bond sale revenue to pay the capital costs of the improvement.

GO bonds can be "revenue supported" by pledging a portion of the user fee toward repayment of the bond debt. This reduces or eliminates the need for additional property taxes to retire the bonds, unless the proposed revenue source fails to provide the projected amount. Revenue supported GO bonds have most of the advantages of revenue bonds (described below), plus a lower interest rate and ready marketability.

The disadvantage of GO bond debt is that it is often added to the debt ratio of the City, thereby restricting the City's flexibility to issue debt for other purposes.

Revenue Bonds

Revenue bonds are similar to GO bonds, but they rely on utility-generated revenue (i.e., user fees) to retire the bonded indebtedness. The primary security for revenue bonds is the City's pledge to charge user fees sufficient to pay all operating costs and debt service. Because the source of revenue for these bonds is less reliable than that of GO bonds, they typically have slightly higher interest rates.

Many communities prefer revenue bonding because no additional property taxes are required and because repayment of the debt obligation is limited to system users. Moreover, revenue bonds do not count against a City's direct debt, which can be a crucial advantage for a municipality near its debt limit. Rating agencies closely evaluate the amount of direct debt when assigning credit ratings. There normally are no legal limitations on the amount of revenue bonds that can be issued. However, excessive issue amounts are generally unattractive to bond buyers because they represent high investment risks.

Under ORS 288.805-288.945, cities may elect to issue revenue bonds for revenue producing facilities without a vote of the electorate. Certain notice and posting requirements must be met and a 60-day waiting period is mandatory.

Bond lenders typically require two securities for revenue bonds that are not required for GO bonds. The City must set user fees such that the projected cash flow will be at least 125 percent of the annual debt service; and the City must establish a bond reserve fund equal to the maximum annual debt service or 10 percent of the bond amount, whichever is less.

RECOMMENDED APPROACH

The recommended approach for funding transportation system improvements is summarized in Table 7-1 and described below:

- Apply the state gas tax revenue and the state highway grant to the annual cost of upgrading the surface condition of the worst rated roads.
- Use the utility fee to pay for the remainder of the annual cost of upgrading surface conditions. There are currently about $264,050 of such improvements needed. After applying the state funds totaling $125,000, the balance of $139,050 would be paid through an annual utility fee.
- Continue to request that the state fund the road improvements needed to bring Highway 47 up to minimum design standards and to pay for the

safety improvements needed in this corridor. The total cost for repairs, safety improvements and capacity improvements is $1,543,000.

- Request that the county make appropriate repairs to the street segments listed before including these roads in the City's system. The repairs needed to county roads are approximated to cost $400,000.
- After these measures have been taken and assuming that the state and county agree to fund the improvements of their roads, $2.1 million of projects will remain to be funded. $1.7 million of this is for capacity-increasing projects that are eligible for funding by an SDC. However, assuming a growth of 1,352 EDUs (equivalent development units), the SDC would be about $1,260 per dwelling unit. If the SDC of Vernonia is significantly higher than in nearby areas, developers will choose to develop elsewhere. Assuming that a $1,000 transportation SDC is more reasonable to the City and the developing community, $1,352,000 will be raised for transportation improvements.
- The remaining balance of projects to be funded is $350,000 of SDC-eligible projects plus $364,000 of safety projects not eligible for any other funding. The total balance is $714,000. It is recommended that a general obligation bond be initiated to fund this balance. It is strongly recommended that the City take advantage of any federal grant programs that become available during the planning horizon. Any additional money that the City receives will help offset the amount of debt required.

Each proposed improvement project has been assigned a priority rating for implementation. The ratings are included in Table 7-1. The priorities were established at a public-involvement workshop based on the following criteria:

- High priority is given to projects that improve safety, especially pedestrian safety.
- High priority is given to projects to improve the City's commercial area.
- High priority is given to linear trail extensions.
- Low priority is given to collector improvements outside the City's commercial area.

TABLE 7-1.
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE

	Estimated Project Cost	Share of Contribution to Project Cost				Priority
		SDC	Utility Fee	State[a]	County	
Upgrade Roadways to Design Standards						
ST1. Highway 47, East Ave. to N. Mist Drive; Widen and overlay various sections	$304,000			$304,000		Medium
ST2. Highway 47, Maple St. to Bridge St.; Full retrofit to bring up to urban arterial	$121,000			$121,000		High
ST3. Highway 47, Bridge St. to north City limit; Widen and overlay various sections	$416,000			$416,000		Medium
ST4. State Ave., D St. to City limits; Overlay entire section and add sidewalks	$122,000	$59,000	$32,000		$31,000	Low
ST5. 2nd Ave./Cougar St./River St., city limits to Rose Ave.; Widen overlay add sidewalk	$85,000	$72,000			$13,000	Low
ST6. Knott St., N. Mist Drive to City limits; Widen, overlay and add sidewalk	$175,000	$149,000			$26,000	Low
ST7. Nehalem St. between 6th and Rose Ave.; Widen and overlay	$175,000	$175,000				Low
ST8. Louisiana Ave., Mellinger to Texas; Widen, pave and overlay as needed	$231,000	$114,000	$14,000		$103,000	Low
ST9. Rose Ave., Roseview Heights to UGB; Widen, pave and overlay as needed	$56,000	$48,000			$8,000	Low
Group Subtotal	**$1,685,000**	**$617,000**	**$46,000**	**$841,000**	**$181,000**	

a. The inclusion of a project on this list shall not be relied upon to satisfy consistency requirements of Section 660-012-0060 of the Transportation Planning Rule if construction funding for the project has not been committed. Oregon Transportation Commission (OTC) is not obligated to pay for these projects.

TABLE 7-1 (continued).
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE

	Estimated Project Cost	Share of Contribution to Project Cost				Priority
		SDC	Utility Fee	State[a]	County	
Safety Improvements						
SF1A. Intersection of Bridge and Rose, beacon	$25,000			$25,000		High
SF1B. Intersection of Bridge and Rose, signal and lanes	$370,000	$190,000		$180,000		Medium
SF2. Intersection of Bridge and Weed and Railroad Grade	$11,000			$11,000		High
SF4. Widen Bridge Street in front of Lincoln School	$8,000	$8,000				High
SF5. Realign intersection of Bridge and Louisiana/Texas	$26,000			$26,000		Medium
SF6. Close access from Spencer to Highway 47	$35,000			$35,000		High
SF7. Improve intersection of Bridge and Mist	$23,000			$23,000		High
SF8. Intersection of Rose and River	$59,000			$59,000		High
SF9. Intersection of California and Bridge	$1,000			$1,000		High
SF10. Intersection of State and Stoney Point	$96,000	$96,000				High
SF11. Intersection of Mellinger and Stoney Point.	$38,000	$38,000				High
SF12. O-A Hill alley area	$2,000					Medium
Group Subtotal	**$694,000**	**$332,000**	**$0**	**$360,000**	**$0**	
Bicycle/Pedestrian						
SF3.Bikeway from Bridge Street to Maple	$75,000	$75,000				High
BP2. Park Drive one-way and new connection to Shady	$134,000					Medium
BP3.Highway 47 bridge over Nehalem River	$10,000			$10,000		High
BP4. Highway 47 ridge over Rock Creek	$10,000			$10,000		High
BP5. Extend bikeway in Anderson Park to proposed bridge.	$10,000	$10,000				High
BP6.Extend bikeway from new bridge to Vernonia Lake.	$250,000					High
BP7. Extend bikeway from new bridge to California.	$101,000					High
BP12.Sidewalk on Rose Ave. from Maple to Roseview Heights	$92,000	$92,000				Low
Group Subtotal	**$682,000**	**$177,000**	**$0**	**$20,000**	**$0**	

a. The inclusion of a project on this list shall not be relied upon to satisfy consistency requirements of Section 660-012-0060 of the Transportation Planning Rule if construction funding for the project has not been committed. Oregon Transportation Commission (OTC) is not obligated to pay for these projects.

TABLE 7-1 (continued).
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE

	Estimated Project Cost	Share of Contribution to Project Cost				Priority
		SDC	Utility Fee	State[a]	County	
Level of Service						
LS1. Left turn lane at State Street & signal	$226,000	$120,000		$106,000		Low
Group Subtotal	**$226,000**	**$120,000**	**$0**	**$106,000**	**$0**	
Connectivity						
C4. Connections from Bridge Street to UGB via Oregon	$300,000	$300,000				Medium
C9. Connection from the Clatsop to Weed.	$43,000	$43,000				Medium
Group Subtotal	**$343,000**	**$343,000**	**$0**	**$0**	**$0**	
TSP Recommended Alternative Subtotal	**$3,630,000**	**$1,589,000**	**$46,000**	**$1,327,000**	**$181,000**	
Pavement Management and Minor Improvements						
PM1. Highway 47, Bridge from Weed Ave. to Washington Ave.	$90,000			$90,000		High
PM7. Clatsop From Rose to east end	$10,000		$10,000			Low
PM8. Cougar from Weed to Jefferson	$12,000		$12,000			Low
PM9. Umatilla St. from 1st Ave. to Weed Ave.	$80,000	$74,000	$6,000			Low
PM10. River St. from 1st Ave. to Rose Ave.	$5,000		$5,000			Low
PM11. E St. from East Ave. to east-St. end	$10,000		$10,000			Low
PM12. C St. from State Ave. to east-St. end	$11,000		$11,000			Low
PM13. B St. from State Ave. to east-St. end	$11,000		$11,000			Low
PM14. North St. from west-St. end to Grant Ave.	$62,000	$62,000				Low

a. The inclusion of a project on this list shall not be relied upon to satisfy consistency requirements of Section 660-012-0060 of the Transportation Planning Rule if construction funding for the project has not been committed. Oregon Transportation Commission (OTC) is not obligated to pay for these projects.

TABLE 7-1 (continued).
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE

	Estimated Project Cost	Share of Contribution to Project Cost				Priority
		SDC	Utility Fee	State[a]	County	
Pavement Management and Minor Improvements (continued)						
PM15. Alabama Ave. from west-St. end to Riverside Drive	$10,000		$10,000			Low
PM16. Bridge St. from 6th to city limits	$36,000	$36,000				High
PM17. 6th Ave. from Nehalem St. to Bridge St.	$5,000		$5,000			High
PM18. 1st Ave. from Clatsop St. to Nehalem St.	$9,000	$9,000				Low
PM19. 1st Ave. from Columbia St. to Bridge St.	$9,000	$9,000				Medium
PM 20. Weed Ave. from Bridge St. to Maple St.	$74,000	$74,000				Medium
PM21. Weed Ave. from Cougar St. to Umatilla St.	$74,000	$74,000				Low
PM22. Madison Ave. from Shady Lane to Bridge St.	$8,000		$8,000			High
PM23. Grant Ave. from North St. to Bridge St.	$8,000		$8,000			High
PM24. Washington Ave. from A St. to Bridge St.	$15,000		$15,000			High
PM25. Oregon Ave. from north-St. end to Mississippi Ave.	$23,000	$23,000				Medium
PM 26. Arkansas Ave. from Mississippi Ave. to Texas Ave.	$18,000	$18,000				Low
PM 27. Pave Public Gravel Streets						
PM27A.North St. from Louisiana to Oregon	$9,000	$9,000				Low
PM27B.Cedar St., from west end to east end	$9,000		$9,000			Low
PM27C.Maple St., from west end to Rose Ave.	$9,000		$9,000			Low
PM27D.H St., from State Ave. to end	$9,000		$9,000			Low
PM27E.D St., from State Ave. to end	$9,000		$9,000			Low
PM27F.B St., from Louisiana to end	$4,000		$4,000			Low
PM27G.Juniper St., from Mist to end	$9,000		$9,000			Low
PM27H.Ivy St., from Mist to end	$13,000		$13,000			Low
PM27J.Douglas St., from Mist to end	$9,000		$9,000			Low

a. The inclusion of a project on this list shall not be relied upon to satisfy consistency requirements of Section 660-012-0060 of the Transportation Planning Rule if construction funding for the project has not been committed. Oregon Transportation Commission (OTC) is not obligated to pay for these projects.

TABLE 7-1 (continued).
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE

	Estimated Project Cost	Share of Contribution to Project Cost				Priority
		SDC	Utility Fee	State[a]	County	
Pavement Management and Minor Improvements (continued)						
PM27K.Birch St., from Mist to end	$14,000		$14,000			Low
PM27L.6th Ave., from end to Nehalem	$9,000		$9,000			Low
PM27M.5th Ave., from Nehalem to Bridge St.	$9,000		$9,000			Low
PM27N.4th Ave., from end to Nehalem	$23,000	$23,000				Low
PM27O.2nd Ave., from end to beginning of pavement	$9,000		$9,000			Low
PM27P.Lincoln-Washington Ave., from State Ave. to midway	$23,000				$23,000	Low
PM27Q.East Ave., from E to D	$9,000		$9,000			Low
PM27R.Polk Ave., from Alder to south end	$23,000	$23,000				Low
Group subtotal	**$779,000**	**$434,000**	**$232,000**	**$90,000**	**$23,000**	
TSP and Pavement Management Projects Total	**$4,409,000**	**$2,023,000**	**$278,000**	**$1,417,000**	**$204,000**	

a. The inclusion of a project on this list shall not be relied upon to satisfy consistency requirements of Section 660-012-0060 of the Transportation Planning Rule if construction funding for the project has not been committed. Oregon Transportation Commission (OTC) is not obligated to pay for these projects.

CHAPTER 8.
LAND USE ORDINANCE MODIFICATIONS

The goals of this TSP indicate the City's wishes to evolve into a City with a safe and efficient transportation system—a system that encourages alternative modes of transportation and is financially viable. To accomplish this, many improvements to the existing road network are recommended. Recommendations have also been made to change policies and standards. Implementing these recommendations requires changes in the zoning ordinance and the comprehensive plan. This chapter outlines those changes. Additions to existing code are written in parentheses and deletions are shown as underlines.

COMPREHENSIVE PLAN REVISIONS

Upon its adoption, the TSP will become an element of the Vernonia Comprehensive Plan. The following changes to the Comprehensive Plan will carry out the goals and intent of this TSP.

Plan Objectives # 10—*Modify as follows*: Transportation facility (and safety) improvements, including City streets, state and county access routes and development of the City's airport, will provide key support to the overall improvements of the City's economy (while encouraging alternative modes of transportation).

Planning Commission Review Draft, 7/96 Transportation System Goal 12 paragraph 1—*Modify as follows*: The City of Vernonia recognizes the need for a safe, convenient and economic transportation system. The transportation system is composed of all facilities that transport people and goods to, from and within the City, utilizing a spectrum of vehicles (modes) that includes automobiles, trucks, bicycles, buses, trains and airplanes (and pedestrians). These facilities include streets, roads, highways railroads and airports (and sidewalks).

Planning Commission Review Draft, 7/96 under Streets and Roads—*Delete third paragraph; add the following*:

> The functional classification of streets within the urban growth boundary is as described in the Transportation System Plan. The designation of arterial applies on Rose Avenue from the south city limits to Bridge Street and on Bridge Street from Rose Avenue to Mist, and on Mist from Bridge Street to the north city limit.
>
> State Avenue, River/Cougar/2nd Street, Rose north of Bridge Street, Louisiana, Nehalem and Knott Streets are collectors.
>
> All remaining roadways in Vernonia are classified as local roadways. A map of the roadway functional classification system is shown in Figure 2-1 of the Transportation System Plan.

Planning Commission Review Draft, 7/96 under Streets and Roads Policies, #3—*Modify as follows*: The City, continues to adopt Columbia County (in adopting the Transportation System Plan, has adopted its own) street and road improvement standards. (These standards will) as a means of ensuring (ensure) that new and existing roads and streets meet transportation needs of the City of Vernonia (now and in the future).

Planning Commission Review Draft, 7/96 under Streets and Roads Policies, #7—*Modify as follows*: The Planning Commission shall work with downtown business people to review and recommend changes in on- and off-street parking and loading space arrangements in order to better serve the needs of the downtown area. (They will also work to consolidate access to Highway 47 where possible and to minimize the width and clearly define existing access points.)

ORDINANCE REVISIONS

In general, the Planning Commission, through its zoning ordinance, currently has the authority to require appropriate frontage improvements, to dictate the location and number of access points, and to ensure that roads are built to the design standards. The following ordinance revisions help clarify and emphasize the intent of the TSP.

Subdivision Ordinance No. 710

Design Standards Section 26. Streets. (2)—*Modify minimum right-of-way requirements table as follows*:

Type of Street	Minimum Right-of-Way (feet)	Required Roadway Width (feet)
Urban		
Local – new construction	50	28
Local – preferred retrofit	46	24
Local – minimum retrofit	25	18
Collector	62	38
Arterial	70	48
Rural		
Local	30	18
Collector	62	36
Arterial	60	34
Radius for turn around at end of cul-de-sacs	50	40
Alleys	20	20

Section 26. Streets. (9) Cul-de-sac—*Revise maximum cul-de-sac length to 200 feet*. The length could be exceeded if topographical constraints are present or if bike/pedestrian paths are provided to ensure alternative mode connectivity.

