Underlined text is added;
~~Struckthrough~~ text is deleted

ORDINANCE NO. 2020

AN ORDINANCE AMENDING BEND CODE, CHAPTER 5 RELATED TO CONSTRUCTION WORK ON SATURDAYS AND SUNDAYS

Whereas, The Bend City Council enacted Ordinance NS-1362 in August, 1982 for the purpose, among other things, of prohibiting unreasonably loud or raucous noises. The ordinance provides that it is a class A civil infraction for a person to make an unreasonably loud or raucous noise without a permit, and

Whereas, the Bend City Council has determined that construction activities during weekend mornings (without a permit) create unreasonably loud or raucous noises, and that the public interest is best served by prohibiting such construction noise on Saturday mornings until 8:00 a.m. and on Sunday mornings until ~~10:00~~ 9:00 a.m.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Bend Code Chapter 5, Section 5.385 (2) (k) is hereby amended to read as follows:

Unreasonably Loud or Raucous Noise:

. . .

(k) Constructing or repairing buildings, streets, etc. Constructing (including excavating), demolishing, altering or repairing a building, street, sidewalk, driveway, sewer or utility line ~~between the hours of 10:00 p.m. and 7:00 a.m.~~ during the following time periods: Sunday evening through Friday morning between the hours of 10:00 p.m. and 7:00 a.m.; Friday evening through Saturday morning between 10:00 p.m. and 8:00 a.m.; and Saturday evening through Sunday morning between the hours of 10:00 p.m. and ~~10:00~~ 9:00 a.m., except as provided in subsection (4).

Read for the first time the 5th day of July, 2006.

Read for the second time the 19th day of July, 2006.

Placed upon its passage the 19th day of July, 2006.

YES: 6 NO: 0

Authenticated by the Mayor the 19th day of July, 2006.

Bill Friedman, Mayor

ATTEST:

City Recorder Patricia Stell

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Deschutes County Clerk

Certificate Page

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or as Fee Number _____.

ORDINANCE NO. NS-2021

AN ORDINANCE VACATING TRACT "A" OF THE PLAT OF JONAH'S LANDING THAT LIES WITHIN SW ¼ OF SECTION 22, TOWNSHIP 17 SOUTH, RANGE 12 EAST, W.M., IN THE CITY OF BEND, DESCHUTES COUNTY, OREGON.

The Bend City Council on June 21, 2006 initiated vacation proceedings as provided by ORS 271.130 that the following described area be vacated:

SEE EXHIBIT "A"

and stating the purpose for which the described property is proposed to be used and the reason for such vacation; and said petition being duly acknowledged;

The City of Bend having caused a notice of public hearing for vacation of public property describing the above street right of ways to be published in the Bulletin, as provided by ORS 271.110, once each week for two (2) consecutive weeks;

Within five days after the first day of publication of said notice, the City having caused a notice of street vacation to be posted at or near each end of the proposed vacation and in at least two conspicuous places in the proposed vacation area; the first publication and posting of said notice having occurred not less than 14 days prior to the hearing for said proposed vacation;

The City Council of the City of Bend having fixed the 19th day of January, 2005, at 7:00 p.m. local time in the City Council Chambers at 710 NW Wall Street, City of Bend, Oregon, as the time and place for the hearing upon said proceedings and at that time having heard all objections to the proposed vacation; and;

The City Council having determined that the public interest will not be prejudiced by the proposed vacation and that the property should be vacated:

NOW, THEREFORE, THE CITY OF BEND DOES ORDAIN AS FOLLOWS:

That the above described portion of street right of ways located in Bend, Deschutes County, Oregon, be vacated.

This vacation is hereby made a matter of record.

The City Recorder shall forthwith cause a certified copy of this ordinance to be filed and recorded in the Office of the County Clerk of Deschutes County, Oregon.

Read for the first time the 19th day of July, 2006.

Read for the second time the 2nd day of August, 2006.

Placed upon its passage the 2nd day of August, 2006.

Yes: 7 No: 0

Authenticated by the Mayor the 2nd day of August, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City Recorder

Please record pages 1-3 of Ordinance NS-2021

After Recording, return to:

Deputy City Recorder, City of Bend, 710 NW Wall, Bend 97701

EXHIBIT A

Tract "A" of the plat of "Jonah's Landing" recorded May 27, 2005 in plat cabinet G, page 685 in the office of the Deschutes County Clerk.

Subject to: All easements, restrictions and right-of-ways of record and those common and apparent on the land.

See attached map titled "EXHIBIT B" hereby incorporated by reference.

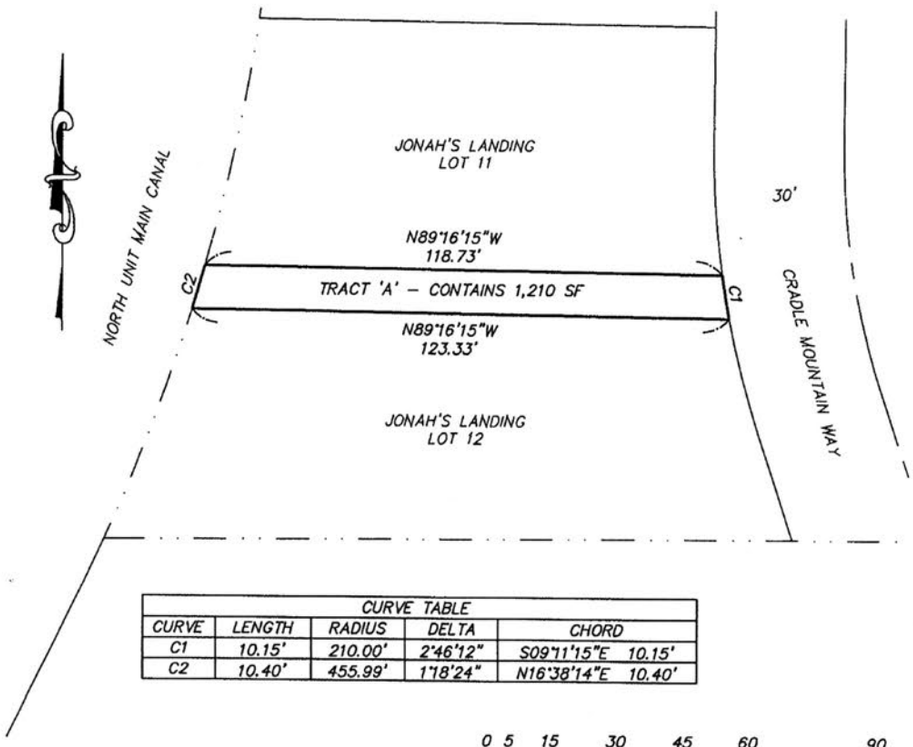
3-22-06
REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 17, 1986
PETER A. MANLEY
2214
RENEWAL DATE: 12/31/06