Section 27 Blocks. (2)—*Revise size to maximum circumference length of 1,600 feet.* The length could be exceeded if topographical constraints are present or if bike/pedestrian paths are provided to ensure alternative mode connectivity.

Section 27 Blocks. (3) Easements (c) Pedestrian and Bicycle Ways—*Modify as follows*: When desirable for public convenience, a pedestrian or bicycle way may be required to connect to a cul-de-sac or to pass through an unusually long or oddly shaped block or otherwise provide appropriate circulation (especially where a shortcut would be created to a pedestrian attraction, such as a school, park or neighborhood commercial development).

Section 37. Street Improvements in Existing Platted Areas. (1)—*Modify as follows*: No building permit shall be issued for the construction of any new building or structure, or for the remodeling of any existing building or structure that results in an increase in size or zoning change with change in use of the street, excepting remodel permits for single-family dwellings not resulting in a change of use, unless the applicant for said building permit agrees to construct street improvements, which shall include curbs (sidewalks and all other frontage improvements required in the design standards for the roadway functional classification), along all City streets that abut the property described in the building permit.

Zoning Ordinance No. 711

Transportation considerations required by the Transportation Planning Rule that are not fully covered by Subdivision Ordinance 710 or Zoning Ordinance 711 are as follows:

- Approval process for Transportation Improvements
- Policies for protection of Transportation Facilities
- Policies for Pedestrian and Bicycle Circulation
- Policies for coordinated review of Land use decisions
- Access
- Off Street Parking
- Approval Requirements for Transportation Improvements
- Zoning changes
- Design review

A more comprehensive approach to these items is proposed in Appendix E as a revision and new Article XVI to Zoning Ordinance 711.

CHAPTER 9.
TRANSPORTATION PLANNING RULE COMPLIANCE

The Transportation Planning Rule (OAR, Chapter 660, Division 12), requires local jurisdictions to prepare and adopt a Transportation System Plan (TSP). This chapter describes the requirements of the TPR and how the Vernonia TSP complies with them.

TSP PREPARATION AND COORDINATION

Table 9-1 describes how preparation of the City of Vernonia TSP followed TPR requirements included in OAR 660-12-015.

TABLE 9-1.
COMPLIANCE WITH TSP PREPARATION REQUIREMENTS

Requirement Under OAR 660-12-015	City of Vernonia TSP
(3)(a) Local TSPs shall establish a system of transportation facilities and services adequate to meet identified local transportation needs and shall be consistent with regional TSPs and adopted elements of the state TSP.	A system of street, bicycle, and pedestrian facilities and services have been defined that meet identified local needs. These elements are consistent with regional TSPs.
(4) Cities and counties shall adopt regional and local TSPs as part of their comprehensive plans	Adoption to follow
(5) The preparation of TSPs shall be coordinated with affected state and federal agencies, local governments, special districts, and private providers of transportation services	A technical advisory committee was established to review and guide the development of this TSP. All relevant groups were involved[a]
(6) Mass transit, transportation, airport and port districts shall participate in the development of TSPs for those transportation facilities and services they provide.	None of these services are provided within the study area.

a. The members of the TSP technical advisory committee were as follows:
Robyn Bassett, Vernonia Public Works Director/Interim City Administrator
Ross Kevlin, ODOT Region 1 TGM Planner
Alan Danaher, Kittleson Traffic Engineer/Planner (KCM subconsultant)
Bob Reitmajer, KCM Project Manager for TSP
Kevin France, KCM Engineer/Vernonia City Engineer

TSP ELEMENTS

Table 9-2 describes how the Vernonia TSP meets the TSP requirements in OAR 660-12-020.

TABLE 9-2.
COMPLIANCE WITH REQUIREMENTS FOR TSP ELEMENTS

Requirement Under OAR 660-12-020	City of Vernonia TSP
(1) The TSP shall establish a coordinated network of transportation facilities adequate to serve state, regional and local transportation needs	Numerous upgrades and improvements have been recommended to create a street, bicycle and pedestrian network designed to serve the state, regional and local needs
(2) The TSP shall include the following elements:	
a) A determination of transportation needs	The needs are reported in Chapter 4.
b) A road plan for a system of arterials and collectors and standards for the layout of local streets and other important non-collector street connections.	A functional classification system, and street design standards have been developed and are reported in Chapter 4.
c) A public transportation plan which reviews services for transportation disadvantaged, describes inter-city bus and passenger rail service, identifies existing and planned transit service.	Descriptions of the existing and future conditions of public transportation are included in Chapters 2 & 3.
d) A bicycle and pedestrian plan for a network of bicycle and pedestrian routes throughout the planning area.	The bicycle and pedestrian plan are outlined in Chapter 6.
e) An air, rail, water and pipeline transportation plan which identifies existing and proposed facilities.	The existing and future conditions are described in Chapters 2 & 3.
h) Policies and land use regulations for implementing the TSP	Modifications to policy and land use regulations are included in Chapter 8.
i) A transportation financing program for those areas within an urban growth boundary containing a population greater than 2,500.	Although Vernonia's population is not greater than 2,500, a finance plan is included in Chapter 7.

TABLE 9-2 (continued)
COMPLIANCE WITH REQUIREMENTS FOR TSP ELEMENTS

Requirement Under OAR 660-12-020	City of Vernonia TSP
(3) Each of the elements—public transportation, bicycle and pedestrian—shall contain the following components:	
a) An inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition.	Chapter 2 describes the transportation facilities.
b) A system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and levels of services.	The planned improvements are discussed in Chapter 4, and the system plan is described in Chapter 6.
c) A description of the location of planned facilities, service and major improvements, establishing the general corridor within which the improvements may be sited.	This description of the planned improvements is given in Chapter 4.
d) Identification of the provider of each transportation facility or service.	Transportation providers are identified in Chapter 2.

LEGEND

- Study Area Street
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Urban Growth Boundary
- School

Improvements Under Recommended Alternative:

- Improve Roadway to Standards
- Motor Vehicle Safety Improvement
- Bike/Pedestrian Safety Improvement
- Maintain Adequate Level of Service
- Motor Vehicle Connectivity
- Bike/Pedestrian Connectivity

N

Rock Creek
Knickerson Cr.
Roseview Heights (Private)
Roseview
Rose
Cedar
Clatsop
Railroad Grade (Private)
Fairway (Private)
Weed
4th
6th
5th
3rd
2nd
1st
Nehalem
Columbia
Bridge
Shady
Park
Grant
East
North
Lincoln-Washington
State
Louisiana
Oregon
Oklahoma
Mississippi
Arkansas
Texas
Missouri
Spencer
Riverside
Alabama
Locker (Private)
Bridge
Knott
Juniper
Ivy
Heather
Grove
Fir
Elm
Douglas
Cherry
Birch
Alder
Polk
Mist
Maple
Cougar
Umatilla
River
Adams
Washington
Jefferson
Madison
California
Anderson Park
Vernonia Lake
Bear Creek
Noakes
Nehalem River

ST9 ST4 ST8 ST6 ST3 ST7 ST2 ST1 ST5 (constructability issues)

SF10 SF11 SF12 SF1 SF2 SF3 SF4 SF5 SF6 SF7 SF8 SF9

BP2 BP4 BP3

LS1

B12 C9 B5 B7 B6

'H' 'G' 'F' 'E' 'D' 'C' 'B' 'A'

C3 (costs included in ST8 costs)

C4 (preferred)

2867002/Recommended.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORTATION SYSTEM PLAN

Figure 4-1
ELEMENTS OF
RECOMMENDED ALTERNATIVE

APPENDIX A
AGENDAS AND MINUTES
OF PUBLIC INVOLVEMENT MEETINGS

City of Vernonia Transportation System Plan
July 1999

CITY OF VERNONIA
PLANNING COMMISSION MEETING

June 18, 1998

AGENDA

1. Master Capital Plan
   - Expectations for level of service to be provided - As a starting point for discussion, we propose the following as the basis for master planning for the street and storm drainage systems:
     * Area west of Rose Avenue - Roadside ditches and culverts
     * Central core (area between Rose Avenue and California Avenue) - Curbs and storm sewers
     * O-A Hill area - Roadside ditches and culverts
     * North Mist area - Combination of ditches and storm sewers with additional diversion(s) to the Nehalem River
2. Downtown Revitalization
   - Introduction of the project
   - Review of scope of work
   - Discussion on the selection of a theme
   - Discussion about July 16th design charette
3. Transportation System Plan
   - Goals and policies - See attached draft generated for discussion purposes
   - Sidewalk location
4. Schedule

KCM, Inc. • 7080 SW Fir Loop • Portland, OR 97223-8022 • Tel 503 684-9097 • Fax 503 598 0583

Citizen Advisory Committee Meeting for Vernonia Transportation System Plan (TSP) 6/18/98. Minutes.

Attached agenda for Planning Commission meeting describes TSP items along with other planning items. Only items and discussion relevant to the TSP are recorded.

Because there are several planning and project items going on in Vernonia at this time, same Advisory Committee (CAC) was formed for all. The committee consists of:

Planning Commission: Dan Brown (chair), Matt Chesley, Chris Cota, Wallace Vaughn, Norman Brown, Nancy Dailey (not present), Kathy Morrison (secretary)

Parks Committee: Matt Chesley, Jerry Keenon (president), Darlene McLeod, DeLoris Webb, and Bob Ensign

City Staff: Gordon Zimmerman (City Manager), Robyn Basset (Public Works Director), and Kevin France (City Engineer, KCM)

Kevin France made a presentation and led discussion on master planning:

Master Plan for 20 years, CIP for 5 years, drainage and streets

Rural vs. urban crossection advantages and disadvantages were discussed. Urban with curb gutter and below ground drainage is more expensive, may require treatment and drains faster. Rural with ditches and culverts is less costly, provides for slower drainage and some bio treatment. Discussion of City responsibility vs. homeowners' responsibility on maintenance followed. Currently City provides maintenance of street system and associated drainage.

Possible division between urban and rural crossection, commercial area curb/gutter & underground drainage, residential area can function as rural. This would keep curb and gutter to the downtown core between Rose and California. Sidewalks would be in curbed areas and may not be required elsewhere. Currently City Ordinance required curb/gutter in new subdivisions.

Bob Reitmajer made a presentation of TSP process and steps as outlined in the project work scope. The goals and policies were reviewed no comments or corrections were received either at the meeting or afterwards from the Citizen Advisory Committee.

Over 25 people attended the meeting. Next CAC meeting will be in September or October.

Memo KCM

Date:	August 3, 1998
To:	Robyn Basset, City of Vernonia, Ross Kevlin, (ODOT, Region 1), Jim Sampson (ODOT, District 2A), Kevin France, Steve Matthews, Jamie Damon (JLA)
c:	*Central Files, INFO: John Davies (KCM), David Clark (Kittelson)*
From:	Bob Reitmajer
Project No.:	2867002, Vernonia TSP
Subject:	Vernonia TAC meeting 8/6/98 at City Hall/Library 2:00 to 4:00 p.m.

This is to confirm Vernonia TSP, TAC meeting.

AGENDA

TSP:

Policies

Plan Outline

Inventory including intersections

Public Involvement

DOWNTOWN REVITALIZATION:

Bulbouts

Bikeway 1 block South

Street vs. Cobra Lighting

Agenda by e-mail and FAX

Attachments by e-mail and mail

KCM, Inc. • 7080 SW Fir Loop • Portland, OR 97223 • Tel 503 684-9097 • Fax 503 598-0583

Technical Advisory Committee Meeting for Vernonia Transportation System Plan (TSP) 8/6/98. Minutes.

Initially one Advisory Committee was envisioned for this project. It has become obvious that such a committee would have too many people and would be difficult to work with. Attached agenda describes TSP items along with other planning items. Only items and discussion relevant to the TSP are recorded.

Because there are at least two planning projects going on in Vernonia at this time, same Advisory Committee (TAC) was formed for both. The committee consists of:

Gordon Zimmerman (Vernonia City Manager), Robyn Basset (Public Works Director), Kevin France (City Engineer, KCM), Jim Sampson (ODOT District 2A – Manning), Ross Kevlin (ODOT TGM, Region 1), Jamie Damon (Public involvement, JLA) and Bob Reitmajer (TSP project Manager, KCM)

Policies were presented. There were no additional comments. City and ODOT staff proposed revisions previously that were incorporated.

Plan outline was presented and reviewed. Following comments and suggestions that will be incorporated in the plan were made:

Under existing conditions pipeline: There is a natural gas pipeline through town.

Under Future Conditions: Outline needs of all modes and future traffic and roadway operations. For example resolve gaps in bike network. Also connect Downtown Revitalization Plan concepts. Address for future consideration by references STA's (local street vs. state highway in the same location, obtain information from Carolyn Gassaway, ODOT Project Manager for State Highway Plan).

Public Involvement: Jamie Damon reviewed public involvement which consists of TAC and CAC meetings, open houses and distributing information through other means. Jamie will connect with the City and write up an article about TSP for next quarterly issue of newsletter (September). She will also prepare a glossary of terms/issues for CAC distribution.

Various issues:

Access management along state highway, especially in downtown area. This plan inventories the existing accesses for future consideration. The Downtown Revitalization Plan is exploring possible consolidation of accesses.

Bicycles. Safety and conflict between bikeway and parking. There is suggestion to have a main bikeway running through downtown along Maple one block south of Bridge Street. This routing would also facilitate a better connection to Banks Vernonia Linear Park Trail and its extension.

Parking. Concern about parking availability in downtown area. There is additional parking for 40 cars created near new City Hall. Additionally new parking will be developed at the site of old City Hall when it is replaced.

Next CAC meeting could be held September 24 during Planning Commission workshop.

Vernonia TSP
2867002

Alternatives Workshop
Agenda

Portland 11/10/98 KCM Office

Invited Attendees:

Robyn Bassett, Vernonia Public Works Director/Interim City Administrator
Ross Kevlin, ODOT, Region 1 TGM planner
Alan Danaher, Kittelson, Traffic Engineering/Planning
Kevin France, KCM, Vernonia City Engineer
Bob Reitmajer, KCM, Project Manager

1. Introductions
2. Presentation of modeling and future capacity needs
3. Proposed standards review
4. Safety Improvements, general
5. Alternate mode improvements, safety, accessibility and connectivity
6. Capacity improvements based on modeled needs
7. Connectivity Improvements
8. Impacts of possible Urban Growth Boundary Extension.
9. Priority Projects summarized and briefly scoped.

To: Attendees

C: *Central Files*

From: Bob Reitmajer

Project No.: 2867002

Subject: Vernonia TSP, Alternatives Workshop, Minutes (Portland 11/10/98 KCM Office)

Attendees:

Robyn Bassett, Vernonia Public Works Director/Interim City Administrator

Ross Kevlin, ODOT, Region 1 TGM planner

Alan Danaher, Kittelson, Traffic Engineering/Planning

Kevin France, KCM, Vernonia City Engineer

Bob Reitmajer, KCM, Project Manager

1. Introduction

This was a true work session. All invited attendees were present and worked together most of the day on advancing the infrastructure development options for future of Vernonia. City, ODOT, KCM and Kittelson (Traffic Subconsultant) were represented. The agenda was used as a guideline to the session. The intent was to review existing and likely future impacts on the system and start the path to finding solutions and developing alternatives.

2. Presentation of modeling and future capacity needs

Alan Danaher presented draft memo: Year 2018 Traffic Projections and preliminary capacity needs. Based on development expected in the next 20 years the traffic will increase significantly. The hwy 47 will continue to be adequate as a two lane facility. The level of service on hwy 47 at intersections: Bridge/Rose, Bridge/Jefferson, Bridge/State and Mist/Knott is expected to drop to level F and Bridge/California to level E, with no improvements. Other intersections evaluated will remain above minimum requirements: Hwy 47 Rose/Cougar at level D; Hwy 47 Bridge/Texas at level C; Hwy 47 Bridge/Mist at level D; State/Stoney Point and Mellinger/Stoney Point at level A. The main collectors: Cougar and State will also remain adequate for traffic increases. Draft memo was distributed.

See attached figure: **20 Year Capacity Evaluation**

3. Proposed standards review

Proposed standards were built based on guidelines in Model Ordinances for Small Jurisdictions. The standards were discussed and at this time one change was made. The change added sidewalks on both sides of rural collectors. The proposed standards are summarized in the attached spreadsheet.

4. Safety Issues.

Following safety issues were identified with some suggested solutions also discussed.

Along Hwy 47:

- Traffic flow and lack of proper channelization at intersection of Bridge and Rose
- Traffic flow and lack of proper channelization at intersection of Bridge and Weed and Railroad Grade
- Conflict between bikes, automobiles/parking on Bridge Street between Rose and Rock Creek
- Bike/Ped safety at and near bridge over Rock Creek
- School delivery "U" Turns and sight distance at California
- Bike/Ped path behind guardrail on top of steep slope between California and Texas
- Traffic flow and lack of proper channelization at intersection of Bridge and Louisiana/Texas
- Sight distance at intersection of Bridge and Spencer
- Bike/Ped safety at and near bridge over Nehalem River
- Traffic flow and lack of proper channelization at intersection of Bridge and Mist

Other areas of Vernonia:

- Sight distance at intersection of State and Stoney Point
- Sight distance at intersection of Mellinger and Stoney Point

- "O-A" Hill area alley traffic conflicts

See attached figure: **Safety Issues**

5. Connectivity Issues.

The state highway is the main connector for the whole city. The collectors and local streets that tie into hwy 47 do not provide a complete grid. Additionally there are connectivity issues for bicycles and pedestrians. Following connectivity shortcomings were identified:

- No continuous connection along the north edge of Urban Growth boundary
- Minimum North South connections from Bridge to north edge Urban Growth boundary
- No alternate connection between streets that tie to Mist
- No alternate connection between streets that tie to Bridge between Texas and Mist
- No safe bicycle connection from California to Spencer
- Missing connection from Maple to Cougar
- Missing connection from Clatsop to Weed
- Missing connection from Shady to Park

See attached figure: **Connectivity Shortcomings and Proposed Improvements**

6. Proposed improvements.

General Note: Work to improve existing streets up to standards as needed

Safety Improvements:

Along Hwy 47

- Provide turning lanes and improve channelization at intersection of Bridge and Rose. Eventually provide traffic signal to replace existing flashing beacon.
- Revise connection at intersection of Bridge and Weed and Railroad Grade
- Relocate bikeway from Bridge Street between Rose and Rock Creek to Maple
- Make Park one way street to improve Bike/Ped safety near bridge over Rock Creek
- Provide Bike/Ped bypass from between California and Texas below the cliff (both safety and connectivity issue)
- Provide turning lanes better connection and channelization at intersection of Bridge and Louisiana/Texas
- Consider removing access from Spencer to Bridge to eliminate unsafe sight distance

- Investigate Bike/Ped safety improvements at and near bridge over Nehalem River
- Provide turning lanes and improve channelization at intersection of Bridge and Mist

Other areas of Vernonia:

- Improve sight distance at intersection of State and Stoney Point
- Improve sight distance at intersection of Mellinger and Stoney Point

Connectivity Improvements:

- Investigate full or partial connection along the north edge of Urban Growth boundary
- Expand and connect Louisiana for main (collector) North South connection from Bridge to north edge Urban Growth boundary
- Investigate other local street extensions to improve North South connection from Bridge to north edge Urban Growth boundary
- Construct new street from Heather to Cherry parallel with Mist
- Investigate connection from Missouri to Spencer parallel to Bridge
- Connect Maple to Cougar
- Connection Clatsop to Weed
- Connect Shady to Park

See attached figure: **Proposed Improvements**

Agenda

Vernonia Transportation System Plan (TSP) Workshop

12/10/1998

Open House 6:00 p.m. to 7:00 p.m.

Following Members of the Technical Advisory (TAC) are expected to be available to listen to citizen input and answer questions:

Robyn Bassett, Vernonia Public Works Director/Interim City Administrator
Ross Kevlin, ODOT, Region 1 TGM planner
Alan Danaher, Kittelson, Traffic Engineering/Planning (KCM sub)
Bob Reitmajer, KCM, Project Manager

Displays set up to inform on planning progress:

Street and Sidewalk Inventory
20 Year Capacity Evaluation
Connectivity Shortcomings and Proposed Improvements
Safety Issues
Proposed Improvements

Planning Commission (Citizen Advisory, CAC) 7:30 p.m. to 8:30 p.m.

1. General Overview of a TSP (Ross Kevlin, ODOT)

A. Requirement based on Transportation Planning Rule (TPR)
B. Elements of a TSP (inventory, needs assessment, street plan, bike/ped plan, ordinances, etc.)
C. About this project (DLCD periodic review requirement, $43K TGM grant funding)

2. Progress on Vernonia TSP (Bob Reitmajer, KCM)

B. Inventory
B. Issues
    1. Future capacity needs and level of service (LOS)
    2. Safety concerns
    3. Connectivity problems
    4. Bike/Ped needs (facilities and connectivity)
C. Proposed Improvements
    1. Bring the streets up to standards
    2. Possible Solutions to key problems identified

3. Questions/Input

Minutes

Vernonia Transportation System Plan (TSP) Workshop

12/10/1998

Open House 6:00 p.m. to 7:00 p.m.

Following Members of the Technical Advisory (TAC) were available to listen to citizen input and answer questions:

Robyn Bassett, Vernonia Public Works Director/Interim City Administrator
Ross Kevlin, ODOT, Region 1 TGM planner
Alan Danaher, Kittelson, Traffic Engineering/Planning (KCM sub)
Bob Reitmajer, KCM, Project Manager

Displays were set up to inform on planning progress and generate discussion:

Street and Sidewalk Inventory
20 Year Capacity Evaluation
Connectivity Shortcomings and Proposed Improvements
Safety Issues
Proposed Improvements

After open house a brief presentation was given to Planning Commission by Steve Matthews, AICP (KCM) concluding Downtown Revitalization Study. Final draft of the report was distributed. This study will become part of TSP by reference.

Planning Commission (Citizen Advisory, CAC) 7:30 p.m. to 8:30 p.m.

1. General Overview of a TSP (Ross Kevlin, ODOT)

A. Requirement based on Transportation Planning Rule (TPR)
B. Elements of a TSP (inventory, needs assessment, street plan, bike/ped plan, ordinances, etc.)
C. About this project (DLCD periodic review requirement, $43K TGM grant funding)

2. Progress on Vernonia TSP (Bob Reitmajer, KCM)

B. Inventory
B. Issues
1. Future capacity needs and level of service (LOS)
2. Safety concerns
3. Connectivity problems

4. Bike/Ped needs (facilities and connectivity)

C. Proposed Improvements

1. Bring the streets up to standards
2. Possible Solutions to key problems identified

3. Questions/Input

Twelve people attended the workshop and their input was noted and brought into to the planning effort:

Minor edits to the base map were brought up:

No Branch NW of Cougar
Maple is shorter
Revision to Alabama/Locker
Revise UGB near Cherry
Move Spencer Park
Revise North/Mississippi
Heather re-paved this year after inventory completed, revise rating to 5
Extend Cherry
Revise Bikeway
Extend California
Additional private bikeway parallel to Bridge from proposed bridge to California to Vernonia Lake

Ownership of transportation system discussion:

Most streets are public and belong to the city.
The Highway OR 47 belongs to ODOT
There are private streets in the city as outlined on base map: Railroad Grade, Fairway, Roseview Heights and Roseview, and Locker
Some of the streets belong to the County: Alder, part of State and part of Knott

Suggested additional improvements were brought up:

Investigate developing Railroad Grade near Bridge into Parking
Investigate interconnectivity between Cherry and Alder parallel and east of Mist
Consider new bikeway along Riverside to avoid Bike/ped traffic on existing bridge over Nehalem River
Upgrade/replace bridge over Nehalem River

Concerns about suggested improvements brought up:

Connectivity in eastern part of the City between state Highway and Northern boundary of UGB: Traffic, right of way and physical difficulty to connect/extend Louisiana and Oregon or Texas.

North to south connecting street parallel to Mist on East Side from Heather to Cherry might be difficult due to flood plain and existing houses.

Additional Safety Concerns:

More safety concerns at intersection of Bridge and Rose: Confusing signal, signing and striping

Sight distance and speeding traffic along hwy 47 Rose at River
School safety at Lincoln School at Bridge between 3rd and 5th

4. Follow up

Maps were updated to include citizen input and are distributed as attachment to these minutes.

Proposed alternatives and the draft plan will be prepared based on development up to date.

The draft plan will be presented at a workshop in late January or Early February 1999.

Revisions to the plan will be made and plan presented for adoption in March 1999.

Memo **Tetra Tech/KCM, Inc.**

Date:	June 17, 1999
To:	Vernonia TSP work group
c:	*Central Files, Robyn Bassett via Fax 503-429-4232*
From:	Bob Reitmajer
Project No.:	2867002
Subject:	Plan workshop 6/17/99 6:30 pm

Agenda:

1. Discuss alternatives and select the preferred alternative

2. Prioritize projects

roadway, bike and ped -- for bike and ped, we propose improving higher-classification streets first, starting at trip attractors, like commercial areas and schools and working back toward neighborhoods

3. Discussion of required ordinances to implement the plan.

Memo **Tetra Tech/KCM, Inc.**

Date:	June 24, 1999
To:	Robyn Bassett, Vernonia PWD, 919 Bridge Street, Vernonia, OR 97064
	Ross Kevlin, ODOT Region 1, 123 NW Flanders, Portland, OR 97209
c:	*Central Files, Bob Reitmajer, Kevin France*
From:	Bob Reitmajer
Project No.:	2867002
Subject:	Vernonia TSP, Plan workshop 6/17/99 6:30 p.m. (Open House, Advisory Committee, Planning Commission)

Minutes:

1. Brief review of the plan was given by KCM. Alternatives were discussed and explored. Also feedback from review of the plan was taken to be incorporated in final draft. The recommended alternative that centers on Highway 47 improvements was select as the preferred alternative. This recommendation will be presented to City Council in hearing on July 6.

2. Prioritization of projects. An outline of guiding principles was developed. KCM will use the guidelines to mark up list of projects in table 7-1 as high, low, and medium priority for City review and revisions (attached).

Guideline:

Safety especially as it relates to pedestrians is high.

Commercial area improvements are high.

Linear trail extensions are high.

Upgrades to collectors out of Commercial areas are low.

3. Discussion of required ordinances to implement the plan. ODOT presented a guideline (attached) of ordinance language required for TSP implementation. City provided copies of existing ordinances 710 and 711. KCM will review the two existing ordinances and revise Chapter 8 of the plan to include all ordinance revisions required.

TPR Ordinance Checklist - A Quick & Dirty Reference

660-12-045, the TPR section pertaining to TSP implementation measures, requires local governments to do as follows. (This is only a checklist for quick reference. Please refer to the rule for specific requirements.)

Adopt land use and subdivision ordinances to protect transportation facilities and sites for their identified function (i.e. so an arterial does not become crammed with driveways like a local street). These regulations shall include:

- Access control measures (i.e. driveway and signal spacing, median control).
- Standards to protect future operations of roads (i.e. LOS standards)
- "Airport protection" measures (use and height limits in noise corridors and approach zones).
- A process for coordinated review of land use decisions affecting transportation facilities (i.e. to include comments from ODOT and transit agencies in considering the proposal).
- A process to apply conditions on development to mitigate transportation impacts and protect facilities.
- Requirements to notice transportation and transit agencies of land use applications that:
  - require hearings,
  - request a partition or subdivision,
  - affect private access to roads,
  - are in zones that affect airports.
- Regulations ensuring that changes in land use, density and design standards are consistent with the function and designated "carrying capacity" of the transportation system.

For urban areas and rural communities, adopt land use and subdivision regulations to provide safe, convenient bike/pedestrian circulation. These regulations shall:

- Require bike parking for new multi-family developments (of 4 or more units), new office, retail and institutional developments, and transit transfer stations and park and ride lots.

- Require on-site bike/ped facilities (i.e. bike lanes, sidewalks, accessways) in new subdivisions, multi-family developments, PUDs, shopping centers and commercial districts to link these with adjacent residential areas and transit stops, and neighborhood activity centers (such as schools, shopping areas and employment centers) within 1/2 mile of the development. As part of this requirement, bikeways and sidewalks shall be provided along all arterials and collectors. Also, sidewalks shall be provided along most local streets. Local requirements shall minimize out-of-direction travel for cyclists and pedestrians (i.e. by setting a maximum street-spacing standard).

[Exceptions to the above requirements are allowed where there are existing physical constraints (i.e. steep slopes, wetlands, railroads) or structures, or legal restrictions (i.e. easements, covenants) existing as of May 1, 1995.]

- Any conditions requiring off-site road improvements for new development shall also include bike/ped facilities.

- Internal pedestrian circulation shall be provided through new office parks and commercial developments (i.e. through clustering of buildings, construction of accessways).

For urban areas with a population greater than 25,000, where a public transit system exists, or where one has been found to be feasible, adopt subdivision and land use regulations to provide facilities that support transit use (such as bus stops, shelters and pullout lanes). Please refer to -045(4).

For MPO areas, to adopt subdivision and land use regulations that reduce reliance on the automobile. Please refer to -045(5).

As part of the bike/ped plan required under 660-12-020(2)(d), identify improvements necessary to facilitate bike/ped travel (by making it more direct, safe, and convenient) in developed areas. (An example of such a measure is the construction of accessways to link cul-de-sacs.)

Establish local street standards that minimize pavement and right-of-way width, consistent with operation needs (aka "skinny street" standards).

Vernonia TSP: TABLE 7-1.						
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE	**Approximate Cost**	**SDC**	**Utility fee**	**State**	**County**	**Priority**
	Whole project	**considered**	**proposed**	**Share**	**Share**	
Upgrade Arterials and Collectors (ST Projects)						
ST1. Highway 47, East Ave to N. Mist Drive Widen and overlay various sections	$304,000			$304,000		medium
ST2. Highway 47, Maple St. to Bridge St. Full retrofit to bring up to urban arterial	$121,000			$121,000		high
ST3. Highway 47, Bridge St. to north City limit Widen and overlay various sections	$416,000			$416,000		medium
ST4. State Ave, D St. to City limits Overlay entire section and add sidewalks	$122,000	$59,000	$32,000		$31,000	low
ST5. 2nd Ave/Cougar St/River St, city limits to Rose Ave Widen, overlay add sidewalk	$85,000	$72,000			$13,000	low
ST6. Knott St., N. Mist Drive to City limits Widen, overlay and add sidewalk	$175,000	$149,000			$26,000	low
ST7. Nehalem St between 6th and Rose Ave Widen and overlay	$175,000	$175,000				low
ST8. Louisiana Ave, Mellinger to Texas Widen, pave and overlay as needed	$231,000	$114,000	$14,000		$103,000	low
ST9. Rose Ave., Roseview Heights to UGB Widen, pave and overlay as needed	$56,000	$48,000			$8,000	low
Group Subtotal	*$1,685,000*	*$617,000*	*$46,000*	*$841,000*	*$181,000*	
Safety Improvements (SF Projects)						
SF1A. Intersection of Bridge and Rose, beacon	$25,000			$25,000		high
SF1B. Intersection of Bridge and Rose, signal and lanes	$370,000	$190,000		$180,000		medium
SF2. Intersection of Bridge and Weed and Railroad Grade	$11,000			$11,000		high
SF4. Widen Bridge Street in front of Lincoln School	$8,000	$8,000				high
SF5. Realign intersection of Bridge and Louisiana/Texas	$26,000			$26,000		medium
SF6. Close access from Spencer to Hwy 47	$35,000			$35,000		high
SF7. Improve intersection of Bridge and Mist	$23,000			$23,000		high
SF8. Intersection of Rose and River	$59,000			$59,000		high
SF9. Intersection of California and Bridge	$1,000			$1,000		high
SF10. Intersection of State and Stoney Point	$96,000	$96,000				high
SF11. Intersection of Mellinger and Stoney Point.	$38,000	$38,000				high
SF12. O-A Hill alley area	$2,000					medium
Group Subtotal	*$694,000*	*$332,000*	*$0*	*$360,000*	*$0*	
Bicycle/Pedestrian (BP Projects)						
SF3.Bikeway from Bridge Street to Maple	$75,000	$75,000				high
BP2. Park Drive one-way and new connection to Shady	$134,000					medium
BP3.Highway 47 bridge over Nehalem River	$10,000			$10,000		high
BP4. Highway 47 ridge over Rock Creek	$10,000			$10,000		high
BP5. Extend bikeway in Anderson Park to proposed bridge.	$10,000	$10,000				high
BP6.Extend bikeway from new bridge to Vernonia Lake.	$250,000					high
BP7. Extend bikeway from new bridge to California.	$101,000					high
BP12.Sidewalk on Rose Ave from Maple to Roseview Heights	$92,000	$92,000				low
Group Subtotal	*$682,000*	*$177,000*	*$0*	*$20,000*	*$0*	