March 22, 2006
S:\Land Projects\060202B- JONAH'S LANDING LEGALS\docs\Tract A Jonah's Landing.doc
Page 1 of 1

EXHIBIT B

TRACT "A", PLAT OF "JONAH'S LANDING", LOCATED IN SECTION 22, TOWNSHIP 17 SOUTH, RANGE 12 EAST, W.M., CITY OF BEND, DESCHUTES COUNTY, OREGON



CURVE TABLE				
CURVE	LENGTH	RADIUS	DELTA	CHORD
C1	10.15'	210.00'	2°46'12"	S09°11'15"E 10.15'
C2	10.40'	455.99'	1°18'24"	N16°38'14"E 10.40'

0 5 15 30 45 60 90

SCALE: 1" = 30'

PREPARED BY:

HW&A SURVEYORS, ENGINEERS & PLANNERS

HICKMAN, WILLIAMS & ASSOCIATES, INC
698 NW YORK DRIVE, BEND, OREGON 97701
PHONE (541) 389-9351

3-22-06
REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 17, 1986
PETER A. MANLEY
2214
RENEWAL DATE: 12/31/06

060202BTRACTA EXHIBIT MAP.DWG
03/22/06

ORDINANCE NO. NS-2022

AN ORDINANCE VACATING HARVEST LANE THAT LIES WITHIN THE SW ¼ OF SE ¼ OF SECTION 17, TOWNSHIP 17 SOUTH, RANGE 12 EAST, W.M., IN THE CITY OF BEND, DESCHUTES COUNTY, OREGON.

A petition having been presented to the Bend City Council on May 17, 2006 requesting that the following described area be vacated:

SEE EXHIBIT "A"

and stating the purpose for which the described property is proposed to be used and the reason for such vacation; and said petition being duly acknowledged;

The City of Bend having caused a notice of public hearing for vacation of public property describing the above street right of ways to be published in the Bulletin, as provided by ORS 271.110, once each week for two (2) consecutive weeks;

Within five days after the first day of publication of said notice, the City having caused a notice of street vacation to be posted at or near each end of the proposed vacation and in at least two conspicuous places in the proposed vacation area; the first publication and posting of said notice having occurred not less than 14 days prior to the hearing for said proposed vacation;

The City Council of the City of Bend having fixed the 2nd day of August, 2006, at 7:00 p.m. local time in the City Council Chambers at 710 NW Wall Street, City of Bend, Oregon, as the time and place for the hearing upon said proceedings and at that time having heard all objections to the proposed vacation; and;

The City Council having determined that the public interest will not be prejudiced by the proposed vacation and that the property should be vacated:

NOW, THEREFORE, THE CITY OF BEND DOES ORDAIN AS FOLLOWS:

That the above described portion of street right of ways located in Bend, Deschutes County, Oregon, be vacated.

This vacation is hereby made a matter of record.

The City Recorder shall forthwith cause a certified copy of this ordinance to be filed and recorded in the Office of the County Clerk of Deschutes County, Oregon.

Read for the first time the 2nd day of August, 2006.

Read for the second time the 16th day of August, 2006.

Placed upon its passage the 16th day of August, 2006.

Yes: 7 No: 0

Authenticated by the Mayor the 16th day of August, 2006

Bill Friedman, Mayor

ATTEST:

Patricia S Stell

Patricia Stell, City Recorder

Please record pages 1 and 2 of Ordinance NS-2022.
After recording, return to Deputy City Recorder, 710 NW Wall Bend 97701

DESCHUTES COUNTY OFFICIAL RECORDS
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Deschutes County Clerk

Certificate Page

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previously recorded in Book _____ and Page _____,
or as Fee Number _____.

Exhibit 'A'

Harvest Lane Vacation

That parcel of land described in Dedicatory Deed as recorded August 7, 1963 and filed in volume 136, page 76 of Deschutes County Deed Records, being more particularly described as follows:

A portion of the SW1/4 SE1/4, Section 17, Township 17 South, Range 12, East, W.M. Beginning at a point which is located 694.35 feet South 89 degrees 55'44" East and 670.0 feet North of the Southwest corner of the SW1/4S E1/4 of Section 17; thence North for 250.40 feet; thence South 58 degrees 38' West 97.50 feet; thence West 218.97 feet; thence South 68 degrees 27' West 198.15 feet; thence South 23 degrees 30' West approximately 290 feet more or less to the Easterly boundary of the old Dallas California Highway; thence Southeasterly along the boundary of said highway to a point bearing North 23 degrees 30' East, which line is 30.0 feet from and parallel with the Northwest boundary of a 30.0 ft. wide road; thence North 23 degrees 30' East approximately 304 feet more or less; thence North 68 degrees 27' East 180.0 feet; thence East for 272.13 feet; thence South 169.65 feet; thence East for 30.0 feet more or less to the point of beginning, said road to contain 0.7 acres, more or less.

DO NOT RECORD THIS SIDE

ORDINANCE NO. NS-2023

AN ORDINANCE AMENDING THE CITY OF BEND DEVELOPMENT CODE, ORDINNACE NO. NS-2016 (ZONING MAP), BY CHANGING THE ZONING DESIGNATION OF TWO PARCELS OF LAND FROM RS, RESIDENTIAL URBAN STANDARD DENSITY TO RM, RESIDENTIAL URBAN MEDIUM DENSITY.