Vernonia TSP: TABLE 7-1.						
DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE	**Approximate Cost**	**SDC**	**Utility fee**	**State**	**County**	**Priority**
	Whole project	**considered**	**proposed**	**Share**	**Share**	
Level of Service (LS Project)						
LS1. Left turn lane at State Street & signal	$226,000	$ 120,000		$106,000		low
Group Subtotal	*$226,000*	*$120,000*	*$0*	*$106,000*	*$0*	
Connectivity (C Projects)						
C4. Connections from Bridge Street to UGB via Oregon	$300,000	$300,000				medium
C9. Connection from the Clatsop to Weed.	$43,000	$43,000				medium
Group Subtotal	*$343,000*	*$343,000*	*$0*	*$0*	*$0*	
TSP Recommended Alternative Subtotal	***$3,630,000***	***$1,589,000***	***$46,000***	***$1,327,000***	***$181,000***	
Pavement Management and minor Improvememnts (PM projects)						
PM1. Hwy 47, Bridge from Weed Ave to Washington Ave	$90,000			$90,000		high
PM7. Clatsop From Rose to east end	$10,000		$10,000			low
PM8. Cougar from Weed to Jefferson	$12,000		$12,000			low
PM9. Umatilla St. from 1st Ave to Weed Ave	$80,000	$74,000	$6,000			low
PM10. River St. from 1st Ave to Rose Ave	$5,000		$5,000			low
PM11. E St. from East Ave to east-St. end	$10,000		$10,000			low
PM12. C St. from State Ave to east-St. end	$11,000		$11,000			low
PM13. B St. from State Ave to east-St. end	$11,000		$11,000			low
PM14. North St. from west-St. end to Grant Ave	$62,000	$62,000				low
PM15. Alabama Ave from west-St. end to Riverside Drive	$10,000		$10,000			low
PM16. Bridge St from 6th to city limits	$36,000	$36,000				high
PM17. 6th Ave from Nehalem St. to Bridge St.	$5,000		$5,000			high
PM18. 1st Ave from Clatsop St. to Nehalem St.	$9,000	$9,000				low
PM19. 1st Ave from Columbia St. to Bridge St.	$9,000	$9,000				medium
PM 20. Weed Ave from Bridge St. to Maple St.	$74,000	$74,000				medium
PM21. Weed Ave from Cougar St. to Umatilla St.	$74,000	$74,000				low
PM22. Madison Ave from Shady Lane to Bridge St.	$8,000		$8,000			high
PM23. Grant Ave from North St. to Bridge St.	$8,000		$8,000			high
PM24. Washington Ave from A St. to Bridge St.	$15,000		$15,000			high
PM25. Oregon Ave from north-St. end to Mississippi Ave	$23,000	$23,000				medium
PM 26. Arkansas Ave from Mississippi Ave to Texas Ave	$18,000	$18,000				low
PM 27. Pave Public Gravel Streets						
PM27A.North St. from Louisiana to Oregon	$9,000	$9,000				low
PM27B.Cedar St, from west end to east end	$9,000		$9,000			low

Vernonia TSP: TABLE 7-1. *DISTRIBUTION OF IMPROVEMENT COST BY FUNDING SOURCE*	Approximate Cost Whole project	SDC considered	Utility fee proposed	State Share	County Share	Priority
PM27C.Maple St, from west end to Rose Ave	$9,000		$9,000			low
PM27D.H St, from State Ave to end	$9,000		$9,000			low
PM27E.D St, from State Ave to end	$9,000		$9,000			low
PM27F.B St, from Louisiana to end	$4,000		$4,000			low
PM27G.Juniper St, from Mist to end	$9,000		$9,000			low
PM27H.Ivy St, from Mist to end	$13,000		$13,000			low
PM27J.Douglas St, from Mist to end	$9,000		$9,000			low
PM27K.Birch St, from Mist to end	$14,000		$14,000			low
PM27L.6th Ave, from end to Nehalem	$9,000		$9,000			low
PM27M.5th Ave, from Nehalem to Bridge St	$9,000		$9,000			low
PM27N.4th Ave, from end to Nehalem	$23,000	$23,000				low
PM27O.2nd Ave, from end to beginning of pavement	$9,000		$9,000			low
PM27P.Lincoln-Washington Ave, from State Ave to midway	$23,000				$23,000	low
PM27Q.East Ave, from E to D	$9,000		$9,000			low
PM27R.Polk Ave, from Alder to south end	$23,000	$23,000				low
Group subtotal	*$779,000*	*$434,000*	*$232,000*	*$90,000*	*$23,000*	
TSP and Pavement Management Projects Total	***$4,409,000***	***$2,023,000***	***$278,000***	***$1,417,000***	***$204,000***	

APPENDIX B
TRANSPORTATION SYSTEM PLAN
GOALS AND POLICIES

City of Vernonia Transportation System Plan
July 1999

APPENDIX B.
TRANSPORTATION SYSTEM PLAN GOALS AND POLICIES

The purpose of the Transportation System Plan is to direct the future transportation for the City of Vernonia. An important step in the process is the development of a set of goals and policies that guide the plan. This step is included for the following reasons:

- Goals and policies reflect the concerns and interests of the community and regulatory authority.
- Goals and policies give priority to the variety of competing interests. They can indicate what is most important to the community.
- Goals and policies provide direction in the development, analysis and selection of alternatives.
- Goals and policies allow the planning process to be reviewed, to see how well the end result met the community's needs and interests.

Goal 1: Approval Process and Coordination

Develop a coordinated process for the Transportation Systems Plan.

Policy 1.1 Coordinate the preparation of the TSP with adjacent communities, the County, and the Oregon Department of Transportation (ODOT).

Policy 1.2 Fulfill the transportation planning requirements of ODOT and the Department of Land Conservation and Development (DLCD).

Policy 1.3 Review and update the capital improvement program annually and plan elements periodically.

Policy 1.4 Amend the land use regulations to meet section 660-12-045 of the Transportation Planning Rule (TPR).

Policy 1.5 Provide opportunities for public input throughout the transportation planning process.

Goal 2: Operation and Safety

Preserve and improve the function, capacity, level of service and safety of the roadway system.

Policy 2.1 Meet level of service standards on City, County and State roadways.

Policy 2.2 Identify and correct, if possible, areas susceptible to roadway flooding.

Policy 2.3 Promote transportation demand management programs.

Policy 2.4 Evaluate the need for traffic control devices along Highway 47.

Policy 2.5 Develop access management strategies along Highway 47.

Goal 3: Transportation Alternatives

Support the use of other modes of transportation (bicycles, pedestrians, equestrians, and transit) through effective transportation improvements.

Policy 3.1 Develop alternatives that facilitate travel for bicycles and pedestrians.

Policy 3.2 Investigate the possibility of public transit for Vernonia, especially connections to Forest Grove and Clatskanie/Scappoose.

Policy 3.3 Develop street design standards for all collectors and arterials that include provisions for bicycle and pedestrians.

Policy 3.4 Identify corridors for pedestrians and bicyclists where roadway improvements and street standards emphasize use of transportation alternatives.

Policy 3.5 Encourage the development of public and private transportation options for transportation-disavantaged populations, such as older adults.

Policy 3.6 Explore solutions that minimize out-of-direction travel and provide safe, convenient, reasonably direct routes.

Goal 4: Air Transportation

Support efforts to maintain the airport facilities.

Policy 4.1 Provide and maintain airport facilities to serve general aviation needs.

Policy 4.2 Expand airport facilities and services as needed.

Goal 5: Finance

Use a sound fiscal approach to financing transportation system improvements.

Policy 5.1 Develop a strategy for funding transportation system improvements

Policy 5.2 Introduce innovative funding methods, such as system development charges and user charges, to finance roadway improvements.

Policy 5.3 Participate and coordinate with other transportation users and providers to jointly fund transportation system improvements. These users include: ODOT, other jurisdictions, the County, and private entities.

Policy 5.4 Seek available funding sources for transportation system improvements.

APPENDIX C
ESTIMATED COST FOR PROPOSED ROADWAY IMPROVEMENTS

City of Vernonia Transportation System Plan
July 1999

Standards (ST) Projects			
ST	1	$ 304,000	
ST	2	$ 121,000	
ST	3	$ 416,000	
ST	4	$ 122,000	
ST	5	$ 85,000	
ST	6	$ 175,000	
ST	7	$ 175,000	
ST	8	$ 231,000	
ST	9	$ 56,000	
Safety (SF) Projects			
SF	1A	$ 25,000	
SF	1B	$ 370,000	
SF	2	$ 11,000	
SF	3	$ 75,000	
SF	4	$ 8,000	
SF	5	$ 26,000	
SF	6	$ 35,000	
SF	7	$ 23,000	
SF	8	$ 59,000	
SF	9	$ 1,000	
SF	10	$ 96,000	
SF	11	$ 38,000	
SF	12	$ 1,500	
Bicycle/Pedestrian (BP) Projects			
BP	1	$ 150,000	
BP	2	$ 134,000	
BP	3	$ 10,000	
BP	4	$ 10,000	
BP	5	$ 10,000	
BP	6	$ 250,000	
BP	7	$ 101,000	
BP	8	$ 350,000	
BP	9	$ 120,000	
BP	10	$ 50,000	
BP	11	$ 40,000	
BP	12	$ 92,000	
BP	13	$ 30,000	
Level of Service (LS) Projects			
LS	1	$ 226,000	
LS	2	$ 370,000	
LS	3	$ 200,000	
Connectivity (C) Projects			
C	1	$ 3,500,000	
C	2	$ 3,800,000	
C	3	$ 202,000	
C	4	$ 300,000	
C	5	$ 400,000	
C	6	$ 260,000	
C	7	$ 100,000	
C	8	$ 50,000	
C	9	$ 43,000	

Pavement Management (PM) Projects				
PM	1	$	90,000	
PM	2	$	45,000	
PM	3	$	15,000	
PM	4	$	165,000	
PM	5	$	20,000	
PM	6	$	15,000	
PM	7	$	10,000	
PM	8	$	12,000	
PM	9	$	80,000	
PM	10	$	5,000	
PM	11	$	10,000	
PM	12	$	11,000	
PM	13	$	11,000	
PM	14	$	62,000	
PM	15	$	10,000	
PM	16	$	36,000	
PM	17	$	5,000	
PM	18	$	9,000	
PM	19	$	9,000	
PM	20	$	74,000	
PM	21	$	74,000	
PM	22	$	8,000	
PM	23	$	8,000	
PM	24	$	15,000	
PM	25	$	23,000	
PM	26	$	18,000	
PM	27	$	199,000	

Standards (ST) Projects						
ST	1	$ 304,000				
ST	2	$ 121,000				
ST	3	$ 416,000				
ST	4	$ 122,000				
ST	5	$ 85,000				
ST	6	$ 175,000				
ST	7	$ 175,000				
ST	8	$ 231,000				
ST	9	$ 56,000		$ 1,685,000		
Safety (SF) Projects						
SF	1A	$ 25,000				
SF	1B	$ 370,000				
SF	2	$ 11,000				
SF	4	$ 8,000				
SF	5	$ 26,000				
SF	6	$ 35,000				
SF	7	$ 23,000				
SF	8	$ 59,000				
SF	9	$ 1,000				
SF	10	$ 96,000				
SF	11	$ 38,000				
SF	12	$ 2,000		$ 694,000		
Bicycle/Pedestrian (BP) Projects						
SF	3	$ 75,000				
BP	2	$ 134,000				
BP	3	$ 10,000				
BP	4	$ 10,000				
BP	5	$ 10,000				
BP	6	$ 250,000				
BP	7	$ 101,000				
BP	12	$ 92,000		$ 682,000		
Level of Service (LS) Projects						
LS	1	$ 226,000		$ 226,000		
Connectivity (C) Projects						
C	4	$ 300,000				
C	9	$ 43,000		$ 343,000		$ 3,630,000
Pavement Management (PM) Projects						
PM	1	$ 90,000				
PM	7	$ 10,000				
PM	8	$ 12,000				
PM	9	$ 80,000				
PM	10	$ 5,000				
PM	11	$ 10,000				
PM	12	$ 11,000				
PM	13	$ 11,000				
PM	14	$ 62,000				
PM	15	$ 10,000				
PM	16	$ 36,000				
PM	17	$ 5,000				
PM	18	$ 9,000				
PM	19	$ 9,000				
PM	20	$ 74,000				
PM	21	$ 74,000				
PM	22	$ 8,000				
PM	23	$ 8,000				
PM	24	$ 15,000				
PM	25	$ 23,000				
PM	26	$ 18,000				
PM	27	$ 199,000		$ 779,000		$ 779,000
						$ 4,409,000

Standards (ST) Projects						
ST	4	$ 122,000				
ST	5	$ 85,000				
ST	6	$ 175,000				
ST	7	$ 175,000				
ST	8	$ 231,000				
ST	9	$ 56,000		$ 844,000		
Safety (SF) Projects						
SF	1A	$ 25,000				
SF	1B	$ 370,000				
SF	2	$ 11,000				
SF	4	$ 8,000				
SF	5	$ 26,000				
SF	6	$ 35,000				
SF	7	$ 23,000				
SF	8	$ 59,000				
SF	9	$ 1,000				
SF	10	$ 96,000				
SF	11	$ 38,000				
SF	12	$ 1,500		$ 693,500		
Bicycle/Pedestrian (BP) Projects						
SF	3	$ 75,000				
BP	1	$ 150,000				
BP	2	$ 134,000				
BP	3	$ 10,000				
BP	4	$ 10,000				
BP	5	$ 10,000				
BP	6	$ 250,000				
BP	7	$ 101,000				
BP	8	$ 350,000				
BP	9	$ 120,000				
BP	10	$ 50,000				
BP	12	$ 92,000		$ 1,352,000		
Connectivity (C) Projects						
C	1	$ 3,500,000				
C	2	$ 3,800,000				
C	4	$ 300,000				
C	5	$ 400,000				
C	6	$ 260,000				
C	7	$ 100,000				
C	8	$ 50,000				
C	9	$ 43,000		$ 8,453,000		$ 11,342,500
Pavement Management (PM) Projects						
PM	1	$ 90,000				
PM	2	$ 45,000				
PM	3	$ 15,000				
PM	4	$ 165,000				
PM	7	$ 10,000				
PM	8	$ 12,000				
PM	9	$ 80,000				
PM	10	$ 5,000				
PM	11	$ 10,000				
PM	12	$ 11,000				
PM	13	$ 11,000				
PM	14	$ 62,000				
PM	15	$ 10,000				
PM	16	$ 36,000				
PM	17	$ 5,000				
PM	18	$ 9,000				
PM	19	$ 9,000				
PM	20	$ 74,000				
PM	21	$ 74,000				
PM	22	$ 8,000				
PM	23	$ 8,000				
PM	24	$ 15,000				
PM	25	$ 23,000				
PM	26	$ 18,000				
PM	27	$ 199,000		$ 1,004,000		$ 1,004,000
						$ 12,346,500

APPENDIX D
2018 TRAFFIC PROJECTION STUDY

City of Vernonia Transportation System Plan
July 1999

KITTELSON & ASSOCIATES, INC.
TRANSPORTATION PLANNING/TRAFFIC ENGINEERING
610 SW ALDER, SUITE 700 • PORTLAND, OR 97205 • (503) 228-5230 • FAX (503) 273-8169

MEMORANDUM Project #2873

To: Bob Reitmajer, KCM, Inc.

From: Alan Danaher, P.E., AICP, Kittelson & Associates, Inc.

Date: December 8, 1998

RE: YEAR 2018 TRAFFIC PROJECTIONS AND ROAD CAPACITY NEEDS - VERNONIA

INTRODUCTION

This memorandum documents the 20-year (year 2018) traffic projections developed for the City of Vernonia, and associated roadway improvement needs. The needs identified in this memo served as an input in developing roadway improvement alternatives at the November 10, 1998 Vernonia Transportation System Plan Alternatives Workshop.

TRAFFIC FORECASTING METHODOLOGY

Land Development Projections

A Level 2 - Cumulative Analysis procedure, as documented in the Oregon Department of Transportation Transportation System Planning Guidelines, was applied in developing 20-year (year 2018) traffic projections within Vernonia. The traffic projections were developed for both daily and p.m. peak hour conditions for a typical weekday. The cumulative procedure involved estimating residential dwelling units and non-residential development square footage for different traffic analysis zones, and translating this development into estimated traffic generation using the rates in the Institute of Transportation Engineers' *Trip Generation, 6th Edition* report. The area within the City of Vernonia urban growth boundary was divided into eight traffic analysis zones (TAZs) (see Figure 1), with the growth in residential dwelling units and non-residential development square footage identified for each TAZ.

Table 1 identifies the estimated 1998-2018 growth in residential, commercial, and industrial developments in Vernonia, and the corresponding added vehicle trips for a typical weekday.

Table 1
Added Development Assumptions and Vehicle Trip Generation Estimate
1998-2018

Traffic Analysis Zone	Added Development Assumption - 1998-2018 for Identified Zoning	ITE Trip Generation Code	Weekday Vehicle Trips	Weekday P.M. Peak Hour Vehicle Trips - Total (In/Out)
1	33 GR Units (Single Family) 8 GR Units (Apartments) 4 RR-5 Units	210 220 210	315 53 38	33 (22/11) 5 (3/2) 4 (2/2)
2	442 R Units (85% Single Family, 15% Duplex) 59 GR Units (Single Family) 14 GR Units (Apartments)	210 210 220	4,086 565 93	430 (275/155) 59 (37/22) 9 (6/3)
3	6 GR Units 17, 425 S.F. GC	220 820	40 2,216	4 (2/2) 198 (95/103)
4	23 R Units (85% Single Family, 15% Duplexes) 2 RV Park Acres 54.85 PR (Park) Acres	210 412 416	220 125 150	23 (14/9) 3 (½) 15/7/8)
5	54 R Units (85% Single Family, 15% Duplex) 52 R-10 Units 1 RR-10 Unit	210 210 210	516 498 7	55 (34/21) 52 (34/18) 1 (0/1)
6	2.1 PR (Park) Acres	412	5	1 (0/1)
7	127 R Units (85% Single Family, 15% Duplex) 78 R-10 Units	210 210	1,216 746	128 (81/47) 79 (51/28)
8	246 R Units (85% Single Family, 15% Duplex) 588,000 S.F. LI	210 110	2,358 4,098	249 (159/90) 576 (70/506)
Total			**17,383**	**1,924 (893/1,031)**

The 20-year growth in development was based on an assumption of the build out of all developable land within the current Vernonia urban growth boundary by year 2018. Developable land was identified from the City's concurrent Buildable Lands Inventory study conducted by KCM, Inc., with assumptions for projected land use based on allowable uses for different zoned areas as identified in the Vernonia Zoning Ordinance. From 1998-2018, Vernonia is projected to grow by about 1,200 residential dwelling units and about 600,000 square feet of commercial/industrial development.

Table 1 identifies the estimated added vehicle trip generation for each traffic analysis zone for different land uses. Figure 2 reveals that in the next 20 years, an estimated 17,400 added daily vehicle trips will be generated by new residential, commercial/office, and industrial development, about 62% by residential development, 14% by commercial/office development, and 24% by light industrial development. During the weekday, about 1,920 vehicle trips would be generated by new development.

Trip Distribution and Assignment

Trips generated by residential and non-residential development in Vernonia relate to both internal-external and internal-internal trips. Internal-external trips have one end of the trip within Vernonia, while internal-internal trips have both ends of a trip within the City. The percentage of internal-external trips were identified from the EMME/2 model developed for the Columbia County Rural Transportation System Plan. The County model revealed that by year 2018, about 75% of the trips would be internal-external, and 25% internal-internal (see Figure 3). The County EMME/2 model also identified a growth in external-external traffic through Vernonia (with neither an origin or destination in the City), with an average growth of about 3.9% per year (based on the 20-year growth in through traffic on Highway 47 as identified in the Columbia County EMME/2 model.

Internal-external traffic was assigned to the Vernonia street system assuming that traffic to and from the City would use major routes serving the City from outlying areas. The traffic was assigned to four roads:

- Highway 47 north,
- Highway 47 south,
- State Street, and
- Cougar Street.

The percentage of internal-external traffic assigned to each road (see Figure 4) was based on the relative size of the areas served by these roads, based on the traffic projections in the EMME/2 model.

Internal-internal traffic was assigned to the City road system based on matching residential trip productions with non-residential trip attractions, after discounting external-internal trips.

For external-external, internal-external, and internal-internal traffic, the traffic was assigned through each of the ten study intersections in the Vernonia area (see Figure 5). The traffic projections reflect a notable increase in traffic volumes on Highway 47, particularly on the north side of Vernonia.

Year 2018 Intersection Operations

An updated year 2018 traffic operations analysis was undertaken for the ten study area intersections, for the weekday p.m. peak hour. Figure 5 identifies the level of service for the most heavily congested side street approach at each intersection, assuming each intersection would remain unsignalized through the year 2018. The analysis revealed that side street level of service on the north approach of Rose Street to Highway 47, and the north approach of State Street to Highway 47, would be F during the weekday p.m. peak hour. These side street volumes would meet peak hour signal warrants at a minimum, and would have adequate level of service if signals were provided.

Road Improvement Needs

Highway 47

The year 2018 traffic projections and operations analysis reflect a significant increase in traffic on Highway 47 through central Vernonia. The lack of a parallel east-west collector street on the north side of Vernonia forces Highway 47 traffic coming from the north to travel into downtown Vernonia and then back track to access the new residential development areas on the north side of the city. Direct access to this development off north Highway 47 could be provided by a new connection across the Nehalem River. The engineering feasibility of developing such a roadway will need to be assessed.

Along Highway 47 through central Vernonia, year 2018 traffic projections can be accommodated with the current two through lanes even if an east-west collector roadway were not constructed, though the average daily traffic would approach 15,000 and suggest the development of some capacity improvements along existing Highway 47 through central Vernonia, such as left turn lanes at major intersections (such as at State Street). A traffic signal at the Highway 47/State Street intersection will probably be warranted by year 2018 as well.

At the Highway 47/Bridge Street/Rose Avenue intersection, a traffic signal will be warranted in the future. A southbound left turn lane on the north Rose Street approach to this intersection will be required. This intersection will need to be widened to accommodate the added turn lane and to facilitate truck turning movements (in particular the westbound left turn). In the short-term, modification to the signal flasher operation would be desirable due to the confusing all-red and green right turn arrow signal indications for northbound Highway 47 traffic approaching this intersection.

At the Highway 47/Spencer Avenue intersection, there are currently sight distance restrictions on the side street approach, such that closure of this approach or restriction to right-in, right-out movements might be appropriate in the future.

At the Bridge Street/Nehalem Highway intersection on the east side of the city, the intersection should be rechannelized to "T" into a single south Coon Road approach into the intersection. This is needed to improve sight distance on the side street as well as for the southbound left turn on Highway 47.

Finally, a southbound left turn lane could be required on Highway 47 on the north side of Vernonia at Knott Street or at an access further south to handle traffic associated with the assumed future industrial development to occur on the east side of Highway 47 in that area. The final location for such a turn lane and the timing of its development will be dependent on specific site development plans for the industrial area.

Other Roadways

A field tour of other roadways in the City of Vernonia indicated the following improvement needs. These improvements would be desirable from a local circulation or traffic safety point of view.

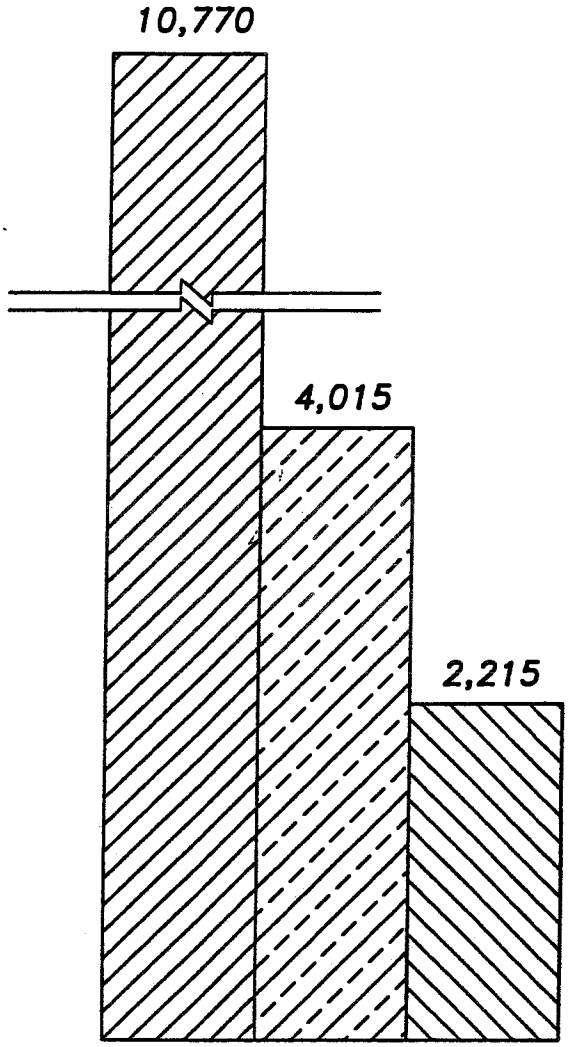
East-West Collector - A new east-west collector roadway would relieve long-term traffic congestion on Highway 47 through Vernonia. The logical location for the roadway would be as a westerly extension of Knott Street west of Highway 47, with a new bridge over the Nehalem River. The raod could terminate at State Street, and possibly be extended further to the west to Rose Street. The section east of State Street could use a portion of existing Mellinger Road and Stoney Point Road for its alignment.

Texas Avenue/Louisiana Avenue Intersection - The Louisiana Avenue approach to Texas Avenue should be realigned to the north further away from the Highway 214 intersection.

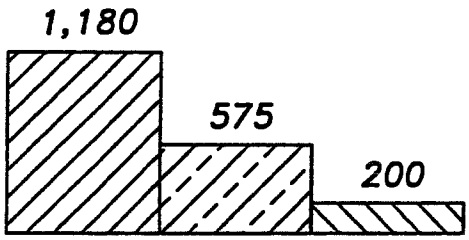
Park Drive Extension - Currently the only access into Hawkins Park is via Park Avenue, with limited width on Park Avenue to handle parking and two-way traffic. There is a need to develop a second access to the park. One possible option is to use Park Avenue for one-way in only access, and extend this roadway into the park and connect to Jefferson Avenue as an out only access.

California Street Relocation - Currently the California Street approach to Highway 47 has a significant sight distance restriction to the east up the hill along Highway 47. This suggests restricting left out movements from this approach unless proper sight distance could be provided. An option might be to realign this roadway around the south side of the elementary school property, with this roadway aligned between the elementary school and high school, becoming the south leg of the Highway 47/State Street intersection.

State Avenue/Stoney Point Road Intersection - If a new east-west collector roadway is developed in the northeast portion of Vernonia, a portion of the roadway could utilize Mellinger Road and Stoney Point Road. This in turn could require channelization improvements at the State Avenue/Stoney Point Road intersection in the future.