THE CITY OF BEND ORDAINS AS FOLLOWS

Section 1. The Bend City Council has held a public hearing, considered the Hearings Officer's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Findings and Recommendations of the Hearings Officer dated July 12, 2006, file number PZ 06-85.

Section 2. The City of Bend Zoning Map is amended by changing the designation of the property described in Exhibit A and depicted in Exhibit B from Residential Urban Standard Density (RS) to Residential Urban Medium Density (RM).

Read for the first time the 2nd day of August, 2006.

Read for the second time the 16th day of August, 2006.

Placed upon its passage the 16th day of August, 2006.

Yes: 7 No: 0

Authenticated by the Mayor the 16th day of August, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City Recorder

EXHIBIT "A"
TO
ORDINANCE NO. NS____

The subject property is described as follows:

Two parcels of land containing 10.9 acres more or less, located in a portion of the Northwest One-Quarter (NW 1/4) of the Northeast One-Quarter (NE 1/4) of Section 20, Township 17 South, Range 12 East, Willamette Meridian, City of Bend, Deschutes County, Oregon, being more particularly described as follows:

PARCEL I:

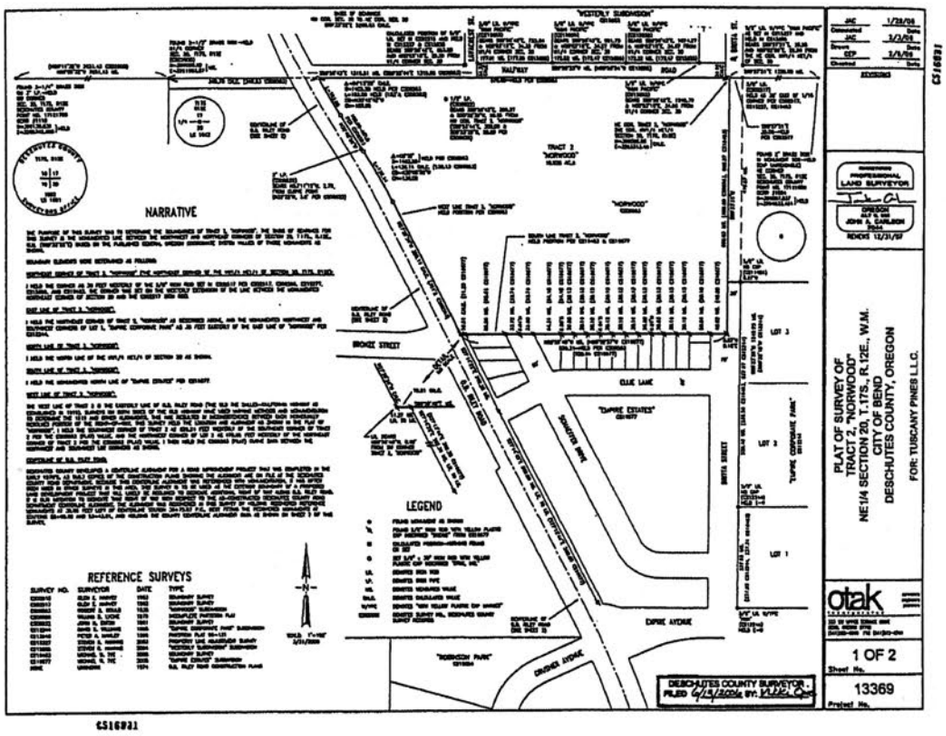
Tract 2 of NORWOOD ADDITION, EXCEPTING THEREFROM the following:

Beginning at the Northwest corner of Tract 2, NORWOOD ADDITION, Deschutes County, Oregon; thence South 89°55'44" East for 300.00 feet; thence South 00°23'28" West for 50.00 feet; thence South 58°23'20" West for 229.36 feet, more or less, to the Easterly right of way line of the old The Dalles-California Highway (1919 location); thence North 32°32' West for 97.00 feet; thence Northwesterly on a curve to the right whose central angle is 05°41' and whose radius is 1402.5 feet for 103.00 feet to the point of beginning.

PARCEL II:

Beginning at the Northwest corner of Tract Numbered 2, NORWOOD ADDITION, Deschutes County, Oregon; thence South 89°55'44" East for 300.00 feet; thence South 00°23'28" West for 50.00 feet; thence South 58°23'20" West for 229.36 feet, more or less, to the Easterly right of way line of the old Dalles-California Highway (1919 location); thence North 32°32 west for 97.00 feet; thence Northwesterly on a curve to the right whose central angle is 05°41' and whose radius is 1402.5 feet for 103.00 feet to the point of beginning.

EXHIBIT "B"
TO
ORDINANCE NO. NS____



ORDINANCE NO. NS-2024

AN ORDINANCE VACATING PORTION OF NELS ANDERSON ROAD THAT LIES WITHIN THE SE ¼ OF NW ¼ OF SECTION 16, TOWNSHIP 17 SOUTH, RANGE 12 EAST, W.M., IN THE CITY OF BEND, DESCHUTES COUNTY, OREGON.

A petition having been presented to the Bend City Council on May 17, 2006 requesting that the following described area be vacated:

SEE EXHIBIT "A"

and stating the purpose for which the described property is proposed to be used and the reason for such vacation; and said petition being duly acknowledged;

The City of Bend having caused a notice of public hearing for vacation of public property describing the above street right of ways to be published in the Bulletin, as provided by ORS 271.110, once each week for two (2) consecutive weeks;

Within five days after the first day of publication of said notice, the City having caused a notice of street vacation to be posted at or near each end of the proposed vacation and in at least two conspicuous places in the proposed vacation area; the first publication and posting of said notice having occurred not less than 14 days prior to the hearing for said proposed vacation;

The City Council of the City of Bend having fixed the 2nd day of August, 2006, at 7:00 p.m. local time in the City Council Chambers at 710 NW Wall Street, City of Bend, Oregon, as the time and place for the hearing upon said proceedings and at that time having heard all objections to the proposed vacation; and;

The City Council having determined that the public interest will not be prejudiced by the proposed vacation and that the property should be vacated:

NOW, THEREFORE, THE CITY OF BEND DOES ORDAIN AS FOLLOWS:

That the above described portion of street right of ways located in Bend, Deschutes County, Oregon, be vacated.