DAILY



PM PEAK HOUR

RESIDENTIAL

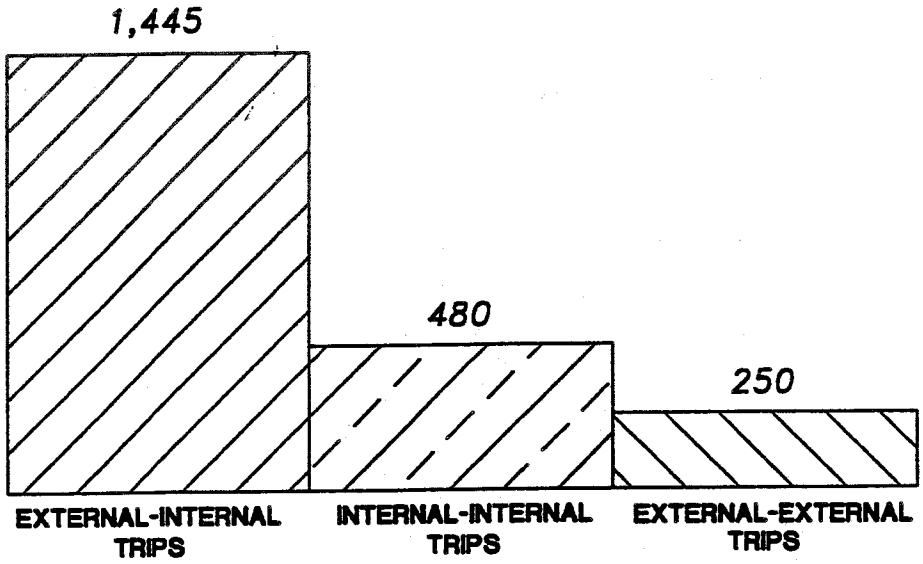
INDUSTRIAL

COMMERCIAL

ESTIMATED GROWTH IN VEHICLE TRIP GENERATION IN VERNONIA 1998–2018

VERNONIA TSP VERNONIA, OREGON NOVEMBER 1998	FIGURE 2	K

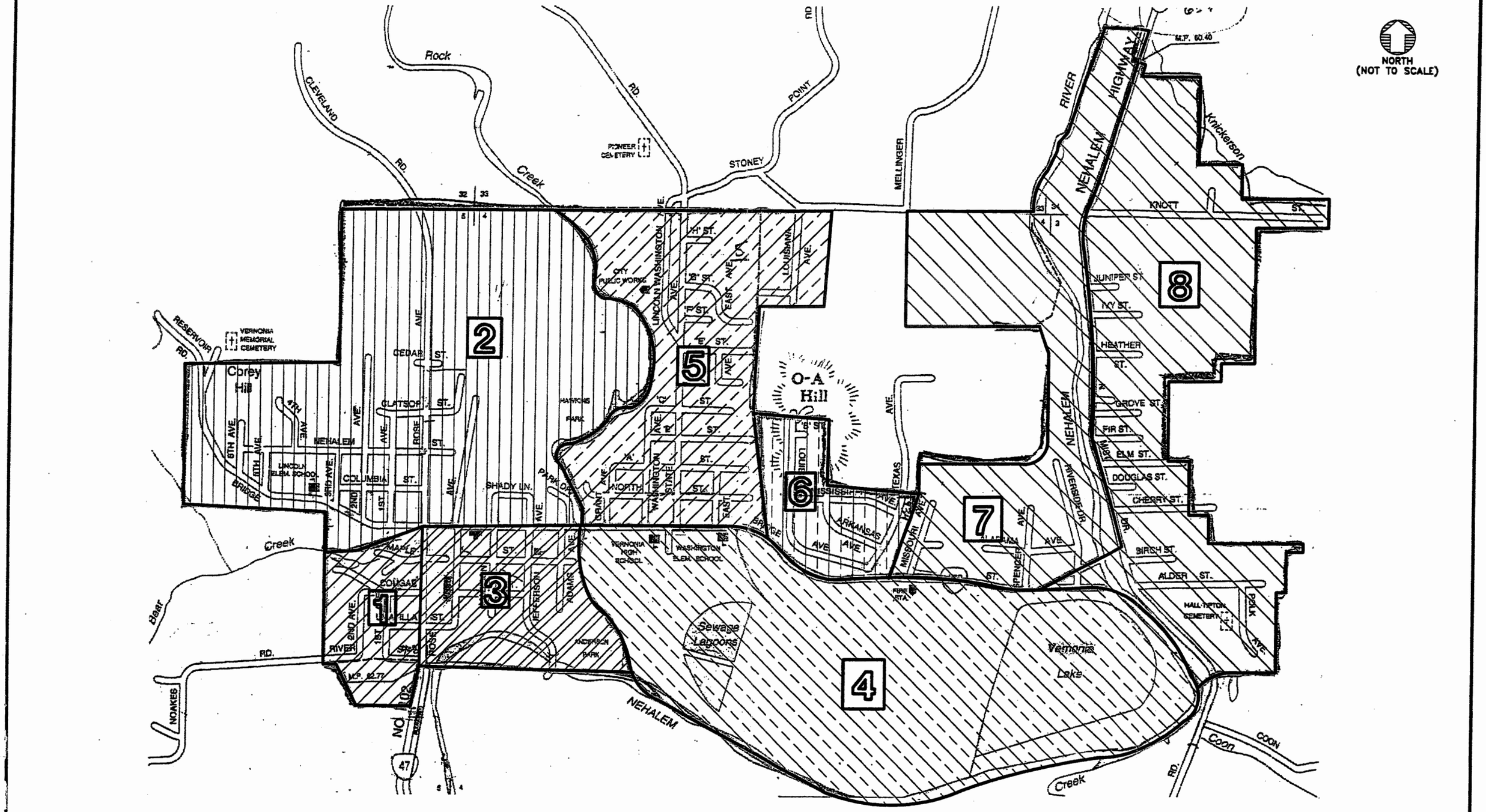
2873F002



ADDED PM PEAK HOUR VEHICLE TRIP DISTRIBUTION FOR VERNONIA 1998–2018

VERNONIA TSP VERNONIA, OREGON NOVEMBER 1998	FIGURE 3	

2873F003

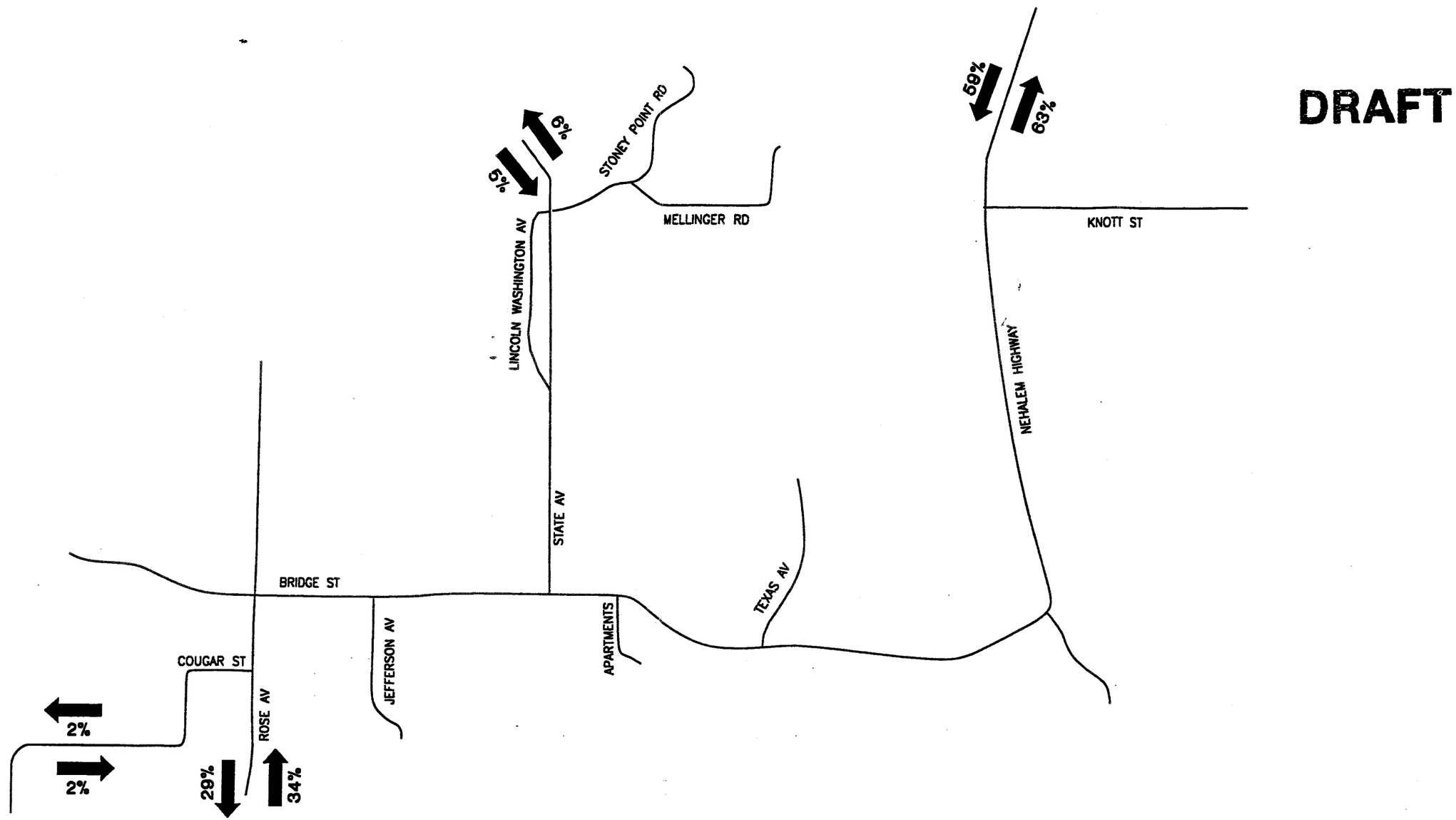


TRAFFIC ANALYSIS ZONES
YEAR 2018

VERNONIA TSP VERNONIA, OREGON NOVEMBER 1998	FIGURE 1	K

2873F001

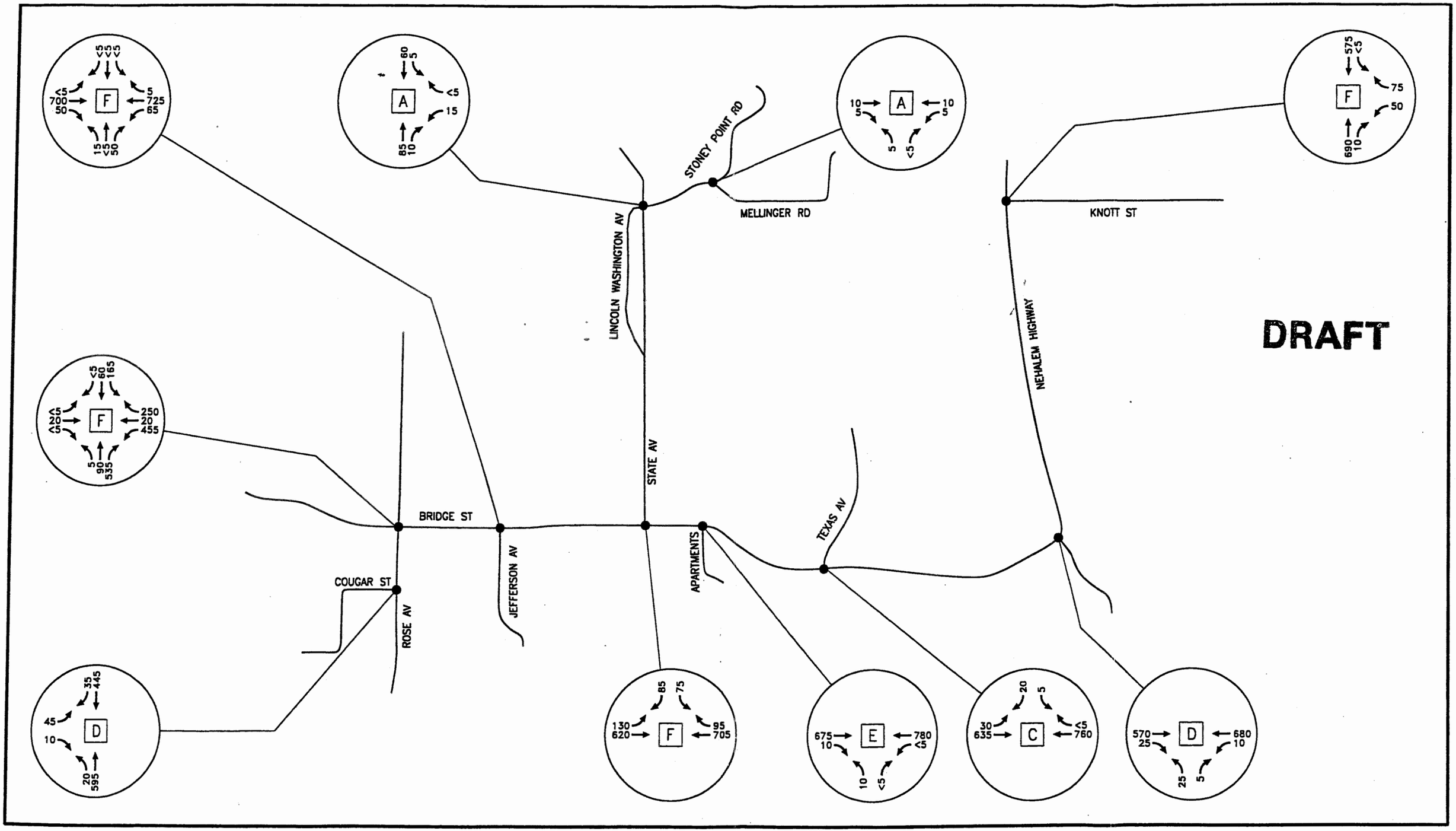
DRAFT



ESTIMATED INTERNAL–EXTERNAL
TRIP DISTRIBUTION – YEAR 2018

VERNONIA TSP VERNONIA, OREGON NOVEMBER 1998	FIGURE 4

2873F004



LEGEND

[X] EXISTING LOS AT UNSIGNALIZED INTERSECTION

(X) EXISTING LOS AT SIGNALIZED INTERSECTION

ESTIMATED YEAR 2018 PM PEAK HOUR TRAFFIC VOLUMES AND INTERSECTION LEVELS OF SERVICE

VERNONIA TSP VERNONIA, OREGON NOVEMBER 1998	FIGURE 5

2873F005

APPENDIX E
AMENDMENTS TO THE ZONING ORDINANCE (NO. 711) TO IMPLEMENT THE VERNONIA TRANSPORTATION SYSTEM PLAN

City of Vernonia Transportation System Plan
July 1999

APPENDIX E.
AMENDMENTS TO THE ZONING ORDINANCE (NO. 711) TO IMPLEMENT THE VERNONIA TRANSPORTATION SYSTEM PLAN (TSP)

Vernonia's Zoning Ordinance includes good provisions to address some of the transportation issues and is silent on others. The City could implement the TSP and comply with the Transportation Planning Rule (TPR) by adopting several piecemeal amendments to different sections of the Zoning Ordinance. However, a new zoning ordinance section is recommended to consolidate Transportation Planning Rule provisions in one article of the Zoning Ordinance. The text for the new article follows. The assigned numbering (Article XVI) avoids the need to renumber other sections of the ordinance.

NEW SECTION

ARTICLE XVI
TRANSPORTATION PLANNING, STANDARDS AND PROCEDURES

16.010. Purpose

The purpose of this Section is to provide standards and procedures to implement provisions of the State Transportation Planning Rule (OAR 660, Division 12) and local, regional and state transportation plans.

16.015. Public Notice and Coordinated Review

A. A proposal to amend the Vernonia Comprehensive Plan or Zoning Ordinance impacting traffic flow to change or adopt a new regulation shall be submitted to the Director of the Department of Land Conservation and Development and the ODOT Region 1 at least 45 days before the final City Council hearing on adoption.

B. The City shall provide written notice to the ODOT Region 1 and other transportation interest groups if an application for a land division or design review may potentially impact a transportation facility or service. This covers all land use proposals including building permits and conditional use permits on or adjacent to ODOT or Columbia County facilities. Notice shall be provided at least 20 days prior to the public hearing or decision on the application.

C. Land use review associated with proposed transportation facilities, services, and improvements shall be coordinated with other jurisdictions such as Columbia County and ODOT when development is on or adjacent to their facilities.

16.020. Access Management Standards

A. Direct access to Highway 47 shall be approved only after consultation with and approval by ODOT.

B. For all proposed development or redevelopment of properties accessing a county road, the developer/owner shall notify and coordinate with the Columbia County Public Works Department to ensure proper access management, consistent with the access management provisions of the Columbia County Transportation System Plan and the Vernonia TSP. Columbia County has the jurisdiction over access permits to county roads.

C. Access to local City streets and County roadways within the City shall comply with the following access spacing standards from the Vernonia TSP.

Access Spacing Standards

Functional Classification	**Minimum Access Spacing**	**Signal Spacing**
Arterial	500 feet from arterial or collector	½ mile
	400 feet from any other intersection (including private access)	
Collector	300 feet from arterial	None
	150 feet from any other intersection (including private access)	
Local Street	200 feet from arterial	None
	100 feet from any intersection with a collector, or local street	
	No spacing requirements from intersections with a private access	

D. Shared driveways along a common property line are strongly encouraged. Access permits may be denied if reasonable alternative access is available.

16.125. Protection of Transportation Facilities

A. For any amendment to the Comprehensive Plan or Zoning Map, the applicant shall demonstrate that the proposed change request meets the following criteria:

1. The proposal conforms with applicable provisions of the City's Comprehensive Plan. As such conformance pertains to the Transportation System Plan, the following provisions apply: A plan or land use regulation amendment significantly affects a transportation facility if it:

> Changes the functional classification of an existing or planned transportation facility;
>
> Changes standards implementing a functional classification system;
>
> Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility, or;
>
> Would reduce the level of service of the facility below the minimum acceptable level as indicated in the City's Transportation System Plan, the Columbia County Transportation System Plan or the Oregon Highway Plan.

2. Proposals that significantly affect a transportation facility shall assure that allowed land uses are consistent with the function, capacity and level of service of the facility identified in the Transportation System Plan. This shall be accomplished by one of the following:

Revising the proposal to be consistent with the planned function, capacity and level of service of the transportation facility, or

Amending the Transportation System Plan to ensure that existing, improved or new transportation facilities are adequate to support the proposed land uses consistent with the requirements of the Transportation Planning Rule.

3. For developments that are likely to generate more than 400 average daily motor vehicle trips (ADTs), the applicant shall provide adequate information, such as a traffic impact study or traffic counts, to demonstrate the level of impact to the surrounding street system. The determination of impact shall be coordinated with the provider of the affected transportation facility, if that provider is not the City of Vernonia.

B. The City may attach conditions (such as right-of-way dedication and special setbacks) to land division and design review approvals to protect the existing and planned right-of-way of transportation facilities.

16.130. Transportation Improvements

A. Changes and refinements of a proposed public road and highway project shall be permitted without a plan amendment if the new alignment falls within a general corridor identified in the TSP.

B. For ODOT transportation projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), the draft EIS or EA shall provide the findings for local land use review, if local review is required.

C. The following transportation improvements are permitted outright in any zone:

1. Normal operation, maintenance, repair, and preservation activities associated with transportation facilities.

2. Installation of culverts, pathways, fencing, guardrails, lighting, and similar types of improvements that take place within the existing right-of-way.

3. Projects specifically identified in the TSP as not requiring further land use regulation.

4. Landscaping as part of a transportation facility.

5. Emergency measures as necessary for the safety and protection of property.

6. Acquisition of right-of-way for public roads, highways, and other transportation projects identified in the TSP are permitted outright, except for those that are located in exclusive farm use or forest zones.

D. The following transportation improvements are permitted with conditional use approval in any zone:

1. Construction, reconstruction, or widening of highways, roads, bridges, or other transportation projects that are

(a) not specifically identified in the TSP, or

(b) not designed and constructed as part of a subdivision or planned development subject to design review and/or conditional use review. These projects shall comply with the TSP and applicable standards.

2. Construction of rest areas, weigh stations and temporary storage processing sites.

3. If review under this Section indicates that the transportation improvement is inconsistent with the TSP, the procedure for a plan amendment, including any necessary goal exceptions, shall be undertaken prior to or in conjunction with the conditional use permit review.

16.135. Street Standards

A. New roads and roadway improvements shall be consistent with the general location, functional classification and typical cross sections (street standards) as set forth in the TSP.

B. New developments shall provide for street connectivity.

C. Tables 3.1 of the TSP provides typical cross-sections for the various street functional classifications and is incorporated by this reference. The cross sections emphasize the desire to develop multi- modal roadway facilities that incorporate sidewalks and bike lanes where possible.

D. The City Engineer may adjust the street standards by up to 10 percent when it is found that any of the following conditions apply:

1. The existing right-of -way is substandard; or

2. Exceptional topographic conditions exist; or

3. Significant trees or vegetation would be removed.

TABLE 3-1.
ROADWAY DESIGN STANDARDS

Street Type	Travel Lanes	Parking	Bikeways	Total Pavement	Unpaved Shoulders	Planting Strip	Sidewalks	Right of Way[a]
Urban (Fig. 2-1)								
New Local	2 – 9'	5' both sides	—	28'	—	5' both sides	5' both sides	50'
Local Preferred Retrofit	2 – 9'	6' one side	—	24'	—	5' both sides	5' both sides	46'
Local Minimum Retrofit	2 – 9'	—	—	18'	—	—	5' one side	25'
Collector	2 – 10'	8' one side[b]	5' both sides	38'	—	5' both sides	6' both sides	62'
Arterial	2 – 11'	8' both sides[b]	5' both sides	48'	—	—	10' both sides[c]	70'
Rural (Fig. 2-1)								
Local	2 – 9'	—	—	18'	2' both sides	—	—	30'
Collector	2 – 10'	6' one side	5' both sides	36'	4' both sides	—	5' both sides	62'
Arterial	2 – 12'	—	5' both sides	34'	4' both sides	—	5' both sides	60'

a. Required right of way is the total of pavement, shoulders, planting strip, and sidewalks, plus 2 feet for urban roadways and 8 feet for rural roadways.

b. Standards for urban arterials and collectors require 8-foot parking lanes in the downtown area, where storefront commercial land uses make on-street parking desirable. The urban and rural standards application areas are defined by Figure 2-1, which is included in this ordinance. Outside of downtown, parking lanes may be excluded from the cross section if adjacent land uses do not support the need (for instance, if buildings are set back from the right-of-way and have off-street parking). Where on-street parking is eliminated from the cross section, total pavement width shall be reduced by the same amount.

c. The 10-foot arterial sidewalk is stipulated for the downtown area and may be reduced elsewhere to 6 feet.

16.140. Internal Connections

A. General Walkway Standards for Commercial Development

Walkways from the public right-of -way or adjoining development shall be designed to connect with internal circulation patterns within buildings. Walkways shall be as direct as

possible and shall limit out- of-direction travel. The walkways shall be paved with a hard surface material and shall be no less than five feet in width. If adjacent to parking areas where vehicles will overhang the walkway, a seven-foot walkway shall be provided. The walkways shall be separated from parking areas and internal driveways using curbing, landscaping, or distinctive paving material.