This vacation is hereby made a matter of record.

The City Recorder shall forthwith cause a certified copy of this ordinance to be filed and recorded in the Office of the County Clerk of Deschutes County, Oregon.

Read for the first time the 16th day of August, 2006.

Read for the second time the 6th day of September, 2006.

Placed upon its passage the 6th day of September, 2006.

Yes: 6 No: 0

Authenticated by the Mayor the 16th day of August, 2006

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City Recorder

Please record pages 1 & 2 of Ord. NS-2024.
After recording return to: Deputy City Recorder,
City of Bend, 710 NW Wall, Bend, OR 97701.

DESCHUTES COUNTY OFFICIAL RECORDS
NANCY BLANKENSHIP, COUNTY CLERK

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EXHIBIT A - Page 1 of 1

File 7014001A
Drawing 10B-17-12
10/16/2003

To Be Vacated by the City of Bend

A parcel of land lying in the SE¼NW¼ of Section 16, Township 17 South, Range 12 East, W.M., Deschutes County, Oregon and being a portion of that street dedicated as Nels Anderson Road in MAJOR PARTITION 81-18, Deschutes County, Oregon; the said parcel being that portion of said street lying Southeasterly of a line parallel with and 9.144 meters Southeasterly of the "N2" center line which center line is described as follows:

Beginning at Engineer's center line Station 'N2' 0+091.495, said station being 820.621 meters South and 490.125 meters East of the Northwest Corner of Section 16, Township 17 South, Range 12 East, W.M.; thence North 3° 27′ 51″ East 75.321 meters; thence on a 60 meter radius curve right (the long chord of which bears North 14° 09′ 11″ East 22.257 meters) 22.387 meters; thence North 24° 50′ 30″ East 168.701 meters; thence on a 75 meter radius curve left (the long chord of which bears North 1° 53′ 38″ West 67.481 meters) 69.994 meters; thence North 28° 37′ 47″ West 35.808 meters to Engineer's center line station 'N2' 0+463.706 which equals Engineer's center line station 'N' 0+463.706; thence on a 75 meter radius curve right (the long chord of which bears North 0° 33′ 46″ West 70.575 meters) 73.479 meters; thence North 27° 30′ 15″ East 85.685 meters to Engineer's center line Station 'N' 0+637.092.

This parcel of land contains 766 square meters, more or less.

ORDINANCE NO. NS-2025

AN ORDINANCE AMENDING THE BEND AREA GENERAL PLAN TO DELETE "MILL 'A' BUILDING, 805 SW INDUSTRIAL WAY" FROM TABLE 2 OF CHAPTER 3, "INVENTORY OF HISTORIC SITES IN THE BEND URBAN AREA."

THE CITY OF BEND FINDS THAT:

1. An application (File No. PZ 06-322) was submitted on May 10, 2006 by Mill A Associates, Limited Partnership, to remove the Mill A Building from the Inventory of Historic Sites in the Bend Urban Area (Table 2, Chapter 3 of the Bend Area General Plan);

2. That application was considered by the Deschutes County Historical Landmarks Commission on July 20, 2006, as provided in Sec. 10.107 of the Bend City Code;

3. The Bend City Council held a public hearing on September 6, 2006 to consider the application and the findings of the Historic Landmarks Commission.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Mill A Building, 805 SW Industrial Way, no longer has significance as a historic or cultural resource, as required by Bend City Code Sec. 10.107.

Section 2. There is a public need and benefit to amend the text of the Bend Area General Plan by deleting the Mill A building from the Inventory of Historic Sites in the Bend Urban Area.

Section 3. The Bend Area General Plan, Chapter 3, Table 2 is amended as shown in the attached Exhibit A.

Read for the first time the 20th day of September, 2006.

Read for the second time the 4th day of October, 2006.

Placed upon its passage the 4th day of October, 2006.

YES: 6 NO: 0

Authenticated by the Mayor the 4th day of October, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City of Bend Recorder

Table 2
Inventory of Historic Sites in the Bend Urban Area

HISTORIC STRUCTURES	LOCATION
H. E. Allen House	875 Brooks Street
Bend Athletic Club Gymnasium✶	520 NW Wall Street
Bend Railroad Depot	1160 NE Division Street
Bend Water & Light Co. Powerhouse/dam	Foot of Vermont Street
Bend Woolen Mill	1854 NE Division Street
Brooks Scanlon Craneshed building	721 SW Industrial Way
~~Mill "A" building~~	~~805 SW Industrial Way~~
Charles Boyd Homestead✶	20410 Bend River Mall Drive
Cozy Hotel	327 NW Greenwood Avenue
Deschutes County Library Building✶	507 NW Wall Street
Delaware Grocery	845 NW Delaware Avenue
Downing Hotel	1033 NW Bond Street
Trinity Episcopal Church✶	469 NW Wall Street
First Presbyterian Church	157 NW Franklin Avenue
A.L. French Home	429 NW Georgia Avenue
Hoover's Universal Garage	124-128 NW Greenwood Avenue
Steidl and Tweet irrigation dam	Division St. near Yale Avenue
Kenwood School	701 NW Newport Avenue
Keyes House	912 NW Riverside Boulevard
Liberty Theatre	849-851 NW Wall Street
Lucas House	42 NW Hawthorne Avenue
Thomas McCann House✶	440 NW Congress Street
Mountain View (Mayne) Hospital	515 NW Kansas Avenue
August Nelson Building	838 NW Bond Street
Niswonger House	44 NW Irving Avenue
O'Donnel Building	921-933 NW Wall Street
Old Clinic	731 NW Franklin Avenue
Old Bend High School Building✶	520 NW Wall Street
O'Kane Building✶	115 NW Oregon Avenue
George Palmer Putnam House	606 NW Congress Street
Pierson Blacksmith Shop	211 NW Greenwood Avenue
A. J. Tucker Blacksmith Shop	200-202 NW Greenwood Avenue
James E. Reed House	45 NW Greeley Avenue
Reid School✶	129 NW Idaho Avenue
Evan A. Sather Home✶	7 NW Tumalo Avenue
Sawyer House	434 Drake Road
St. Francis Catholic Church	494 NW Lava Road
Shevlin-Hixon Executive House	545 NW Congress Street
N.P. Smith Pioneer Hardware Building✶	935-937 NW Wall Street
Spheir Building	901 NW Bond Street
Stover House✶	1 Rocklyn Road
Old U.S. Post Office✶	777 NW Wall Street
John I. West Building	130 NW Greenwood Avenue
Wright Hotel✶	215 NW Greenwood Avenue
SITES DESIGNATED WITH PLAQUES	**LOCATION**
1813 Rock	129 NW Idaho Street
Bend School Landmark	Drake Park
A.M. Drake Homesite	Drake Park
Foley Landmark	Pilot Butte State Park
Johns Landmark	Drake Park
Oregon Trunk Freight Warehouse Site	Railroad tracks & NW Division
Pilot Butte Inn Site	1133 NW Wall Street
Shevlin-Hixon Mill site	Shevlin Center near dam
Central Oregon Pioneers' Landmark	Pioneer Park
Weist Homesite Landmark	1315 NE Third Street

✶ Sites on the National Register of Historic Places

ORDINANCE NO. NS-2026

**AN ORDINANCE AMENDING
THE CITY OF BEND GENERAL PLAN AND THE BEND URBAN AREA - TRANSPORTATION SYSTEM PLAN
IN RESPONSE TO A REMAND BY THE LAND CONSERVATION AND DEVELOPMENT COMMISSION**

WHEREAS, on November 12, 1998, the Oregon Department of Land Conservation and Development (DLCD) issued a notice of Periodic Review Order of the Bend Area General Plan; and

WHEREAS, on March 6, 2000, DLCD gave final approval for a revised Periodic Review work program (Order No. 001110), including Task #1, adoption of a Transportation System Plan; and

WHEREAS, on October 11, 2000, the city of Bend adopted the Transportation System Plan (TSP) incorporating it into Chapter Seven of the Bend Area General Plan; and

WHEREAS, on March 1, 2001, the DLCD remanded several items (Remand Order No. 001291) of the TSP back to the City to address as a part of Periodic Review work subtasks; and

WHEREAS, on October 4, 2006, the Bend City Council held a public hearing, which public notice was provided, to receive public testimony about a proposed ordinance to amend the Bend Area General Plan, the Bend Urban Area Transportation System Plan related to certain subtasks of Periodic Review;

THE CITY OF BEND DOES ORDAIN AS FOLLOWS:

The Bend Area General Plan and Transportation System Plan are amended to read as follows (***Text additions*** are represented by **bold font** and ***deleted text*** is represented in **bold, strike-out font**):

SECTION ONE

Table of Contents

(*Revise the Table of Contents, per the following NEW recommended sections of the TSP*)

SECTION TWO

List of Figures and Illustrations

(***Revise the list to include Figure 24 b***, *per the following revision to Section 6.3.1.3*)
[SEE: Exhibit - B, Appendix C]

SECTION THREE

List of Resource Documents

*(**Add five documents** to the list of Resource Documents :)*

- **A.11 City of Bend – BMPRD Resolution No. 228 / Intergovernmental Agreement (IGA), 2003**
- **A.12 Bend City Council - Transportation Implementation Plan (TIP), 2001**
- **B.2.1 Rails-With-Trails – Lessons Learned, U.S. Dept. of Transportation, 2002**
- **B.2.2 BMPRD – Deschutes River Trail – Action Plan, 2002**
- **B.2.3 City of Bend – Assessment of Bicycle and Pedestrian System Needs, August 2006** ***[SEE: Exhibit - B]***

SECTION FOUR

TSP: Map Exhibits

- ***Replace*** *the existing TSP: Map A – Bend Urban Area Bicycle and Primary Trail System Plan with the new plan map; (and RENAME)* ***Bend Urban Area - Bicycle and Pedestrian System Plan*** *[also, switch the order of the maps, so the Roadway System Map is now "A" and* ***the Replacement Map is now TSP: Map - B****]. Included in this mapping detail are the corresponding revisions to the Primary Trail System Plan (including trail realignments, deletions and additions).* ***Correct all references*** *in the TSP document to be consistent with this map reference modification.* ***[SEE: Exhibit - B, Appendix C]***

- ***Replace*** *the existing TSP: Map C - (and RENAME :)* ***Bend Urban Area Primary Trail Surface Type*** *Map, with a revised map that illustrates the revised Primary Trail System trail alignments, deletions and additions and the respective proposed surface treatments.* ***The replacement map will remain TSP: Map C****.* ***[SEE: Exhibit - B, Appendix C]***

SECTION FIVE

TSP Chapter 4

*(Add a **new section**: 4.2.2.4 Neighborhood Accessway System Needs :)*

Section 4.2.2.4 Neighborhood Accessway System Needs

Accessway Deficiencies: **There may be some areas of the City where mobility for non automobile modes of travel is hampered by a lack of good system connectivity or there are certain physical or psychological barriers, such as the combination of the Parkway, the Railroad and Third Street that limits route alternatives for east-west travel across the center of town. There are no specific locations or areas that have demonstrated a bicycling or walking crash record or a degree of user difficulty that warrants urgent remedial action. And, there are undeveloped areas of the community that will need to follow a grid street pattern to ensure that an adequate system of accessways is achieved. It is anticipated that a complete accessway system will develop as other public infrastructure is constructed. As such, it is difficult to prioritize any particular accessway deficiency as a near-, intermediate- or far-term need for the community. Addressing the timing of any accessway deficiency remediation is also problematic given either the existing lack of, or limitation of, funding for these types of improvements.**

SECTION SIX

TSP Chapter 5

Section 5.5.4 Bicycle and Pedestrian Facilities

(Subsequent to the first paragraph of this section, ***add new paragraphs****, per the following :)*

In August 2006, a report, prepared as a part of a DLCD grant, provided an assessment of Bend's neighborhood bicycle and pedestrian needs. The study concluded that an accessway plan for a system of neighborhood bicycle and pedestrian facilities should be included within the plan that will further augment the year 2000 TSP contemplated Primary Trail system. This report, *Assessment of Bicycle and Pedestrian System Needs* Resource Document B.2.3, is included in the TSP as a Resource Document. A new plan map; *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B) recommended by the report includes a system of accessways, primary trails and on-street bike lanes, and replaced the preexisting, 2001, TSP: Map Exhibit A, *Bend Urban Area - Bicycle and Primary Trail System Plan* Map. The referenced report and appendices, shall serve as the plan for guiding decisions of where future accessways, primary trails and bike lanes should be located.