B. Connections to the Right-of -Way

Every commercial, office, and institutional building shall include a pedestrian walkway connected to the public right-of -way. When building is set away from the street a walkway connecting street and building shall be provided for every 300 feet of street frontage.

C. Connections Between Developments -

Opportunities for at least one pedestrian walkway and one potential vehicular connection shall be provided between adjacent commercial, office, and institutional development. If connections are currently not available, then planned connections shall be designed to retain an opportunity to connect adjoining developments in the future.

16.145 Bicycle Parking Facilities

A. Bicycle parking shall be provided for all new multifamily, industrial, commercial, office and institutional development. Each bicycle parking space must be a minimum of six feet in length, two feet in width, and have an overhead clearance of six feet.

B. Bicycle parking shall be located on site within 50 feet of a primary entrance and not farther from the entrance than the closest motor vehicle parking space.

C. Where sidewalks are sufficiently wide, bicycle parking may be located within the public right-of-way.

D. Bicycle space requirements follow,

1. Multifamily development (3 or more units): 1 space per unit

2. Industrial development: 1 space per 10 auto spaces required

3. Commercial/off ice/institutional development: A minimum of 2 spaces, plus 1 additional space for each 10 auto spaces required.

ORDINANCE NUMBER 738

AN ORDINANCE OF THE CITY OF VERNONIA AMENDING ORDINANCE 710 PROVIDING FOR SUBDIVISION AND LAND PARTITIONING STANDARDS AND PROCEDURES AND DECLARING AN EMERGENCY

WHEREAS, the City Council has determined that it is necessary to amend Ordinance 710 Providing for Subdivision and Land Partitioning Standards and Procedures in order to comply with the Transportation Planning Rule,

Now therefore, the City of Vernonia ordains as follows:

Section 1. Section 26 Amendment: Subsection 2 of Section 26 of Ordinance 710, adopted on October 28, 1996, is hereby deleted in its entirety and replaced with the following:

Section 26(2) Streets - Minimum Right-of-Way and Roadway Width. Unless otherwise indicated on the development plan, the street right-of-way and roadway widths shall not be less than the minimum width in feet shown in the following table:

Type of Street	Minimum Right-of-Way (Feet)	Minimum Roadway Width (Feet)
URBAN		
Local - new construction	50	28
Local - preferred retrofit	46	24
Local - minimum retrofit	25	18
Collector	62	38
Arterial	70	48
RURAL		
Local	30	18
Collector	62	36
Arterial	60	34
Radius for turn around at end of cul-de-sacs	50	40
Alleys	20	20

Where conditions, particularly topography or the size and shape of the tract, make it impractical to otherwise provide buildable sites, narrower right-of-way may be accepted, ordinarily not less than 50 feet. If necessary, slope easements may be required.

Section 2. Section 27 Amendment: Subsection 3(c) of Section 27 of Ordinance 710, adopted on October 28, 1996, is hereby deleted in its entirety and replaced with the following:

> **Section 27(3)(c) Blocks - Pedestrian and Bicycle Ways.** When desirable for public convenience, a pedestrian or bicycle way may be required to connect to a cul-de-sac or to pass through an unusually long or oddly shaped block or otherwise provide appropriate circulation (especially where a shortcut would be created to a pedestrian attraction, such as a school, park or neighborhood commercial development).

Section 3. Section 37 Amendment: Subsection 1 of Section 37 of Ordinance 710, adopted on October 28, 1996, is hereby deleted in its entirety and replaced with the following:

> **Section 37(1) Street Improvements in Existing Platted Areas.** No building permit shall be issued for the construction of any new building or structure, or for the remodeling of any existing building or structure which results in an increase in size or change in use, excepting remodel permits for single-family dwellings not resulting in a change of use, unless the applicant for said building permit agrees to construct street improvements, which include curbs (sidewalks and all other frontage improvements required in the design standards for the roadway functional classification), along all City streets that abut the property described in the building permit.

Section 4. Effective Date: Under the provisions of the City of Vernonia Charter of 1998, Chapter VIII, Section 32, the Council finds it necessary for the peace, health, and safety of the City and its citizens that this Ordinance take effect immediately upon its passage and approval by the Mayor and an emergency is therefore declared to exist.

Section 5. Recorder's Duties: The City Recorder is hereby directed, upon its adoption and authentication, to number this Ordinance as the next adopted ordinance of the City of Vernonia.

Adopted as read in full this _____ day of December, 1999, by the following vote:

AYES: _____ NAYS: _____ ABSTAIN: _____ ABSENT: _____

Adopted as read by title only this _____ day of December, 1999, by the following vote:

AYES: _____ NAYS: _____ ABSTAIN: _____ ABSENT: _____

Signed by me, Arthur Parrow, Mayor, in authentication of its adoption this _____ day of December, 1999.

Arthur Parrow

Arthur Parrow, Mayor
City of Vernonia

ATTEST: Janelle Serafin

Janelle Serafin
City Recorder

Ordinance 729

An Ordinance to Amend Ordinance 711 by adding Article XVI Transportation Planning, Standards and Procedures and Declaring an Emergency

Whereas, the City Council has determined that it is necessary to add Article XVI Transportation Planning, Standards and Procedures to Ordinance 711 in order to comply with the Transportation Planning Rule (TPR).

Now, therefore, the City of Vernonia does ordain:

Section 1. Addition of Article XVI. Ordinance 711 is hereby amended by the addition of the following Article.

Article XVI Transportation Planning, Standards and Procedures

Section 16.010 [Purpose] The purpose of this Section is to provide standards and procedures to implement provisions of the State Transportation Planning Rule (OAR 660, Division 12) and local, regional and state transportation plans.

Section 16.015 [Public Notice and Coordinated Review]

A. A proposal to amend the Vernonia Comprehensive Plan or Zoning Ordinance to change or adopt a new regulation shall be submitted to the Director of the Department of Land Conservation and Development and the ODOT District Manager at least 45 days before the final City Council hearing on adoption.
B. The City shall provide written notice to the ODOT District Manager and other review may potentially impact a transportation facility or service. Notice shall be provided at least 20 days prior to the public hearing or decision on the application.
C. Land use review associated with proposed transportation facilities, services, and improvements shall be coordinated with other jurisdictions such as Columbia County and ODOT when appropriate.

Section 16.020 [Access Management Standards]

A. For all proposed development or redevelopment of properties accessing a state highway, the developer/owner shall notify and coordinate with the ODOT District Manager to ensure proper access management, consistent with the access management provisions of the Oregon Highway Plan and the Vernonia TSP. Specific access management strategies for Highway 47 are included in Chapter 6 of the TSP and are adopted by this reference. ODOT has the jurisdiction over access permits to state highways.
B. For all proposed development or redevelopment of properties accessing a county road, the developer/owner shall notify and coordinate with the

Columbia County Public Works Department to ensure proper access management, consistent with the access management provisions of the Columbia County Transportation System Plan and the Vernonia TSP. Columbia County has the jurisdiction over access permits to county roads.

C. Access to local City streets and County roadways within the City shall comply with the following access spacing standards from the Vernonia TSP.

Access Spacing Standards

Functional Classification	Minimum Access Spacing	Signal Spacing
Arterial	500 feet from arterial or collector	½ mile
	400 feet from any other intersection (including private access)	
Collector	300 feet from arterial	None
	150 feet from any other intersection (Including private access)	
Local Street	200 feet from arterial	None
	100 feet from any intersection with a collector, or local street	
	No spacing requirements from intersections with a private access	

D. Shared driveways along a common property line are strongly encouraged. Access permits may be denied if reasonable alternative access is available.

Section 16.125 [Protection of Transportation Facilities]

A. All zone changes shall conform to the adopted Vernonia TSP. Zone changes shall not substantially impact the functional classification or operation of transportation facilities. To ensure proper review and mitigation, a traffic impact study may be required for proposals that may impact transportation facilities.

B. The applicant for a land division or design review shall submit a traffic impact study when the proposal affects a transportation facility, if it:

1. Changes the functional classification of an existing or planned transportation facility;
2. Changes standards implementing a functional classification system;

3. Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or
4. Would reduce the level of service of the facility below the minimum acceptable level of service, which is defined as Level D based on definitions and measurements in Highway Capacity Manual as interpreted by City Engineer.

C. The City may attach conditions (such as right-of-way dedication and Special setbacks) to land division and design review approvals to protect the existing and planned right-of-way of transportation facilities.

Section 16.130 [Transportation Improvements]

A. Changes and refinements of a proposed public road and highway project shall be permitted without a plan amendment if the new alignment falls within a general corridor identified in the TSP.
B. For ODOT transportation projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), the draft EIS r EA shall provide the findings for local land use review, if local review is required.
C. The following transportation improvements are permitted outright in any zone:

1. Normal operation, maintenance, repair, and preservation activities associated with transportation facilities.
2. Installation of culverts, pathways, fencing, guardrails, lighting, and similar types of improvements that take place within the existing right-of-way.
3. Projects specifically identified in the TSP as not requiring further land use regulation.
4. Landscaping as part of a transportation facility.
5. Emergency measures as necessary for the safety and protection of property.
6. Acquisition of right-of-way for public roads, highways, and other transportation projects identified in the TSP are permitted outright, except for those that are located in exclusive farm use or forest zones.

D. The following transportation improvements are permitted with conditional use approval in any zone:

1. Construction, reconstruction, or widening of highways, roads, bridges or other transportation projects that are

   a. not specifically identified in the TSP, or
   b. not designed and constructed as part of a subdivision or planned development subject to design review and/or conditional use review. These projects shall comply with the TSP and applicable standards.

2. Construction of rest areas, weigh stations and temporary storage processing sites.
3. If review under this Section indicates that the transportation improvement is inconsistent with the TSP, the procedure for a plan amendment, including any necessary goal exceptions shall be undertaken prior to or in conjunction with the conditional use permit review.

Section 16.135 [Street Standards]

A. New roads and roadway improvements shall be consistent with the general location, functional classification and typical cross sections (street standards) as set forth in the TSP.
B. New developments shall provide for street connectivity.
C. Table 3.1 of the TSP provides typical cross sections for the various street functional classifications and is incorporated by this reference. The cross sections emphasize the desire to develop multi-modal roadway facilities that incorporate sidewalks and bike lanes where possible.
D. The City Engineer may adjust the street standards by up to 10 percent when it is found that any of the following conditions apply:

1. The existing right-of-way is substandard; or
2. Exceptional topographic conditions exist; or
3. Significant trees or vegetation would be removed.

See page 5 for Table 3-1.

Table 3-1.
Proposed Roadway Design Standards

Street Type									
Urban (Fig. 2-1)									
New Local	2-9	5' both sides		28'		5' both sides	5' both sides		50'
Local Preferred Retrofit		2-9'	6' one side		24'		5' both sides	5' both sides	46'
Local Minimum Retrofit		2-9'			18'			5' one side	25'
Collector		2-10'	8' both sides	5' both sides	38'		5'both sides	6' both sides	62'
Arterial		2-11'	8' both sides*	5' both sides	48'			10' both sides**	70'
Local		2-9'			18'	2' both sides			30'
Collector		2-10'	6' one side	5'both sides	36'	4' both sides		5' both sides	62'
Arterial		2-12'		5' both sides	34'	4' both sides		5'both sides	60'

a. Required right of way is the total of pavement, shoulders, planting strip, and sidewalks, plus 2 feet for urban roadways and 8 feet for rural roadways.

Additional comments to Table 3-1.
* Standards for urban arterials and collectors require 8-foot parking lanes in the downtown area, where storefront commercial land uses make on-street parking desirable. The urban and rural standards applications areas are defined by Figure 2-1. Out side of downtown, parking lanes may be excluded from the cross section if adjacent land uses do not support the need (for instance, if buildings are set back from the right-of-way and off-street parking). Where on-street parking is eliminated from the cross section, total pavement width shall be reduced by the same amount.
** The 10-foot arterial sidewalk is stipulated for downtown area and may be reduced elsewhere to six feet.

Section 16.140 [Internal Connections]

A. General walkway standards. Walkways from the public right-of-way or adjoining development shall be designed to connect with internal circulation patterns within buildings. Walkways shall be as direct as possible and shall limit out-of-direction travel. The walkways shall be paved with a hard surface material and shall be no less than five feet in width. If adjacent to parking areas where vehicles will overhang the walkway, a seven-foot walkway shall be provided. The walkways shall be separated from parking areas and internal driveways using curbing, landscaping, or distinctive paving material.
B. Connections to the right-of-way. Every commercial, office, and institutional building shall include a pedestrian walkway connected to the public right-of-way. A walkway shall be provided for every 300 feet of street frontage.
C. Connections between developments. Opportunities for at least one pedestrian walkway and one potential vehicular connection shall be provided between adjacent commercial, office, and institutional development. If connections are currently not available, then planned connections shall be designed to retain an opportunity to connect adjoining developments in the future.

Section 16.145 [Bicycle Parking Facilities]

A. Bicycle parking shall be provided for all new multifamily, industrial, commercial, office and institutional development. Each bicycle parking space must be a minimum of six feet in length, two feet in width, and have an overhead clearance of six feet.
B. Bicycle parking shall be located on site within 50 feet of a primary entrance and not farther from the entrance than the closest motor vehicle parking space.
C. Where sidewalks are sufficiently wide, bicycle parking may be located within the public right-of-way.
D. Bicycle space requirements follow,

    1. Multifamily development (3 or more units): 1 space per unit
    2. Industrial development: 1 space per 10 auto spaces required
    3. Commercial/office/institutional development: A minimum of 2 spaces, plus 1 additional space for each 10 auto spaces required.

Section 16.150 [Severability Clause] Should any section or portion of this Ordinance be held unlawful and unenforceable by any Court of competent jurisdiction, such decision shall apply only to the specific Section, or portion thereof, directly specified in the decision. All other sections or portions of this Ordinance shall remain in full force and effect.

Section 16.155 [Effective Date] Under the provisions of the City of Vernonia Charter of 1998, Chapter VIII, Section 32, the Council finds it necessary for the peace, health, and safety of the City and its citizens that this Ordinance take effect immediately upon its passage and approval by the Mayor and an emergency is therefore declared to exist.

Section 16.160 [Recorder's Duties] The City Recorder is hereby directed, upon its adoption and authentication, to number this Ordinance as the next adopted Ordinance of the City of Vernonia.

Adopted as read in full this 6th day of December, 1999 by the following vote:

Ayes: 4 Nays: ____ Abstain: ____ Absent: 1

Adopted as read by title only this 6th day of December, 1999 by the following vote:

Ayes: 4 Nays: ____ Abstain: ____ Absent: 1

Signed by me, Arthur Parrow, Mayor, in authentication of its adoption this 6th.

Arthur Parrow

Mayor Arthur Parrow

Attest: Janelle Serafin

Janelle Serafin, City Recorder

ORDINANCE NO. 781

ORDINANCE ADOPTING ELEMENTS OF VERNONIA TRANSPORTATION SYSTEM PLAN, FURTHERING COMPLIANCE WITH STATE OF OREGON TRANSPORTATION PLANNING RULE AND AMENDING ORDINANCE 710.

The City Council finds:

1. Vernonia needs to fully integrate changes to its Development Code from the Transportation System Plan adopted in 1999 in order to complete the Periodic Review process and to comply with the State of Oregon Transportation Planning Rule.

2. The changes herein are recommended by Oregon Department of Transportation to complete compliance with the Transportation Planning Rule.

The City of Vernonia does ordain:

Section 1. Amendment: The following Sections of Ordinance 710, adopted on October 28, 1996, are hereby amended as follows:

Section 26. [Streets.]

1. **Required** <~~Minimum~~> right-of-way and roadway width. Unless otherwise indicated on the development plan, the street right-of-way and roadway widths shall not be less than the <~~minimum~~> width in feet shown in the following table:

Type of Street	Minimum Right-of-Way (Feet)	**Required** <~~Minimum~~> Roadway Width (Feet)
URBAN		
Local-new construction	50	28
Local-preferred retrofit	46	24
Local-minimum retrofit	25	18
Collector	62	38
Arterial	70	48
RURAL		
Local	30	18
Collector	62	36
Arterial	60	34
Radius for turn around at end of cul-de-sacs	50	40
Alleys	20	20

9. Cul-de-sac. A cul-de-sac shall be as short as possible and shall have a maximum length of **200** <~~400~~> feet and serve building sites for not more than 18 dwelling units. A cul-de-sac shall terminate with a circular turn-around.

Section 2. Severability Clause. Should any section or portion of this Ordinance be held unlawful and unenforceable by any court of competent jurisdiction, such decision shall apply only to the specific Section, or portion thereof, directly specified in the decision. All other section or portions of this Ordinance shall remain in full force and effect.

Section 3. Effective Date. Under the provisions of the City of Vernonia Charter of 1998, Chapter VIII, Section 32, the provisions of this Ordinance shall become effective on the thirtieth (30th) day after its adoption and authentication.