Generally, new *local streets* and *sidewalks* will complete the system of accessways if a regular grid street pattern is developed. However, effort should be made to complete *connector trails* where they may be identified on the plan or others that may be determined needed. Development of these accessways should maintain the criteria of being safe, feasible and practical. Primary trail, sidewalk and bike lane priorities are depicted in TSP Figures 16 a, b and c. Any new accessways that are delineated in the accessway report (Appendix "A") shall be considered as a supplement to the list of projects delineated in TSP Figures 16 a, b and c. The City should consider these priorities, or modifications thereof, during yearly capital improvement project construction planning/ budgeting.

SECTION SEVEN

TSP Chapter 6

Section 6.0 TRANSPORTATION SYSTEM PLAN

(Precede the first paragraph of this section by a ***new paragraph****, per the following :)*

The improvement components of the Bend Urban Area Transportation System Plan shall be as articulated in TSP Section 5.5 Recommended Alternative.

Section 6.3 PEDESTRIAN AND BICYCLE SYSTEM

(Subsequent to the first paragraph of this section, add ***new paragraphs****, per the following :)*

In 2002, a consultant for the Bend Metropolitan Park and Recreation District prepared an implementation strategy called the *Deschutes River Trail - Action Plan* Resource Document B.2.2. This plan provided the District with important detail to assist in guiding the development of future Capital Improvement Project planning for the river trail system and as an important background document for seeking supplemental funding resources including grants, donations and in-kind contributions.

The planned network for this system shall also include the elements defined by the August 2006, *Assessment of Bicycle and Pedestrian System Needs* Report for accessway and Primary Trail improvement recommendations. Improvement recommendations of this report shall have priority where (and if) conflicts exist between the 2000 TSP and the 2006 TSP amendments, unless otherwise stipulated in the TSP or directed by the Bend City Council.

Section 6.3.1.3 Multi-Use Trails

*(Add **new sections** of text to the end of Multi-Use Trails, per the following :)*

Neighborhood Accessways: **As indicated in Chapter 5 of the TSP, an August, 2006, report, provided an assessment of Bend's neighborhood accessways. The neighborhood accessway system is comprised of a wide range of facilities that include; a variety of trail types and on-street facilities, that are collectively referred to as "accessways". *[Note: The City Development Code (2006) also calls for "accessways" and/or "access corridors" – that are defined as separate travel ways for pedestrians and bicyclists that may either be within specific dedicated right-of-ways or easements for that purpose.]* The purpose of these facilities is; to minimize travel distances within and between residential areas and commercial centers, major employment areas, transit stops, or within and between nearby neighborhood activity centers such as schools and parks. The greater system of proposed accessways will provide transportation and recreation mobility opportunities for non-automobile travel through out the community. This accessway plan for the City generally uses a geographic spacing for accessways on an interval of approximately every *quarter-mile.***

The Primary Trail plan is delineated on the *Bend Urban Area - Bicycle and Pedestrian System Plan – TSP: Map Exhibit B.* The alignments depicted as proposed should be considered general in nature. Flexibility should be permitted during the development and design of private lands to locate these planned primary trails to fit the context of the natural terrain, to minimize trail grade, to consider street crossings and other safety issues, to account for the pattern and design of the development, or consider any other topographic or geographic barriers or issues, etc. Also, while it may be suitable to locate a trail next to a street due to existing difficult to resolve issues for trail location, it is the intent of the plan to locate trails - *as much as possible* - away from streets to minimize conflicts with other types of conflicting traffic. It is also the intent of the trail system (both connector and primary) to provide direct and convenient walking and bicycling connections to parks, schools, open spaces, employment areas, shopping destinations, and the like. Balancing these trail design criteria may require a concerted coordination effort between the City, the Park District and the new development to satisfactorily locate these trails to ensure that the intent of the plan will be fulfilled.

Railroad Right-of-way Trails: **There has been a growing interest nationwide in developing both "abandoned" and "active" railroad right-of-ways as part of local trail systems. One recent study examined these special trail corridors in detail; *Rails-with-Trails - Lessons Learned* Resource Document B.2.1, 2002. This report was prepared for the U.S. Department of Transportation and provides a comprehensive analysis and evaluation of current *rails with trails* (RWT) development practices. The report illustrates how trails can be successfully developed along railroad right-of-ways and provides valuable guidance concerning trail design and development that help to address important issues such as safety, liability and aesthetics.**

The Springwater Trail in the Portland area (Figure 24b) is an excellent example of this type of trail development that is located along an active railroad right-of-way within the State of Oregon.

[SEE: Exhibit - B, Appendix C, for Figure 24b picture]

Figure 24 b. Springwater Trail, Portland, Oregon
Photo by: City of Portland

A trail within/parallel to the Burlington Northern-Santa Fe Railroad corridor in the Bend area could provide a substantial enhancement of the Primary Trail system. The *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B) illustrates the alignment of this "Rails-with-Trails" concept. It should be acknowledged that, due to site specific railroad operational requirements, alternative parallel accessway/roadway corridors may be more suitable for avoiding problematic sections of this rail-trail corridor. Also, grade-separated rail-roadway crossings may be difficult to retrofit or may be operationally unsuitable for joint trail and rail operation and parallel alternative routes should be considered. Typically, these alternative routes, if used, should not deviate physically too far from the intended corridor alignment (i.e., follow the nearest parallel alternative corridor). Further planning and discussion with the railroad representatives, adjacent property owners and field investigations are required to determine the feasibility of this concept.

Section 6.5.1.7 Residential Local Streets

*(**Modify the fourth paragraph** per the following **underlined text** and **~~strike-out~~** text)*

The **~~Subdivision Ordinance update will~~** **Bend Development Code also advocates** flexibility in street design while accommodating emergency service access. It has been recognized that skinnier streets may reduce traffic speeds and thereby improve livability. The State (DLCD) has **~~been working on~~** **developed** guidelines that also **~~seek~~** **strive** to improve livability through the use of narrower streets. The City's **~~Subdivision Ordinance~~** **Development Code** is consistent with that objective. **~~however the~~**The City will continue to explore **~~methods to~~** **local street designs that** balance this goal with **the unique public safety characteristics of the Bend urban area ~~public safety needs and addressing the unique characteristics of the Bend urban area~~.**

*(Add a **new section** to the end of the fifth paragraph, per the following)*

The *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B) provides plan guidance on where and how frequent local roadways should be developed. While this plan only depicts a grid on roughly a quarter-mile interval of the *main* local streets, further coordination should occur between the City and new development to satisfactorily locate other intervening local streets. This coordination of the full local street network should consider local land use, existing abutting development street connections and patterns, and other topographic and/or geographic barriers or issues. This more complete local roadway system should fulfill the street grid and connectivity objectives of other City plans and ordinances.

TSP Section 6.9.1 TRANSPORTATION AND LAND USE

*(Add **NEW policy**, numbered 9)*

9. As areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized, the city, property owners, developers and all applicable service districts shall work cooperatively to develop appropriate plans for extensions and connections of the transportation system, including but not limited to; roads, sidewalks, trails and/or public transportation. The objective of this planning effort will be to ensure that

the new areas promote and facilitate the development of urban land use densities and systems that will fulfill the goals and objectives of the Transportation System Plan – see also: 6.9.4, Policy 22.

Section 6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS Policy:

*(**Modify Policy** 2 per the following strike-out and underlined wording)*

2. The City and Park District shall work together to acquire, develop and maintain the *primary* trails designated on the ~~**Bend Urban Area - Bicycle and Primary Trail System Plan Map (Exhibit A)**~~ ***Bend Urban Area - Bicycle and Pedestrian System Plan – TSP: Map Exhibit B.*** **New development shall be required to construct and dedicate Primary Trails for public use according to this plan. The alignments depicted are general in nature and shall be located according to criteria defined in TSP Section 6.3.1.3.** These trails, and future trail additions, shall support the need for non-motorized travel in the community.

*(Add a **NEW policy**, numbered 19.)*

19. The City shall work with the Burlington Northern – Santa Fe (BNSF) Railroad to determine where, if possible, railroad right-of-ways could be used also as trail corridors. Provided this joint-use agreement can be reached with the Railroad company, the City shall evaluate the entire Rails with Trails Corridor in light of opportunities to augment the local primary trail system and future amendments to the TSP should be considered to establish those corridors as a part of the Transportation System Plan.

*(Add a **NEW policy,** numbered 20.)*

20. There are expansion plans for the city domestic water storage and supply facilities on the Overturf Butte Reservoir site, therefore the existing "connector trails" *alignments* shown on the plan shall be considered temporary in nature. These trails shall be subject to relocation if conflicts arise relative to future plans to expand or alter the water storage facilities on the Butte. Relocation of these trails to alternative alignments shall not require a Transportation System Plan amendment. In the event that these trails cannot be relocated to an alternative location that serves the same trail function on the Butte and therefore the affected trail(s) must be closed to public use, this type of action *shall* require an amendment to the TSP.

*(Add a **NEW policy,** numbered 21.)*

21. The city of Bend and Bend Metro Park and Recreation District shall develop a Memorandum of Understanding (MOU) or an Intergovernmental Agreement (IGA) to define respective agency roles and responsibilities relative to the network of trails on Overturf Butte.

*(Add a **NEW policy,** numbered 22.)*

22. As land areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized and as it relates specifically to the Bend Primary Trail System, external destinations (beyond the UGB) and specific connection points (within the existing UGB) have been delineated on the Bend Urban Area Bicycle and Pedestrian System Plan [Map A] – see also: 6.9.1, Policy 9.

Section 6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS Implementation

(*Existing Implementation Item 1 - **modify the first sentence**, per the **underlined text** :*)

1. The City shall implement the TSP trail policies in cooperation with the Bend Metro Parks and Recreation District (BMPRD) as described in the joint agency

intergovernmental agreement **Resource Document A.11**, ~~**dated October 1997**~~ **2003**, and any subsequent amendments. The City and BMPRD shall meet to review the intergovernmental agreement and make appropriate amendments, as necessary, to allocate responsibility for trail construction and maintenance.

(Existing Implementation Item 3. - ***add a second sentence*** *per the* ***underlined text*** *:)*

3. New trails shall be built generally following the priority of trails listed in the *Bend Urban Trails Plan*, or subsequent updates. **New *accessways* shall be built following the system defined by the *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B) *Assessment of Bicycle and Pedestrian Needs* Report [Resource Document 2.3], as much as practical.**

(Existing Implementation Item 6. - ***modify the first sentence*** *with the following* ***underlined text*** *and* ***insert*** *the subsequent* ***sentence*** *:)*

6. New and existing trails **and accessways** shall be created and maintained following the design standards described in **the State of Oregon Bicycle and Pedestrian Plan, the Bend Metro Park and Recreation District (BMPRD) Parks, Recreation and Green Spaces Comprehensive Plan,** the Bend Urban Trails Plan, **the City of Bend Standards and Specifications or subsequent updates of those documents. Local design standards shall have precedence over state standards, where there are conflicts – The BMPRD standards shall apply to the Primary Trail System and the city of Bend Standards shall apply to all other non park, related public improvements.**

(*Existing Implementation Item 8 -* ***modify the first sentence****, per the* ***underlined text*** **:**)

8. The City shall update inventories of existing bike lanes, **accessways** and sidewalks, and identify gaps and missing system segments, and, in conjunction with the Deschutes County Pedestrian and Bicycle Advisory Committee, prioritize these for ~~**completion and**~~ **input into the annual City of Bend Capital Improvement Program planning process as indicated in the Council adopted Transportation Implementation Plan (TIP).**

(Implementation: ***ADD a new item [#14]*** *at the end of the current list :)*

14. Work with private property owners to open-up existing, public accessway easements and make improvements to accommodate public use.