Section 4. Recorder's Duties: The City Recorder is hereby directed, upon its adoption and authentication, to number this Ordinance as the next adopted ordinance of the City of Vernonia.

Adopted as read in full this 15th day of April, 2002, by the following vote:

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Adopted as read by title only this 6th day of May, 2002, by the following vote:

AYES: 4 NAYS: 0 ABSTAIN: 0 ABSENT: 1

Signed by me, Mario Leonetti, Mayor, in authentication of its adoption this 6th day of May, 2002.

Cindy Ball
~~Mario Leonetti, Mayor~~ Council President
City of Vernonia

ATTEST: Janelle Serafin
Janelle Serafin
City Recorder

ORDINANCE NO. 782

ORDINANCE ADOPTING ELEMENTS OF VERNONIA TRANSPORTATION SYSTEM PLAN, FURTHERING COMPLIANCE WITH STATE OF OREGON TRANSPORTATION PLANNING RULE AND AMENDING ORDINANCE 711.

The City Council finds:

1. Vernonia needs to fully integrate changes to its Development Code from the Transportation System Plan adopted in 1999 in order to complete the Periodic Review process and to comply with the State of Oregon Transportation Planning Rule.

2. The changes herein are recommended by Oregon Department of Transportation to complete compliance with the Transportation Planning Rule.

The City of Vernonia does ordain:

Section 1. Amendment: The following Sections of Ordinance 711, adopted on October 28, 1996, are hereby amended as follows:

Section 16.015 [Public Notice and Coordinated Review]

A. A proposal to amend the Vernonia Comprehensive Plan or Zoning Ordinance to change or adopt a new regulation shall be submitted to the Director of the Department of Land Conservation and **Development at least 45 days before the first public hearing on adoption** and to <~~the~~> ODOT <~~District Manager~~> at least 45 days before the final City Council hearing on adoption.

B. The City shall provide written notice to the <~~ODOT District Manager~~> **providers of transportation facilities and services, such as ODOT or Columbia County**, <~~other transportation interest groups~~> **if an application for a land division,** <~~or~~> **design** review, **conditional use or building permit** <~~may potentially impact a~~> **is located on or adjacent to an ODOT** transportation facility or service. Notice shall be provided at least 20 days prior to the public hearing or decision on the application.

C. Land use review associated with proposed transportation facilities, services, and improvements shall be coordinated with other jurisdictions **that provide those facilities or services,** such as Columbia County and ODOT, when <~~appropriate~~> **the proposed development has an impact on the transportation facility or service, as determined by the provider**.

Section 16.020 [Access Management Standards]

A. Access (both direct, and indirect via easement) to Highway 47 shall be approved only after consultation with and approval by ODOT.<~~For all proposed development or redevelopment of properties accessing a state highway, the developer/owner shall notify and coordinate with the ODOT District Manager to ensure proper access management, consistent with the access management provisions of the Oregon Highway Plan and the Vernonia TSP. Specific access management strategies for Highway 47 are included in Chapter 6 of the TSP and are adopted by this reference. ODOT has the jurisdiction over access permits to state highways.~~>

Section 16.125 [Protection of Transportation Facilities]

A. All **comprehensive plan and** zone changes shall conform to the adopted Vernonia TSP. Zone changes shall not substantially impact the functional classification or operation of transportation facilities. To ensure proper review and mitigation, a traffic impact study may be required for proposals that may impact transportation facilities.

~~B.~~ The applicant for a ~~land division~~ **comprehensive plan or zone change may be required to** ~~or design review shall~~ submit a traffic impact study **if deemed necessary by a transportation facility provider, including the City, Columbia County or ODOT**. ~~when the proposal affects a transportation facility, if it:~~

~~1. Changes the functional classification of an existing or planned transportation facility;~~
~~2. Changes standards implementing a functional classification system;~~
~~3. Allows types or levels of land use that would result in levels of travel or access that are inconsistent with the functional classification of a transportation facility; or~~
~~4. Would reduce the level of service of the facility below the minimum acceptable level of service, which is defined as Level D based on definitions and measurements in Highway Capacity Manual as interpreted by the City Engineer.~~

C. The applicant for a comprehensive plan or zone change which significantly affects a transportation facility shall ensure that the proposed change is consistent with the function, capacity and level of service of affected transportation facilities as identified in the TSP, or for ODOT facilities, the minimum acceptable performance standard in the most recent adopted Oregon Highway Plan. This shall be accomplished by either:

1. Limiting the allowed land uses to be consistent with the planned function, capacity and level of service of the facility;

2. **Amending the TSP to provide transportation facilities adequate to support the proposed land uses in compliance with Division 660-12 of the Oregon Administrative Rules, or;**
3. **Altering land use designations, densities or design requirements to reduce demand for automobile travel and meet travel needs through other modes.**

D. **A proposed change significantly affects a transportation facility if it:**
1. **Changes the functional classification of an existing or planned transportation facility;**
2. **Allows types or levels of land uses which would result in levels of travel or access which are inconsistent with the functional classification of a transportation facility, or;**
3. **Would reduce the level of service below the minimum acceptable level identified in the TSP, the Columbia County Transportation System Plan or the Oregon Highway Plan.**

E. The City may attach conditions (such as right-of-way dedication and special setbacks) to land division and design review approvals to protect the existing and planned right-of-way of transportation facilities.

Section 16.135 [Streets Standards]

A. New roads and roadway improvements shall be consistent with the general location, functional classification and ~~<typical cross sections (~~ > streets standards~~<)~~>as set forth in the TSP.
B. New development shall provide for street connectivity.
C. Table 3.1 of the TSP provides **streets standards** ~~<typical cross sections>~~ for the various street functional classifications and is incorporated by this reference. The cross sections emphasize the desire to develop multi-modal roadway facilities that incorporate sidewalks and bike lanes where possible.

Table 3-1
~~Proposed~~ **Required** Roadway Design Standards

Street-Type	Travel Lanes	Parking	Bikeways	Total Pavement	Unpaved Shoulders	Planting Strip	Sidewalks	Right of Way [a]
Urban (Fig. 2-1)								
New Local	**2-9'** ~~5' both sides~~	**5' both sides**	— ~~28'~~	28'	5' both sides	5' both sides	—	50'
Local Preferred	2-9'	6' one side	—	24'	—	5'both sides	5' both sides	46'

Retrofit								
Local Minimum Retrofit	2-9'	—	—	18'	—	—	5' one side	25'
Collector	2-10'	8' **one** ~~both~~ sides*	5' both sides	38'	—	5' both sides	6' both sides	62'
Arterial	2-11'	8' both sides*	5' both sides	48'	—	—	10' both sides**	70'
Rural (Fig. 2-1)								
Local	2-9'	—	—	18'	2' both sides	—	—	30'
Collector	2-10'	6' one side	5' both sides	36'	4' both sides	—	5' both sides	62'
Arterial	2-12'	—	5' both sides	34'	4' both sides	—	5' both sides	60'

Section 16.140 [Internal Connections]

A. General walkway standards **for commercial developments**. Walkways from the public right-of-way or adjoining development shall be designed to connect with ~~internal circulation patterns within~~ **buildings front or main building entryways**. Walkways shall be as direct as possible and shall limit out-of-direction travel. The walkways shall be paved with a hard surface material and shall be no less than five feet in width. If adjacent to parking areas where vehicles will overhang the walkway, a seven-foot walkway shall be provided. The walkways shall be separated from parking areas and internal driveways using curbing, landscaping, or distinctive paving material.

B. General walkway standards for multi-family developments and planned developments. Walkways from the public right-of-way shall be designed to connect with front or main building entryways. Public walkways to adjoining developments shall be as direct as possible and shall limit out-of-direction travel. Public walkways shall be paved with a hard surface material and shall be no less than five feet in width. If adjacent to parking areas where vehicles will overhang the walkway, a seven-foot walkway shall be provided. The walkways for multi-family developments shall be separated from parking areas using curbing, landscaping, or distinctive paving material.

Section 2. Severability Clause. Should any section or portion of this Ordinance be held unlawful and unenforceable by any court of competent jurisdiction, such decision shall apply only to the specific Section, or portion thereof, directly specified in the decision. All other section or portions of this Ordinance shall remain in full force and effect.

Section 3. Effective Date. Under the provisions of the City of Vernonia Charter of 1998, Chapter VIII, Section 32, the provisions of this Ordinance shall become effective on the thirtieth (30th) day after its adoption and authentication.

Section 4. Recorder's Duties: The City Recorder is hereby directed, upon its adoption and authentication, to number this Ordinance as the next adopted ordinance of the City of Vernonia.

Adopted as read in full this 15th day of April, 2002, by the following vote:

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Adopted as read by title only this 6th day of May, 2002, by the following vote:

AYES: 4 NAYS: 0 ABSTAIN: 0 ABSENT: 1

Signed by me, Mario Leonetti, Mayor, in authentication of its adoption this 6th day of May, 2002.

Cindy Ball

~~Mario Leonetti, Mayor~~ Council President
City of Vernonia

ATTEST: Janelle Serafin
Janelle Serafin
City Recorder

LEGEND

- Arterial Rural Standard
- Collector Rural Standard
- Local Street Rural Standard
- Arterial Urban Standard
- Collector Urban Standard
- Local Street Urban Standard
- Street Outside the UGB
- Existing 10' Paved Bike Path
- Existing Gravel Bike Path
- Proposed Bike Path
- Urban Growth Boundary
- Major Park
- School

N

Rock Creek
Knickerson Cr.
Roseview Heights (Private)
Roseview
Ross
Fairway (Private)
Railroad Grade (Private)
Lincoln-Washington
'H'
'G'
East
'F'
'F'
'E'
State
'D'
East
'D'
'C'
'B'
East
'A'
North
Louisiana
Knott
Juniper
Ivy
Heather
Grove
Fir
Elm
Douglas
Cherry
Mist
Birch
Alder
Polk
Cedar
Clatsop
4th
6th
5th
Nehalem
3rd
2nd
1st
Columbia
Weed
Hawkins Park
Shady
Park
Grant
Loulelana
Oregon
Oklahoma
Mississippi
Arkansas
North
Spencer Park
Riverside
Spencer
Alabama
Missouri
Texas
Ocier (Private)
Bridge
Bridge
Maple
Beer Creek
Cougar
Cougar
Madison
Jefferson
Adams
Maple
Washington
PROPOSED NEW BRIDGE
(Private)
California
(Private)
Umatilla
Anderson Park
Noakes
River
Nehalem River
Vernonia Lake

2667002/Classification.fh8

KCM, Inc.
7080 SW Fir Loop
Portland, Oregon 97223

City of Vernonia
TRANSPORATION SYSTEM PLAN

Figure 2-1
ROADWAY FUNCTIONAL CLASSIFICATIONS

Resolution No. 22-02

RESOLUTION AMENDING VERNONIA TRANSPORTATION SYSTEM PLAN

WHEREAS, the Vernonia City Council approved vacation of Maple street between Rose Avenue and Weed Avenue; and

WHEREAS, Maple Street is designated on the maps in the Vernonia Transportation System Plan as a public street; and

WHEREAS, after a public hearing was held before the Vernonia Planning Commission on June 6, 2002, and no objections were heard, the Planning Commission unanimously voted to recommend that Vernonia City Council approve the amendments to the Transportation System Plan, as recommended in the Staff Report; and

WHEREAS, after a public hearing was held before the Vernonia City Council on June 17, 2002, and no objections were heard, the City Council voted unanimously on July 8, 2002 to approve the amendments to the Transportation System Plan, as recommended in the Staff Report; and

WHEREAS, Maple Street will not be a public street right-of-way once the vacation goes into effect and should no longer be designated as such in the Transportation System Plan; and

NOW THEREFORE, IT IS HEREBY RESOLVED that the City of Vernonia, by and through its City Council, does hereby amend the Vernonia Transportation System Plan to remove the designation of Maple Street between Rose Avenue and Weed Avenue as a public street right-of-way on all maps in the Vernonia Transportation System Plan.

Passed and adopted by the City Council this 8th day of July, 2002 by the following vote:

AYES: 3 NAYS: 0 ABSTAIN: 1 ABSENT: 1

Cindy Ball
Mayor Cindy Ball

Attest: Janelle Serafin
Janelle Serafin, City Recorder

Resolution No. 05-03

A Resolution Amending Vernonia Transportation System Plan

Whereas, the City of Vernonia is seeking grant funding to improve pedestrian and bicycle facilities along Highway 102, Route 47 (Highway 47); and

Whereas, the current Vernonia Transportation System Plan makes reference to the potential for using a path through private property as a designated bypass; and

Whereas, the use of the "bypass" path on private property is infeasible at this time due to its being in private ownership and is infeasible into the unforeseeable future; and

Whereas, references to the potential use of the private pathway needs to be removed to focus the attention to the dangerous situation of the current pathway along Highway 102, Route 47, and to direct efforts and funding to bring the currently used pedestrian/bicycle way up to standards.

Now, therefore, the City Council of the City of Vernonia Resolves:

Section 1. The City of Vernonia, by and through its City Council, does hereby amend the Vernonia Transportation System Plan as follows:

1. Replace Figure 2-6 (Exhibit A-1) with Amended Figure 2-6 (Exhibit A-2) prepared by Tetratech/KCM.
2. Replace Figure 4-1 (Exhibit A-3) with Amended Figure 4-1 (Exhibit A-4) prepared by Tetratech/KCM.
3. Replace page 4-4, section BP1 (Exhibit A-5) with page 4-4A, Section BP1, (Exhibit A-6) prepared by Tetratech/KCM.
4. Replace page 4-12, section BP1 (Exhibit A-7) with page 4-12A, Section BP1, (Exhibit A-8) prepared by Tetratech/KCM.
5. Replace page 4-13, section BP10 (Exhibit A-9) with page 4-13A, Section BP10, (Exhibit A-10) prepared by Tetratech/KCM.

Section 2. Effective Date: The amendments authorized herein shall be effective immediately, and shall remain in effect until changed by resolution of the City Council.

Adopted this 17th day of March, 2003 by the following vote:

AYES: 5 NAYS: 0 ABSTAIN: 0 ABSENT: 0

Cindy Ball
Mayor Cindy Ball

Attest: Kate Conley
Kate Conley

795

ORDINANCE NO. 794

ORDINANCE AMENDING ORDINANCE 713 AND COMPREHENSIVE PLAN OF VERNONIA.

The City Council finds:

1. The City of Vernonia Comprehensive Plan adopted in 1996 by Ordinance 713 was accepted by Department of Land Conservation and Development (DLCD), except for the Urban Growth Boundary Expansion portion.

2. The proposed Urban Growth Boundary expansion included in the Comprehensive Plan does not meet with DLCD's requirements for Goals 2 (Land Use Planning) and 14 (Urbanization). With DLCD's acceptance of the Comprehensive Plan, Vernonia will complete the final task for Periodic Review.

3. The Planning Commission held a public hearing on March 20, 2003 at 6:45 PM and no objections were heard.

4. The Planning Commission voted unanimously to recommend the amendment to the Comprehensive Plan to remove the references to the proposed Urban Growth Boundary expansion.

5. The City Council held a public hearing on April 7, 2003 at 6:45 PM and received the comments of all persons desiring to be heard, and no objections were heard.

6. That it would be in the best interest of the City of Vernonia to amend the Comprehensive Plan and all maps of the City of Vernonia to remove the references to the 1996 proposed Urban Growth Boundary expansion.

The City of Vernonia ordains:

Section 1. **Amendment.** Ordinance 713 is hereby amended to remove the following text from Section III.H "Development Plan" under the heading "Urban Growth Boundary Considerations" of the Vernonia Comprehensive Plan:

"As a result of the catastrophic flood event of February, 1996, an additional 353 acres is being added to the City's Urban Growth Boundary. Of this total 338 acres is intended for residential use and 15 acres has been zoned by the county for County utility and service uses. This UGB extension is intended to provide the city with a sufficient supply of land outside the 500-year flood hazard area to enable relocation of residential uses outside that area and the acquisition of flood-prove [sic] properties to establish a floodway-protecting greenbelt."

Section 2. **Maps.** All references to the 1996 proposed extension of the Urban Growth Boundary on maps of the City of Vernonia are hereby nullified and shall be removed and/or disregarded.

Section 3. **Effective Date.** Under the provisions of the City of Vernonia Charter of 1998, Chapter VIII, Section 32, the provisions of this Ordinance shall become effective on the thirtieth (30th) day after its adoption and authentication.

Adopted as read in full this 7th day of April, 2003 by the following vote:

Ayes: 5 Nays: 0 Abstain: 0 Absent: 0

Adopted as read by title only this 21st day of April, 2003 by the following vote:

Ayes: 3 Nays: 0 Abstain: 0 Absent: 2

Approved this 21st day of April 2003.

CITY OF VERNONIA

Cindy Ball

Cindy Ball, Mayor

ATTEST:

Kate Conley, City Council Clerk