(Implementation: ***ADD a new item [#15]*** *at the end of the current list :)*

15. The City shall work with the BNSF Railroad to determine the feasibility of the "Rails-with-Trails" concept. If this trail corridor is feasible, then the City shall develop acceptable trail designs and details for implementation of this part of the primary trail system. The City should consider subsequent amendments to the TSP to incorporate those corridors as a part of the *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B).

Section 6.9.6 STREET SYSTEM Policy

(Existing RESIDENTIAL STREETS Policy #14: ***modify*** *per the following* ***underlined text****)*

14. A grid-like pattern of residential local streets shall be developed whenever practical in order to increase street connectivity within a neighborhood. **A system of local streets shall be developed within a framework that is defined by the *Bend Urban Area - Bicycle and Pedestrian System Plan* (TSP: Map Exhibit B), as much as practical.**

SECTION EIGHT

TSP Chapter 7

Section 7.2.1 Transportation System Development Charges

(Following the first paragraph of this section, ***add new paragraphs****, per the following :)*

In 2003, the City of Bend conducted a study of the methodology, including an evaluation of the inclusion of non-automobile system capacity projects in the list of eligible improvements, and fee revisions to the City's Transportation - System Development Charges (T-SDCs) system. The Bend City Council did include sidewalk capacity improvements but chose not to include *trails* as an eligible expenditure element of the city Transportation SDCs. However, the Bend Metro Park & Recreation District included improvements to portions of the *Primary Trail System* as eligible elements of the Park SDC system, in January 2003.

*(**Add a new section**: 7.4.0 Transportation Implementation Plan :)*

Section 7.4.0 Transportation Implementation Plan

In 2001, the Bend City Council adopted the Transportation Implementation Plan (TIP) Resource Document A.12 in an effort to provide City staff with policy direction and design criteria for implementing the goals of the General Plan and the TSP. The TIP identified 12 topic areas of guidance; nine of the subjects dealt with the completing transportation infrastructure, two with transportation studies and one concerned public involvement. The fundamental premise of the TIP was "*to continue creating a transportation system, which maximizes the ability of vehicles to flow smoothly through the city streets while providing alternative transportation modes, protecting neighborhoods and enhancing the livability of the community.*"

*(**Add a new section**: 7.4.2.3 Neighborhood Accessway System :)*

Section 7.4.2.3 Neighborhood Accessway System

Completion of the neighborhood access system is anticipated to be completed by both private and public funding sources. A majority of the accessway improvements are anticipated to come through the private development process as new development materializes along the planned accessway system. The balance of the remaining accessway needs shall be completed on a prioritized schedule as public funding is identified to enable construction of the necessary improvements.

*(**Add a new Policy** to section 7.5, per the following :)*

8. Use the City Council adopted Transportation Implementation Program (TIP) as a guide to the development of all transportation projects in the Capital Improvement Program (CIP).

SECTION NINE

The City Council adopts this Staff Report and the analysis contained therein - including **Ordinance Exhibit - B.**

Read for the first time the 4th day of October, 2006.

Read for the second time the 18th day of October, 2006.

Placed upon its passage the 18th day of October, 2006.

YES: 6 NO: 0 ABSTAIN: 0

Authenticated by the Mayor the 18th day of October, 2006.

Bill Friedman, Mayor

Attest:

Patricia Stell, City Recorder

ITEM NO. __

STAFF REPORT

LEGISLATIVE AMENDMENT TO THE BEND AREA GENERAL PLAN AND THE BEND URBAN AREA - TRANSPORTATION SYSTEM PLAN

PROJECT NUMBER: **PZ 06-481**

DATE OF REPORT: August 31, 2006

DATE OF HEARING: September 11, 2006: Planning Commission
October 4, 2006: City Council

APPLICANT: City of Bend

REQUEST: This request is to consider adoption of Text and Map amendments to the TSP

Approval of this action will amend both the Bend Urban Area General Plan - Chapter 7 AND the Transportation System Plan [TSP] that was required by a remand order from the Oregon Department of Conservation and Development (DLCD), which the Bend City Council had earlier adopted as part of completion of a periodic review subtask item. This amendment will address (1) the bicycle and pedestrian circulation elements of the plan, (2) provide a plan for a local street grid system, and (3) provide recognition of the Bend City Council Transportation Implementation Plan (TIP).

PROJECT MANAGER: Rick Root, Transportation Planner

APPLICABLE CRITERIA:

(1) The Bend Area General Plan
(2) Bend Urban Area - Transportation System Plan
(3) State of Oregon Transportation Planning Rule - TSP Remand

ATTACHMENTS:

Exhibit - A Proposed Implementing Ordinance
Exhibit - B *Assessment of Bicycle and Pedestrian System Needs* - Report

I. BACKGROUND

A. LAND CONSERVATION AND DEVELOPMENT COMMISSION

In 1993, the State of Oregon Land Conservation and Development Commission (LCDC) adopted the Transportation Planning Rule (TPR). The TPR directed cities and counties in the state to adopt Transportation System Plans (TSP). In accordance with this mandate, the city of Bend adopted the *Bend Urban Area – Transportation System Plan* (TSP), in 2000. Upon reviewing the TSP, and when also considering public comments concerning the plan, the Oregon Department of Land Conservation and Development (DLCD) issued a Remand Order (No. 001291), in 2001, directing the City to address certain deficiencies that they had identified in the plan. This plan amendment will address the Remand issues concerning Bicycle and Pedestrian elements of the Bend Plan. **(SEE: Exhibit – B, Appendix E)**

B. CITY OF BEND

(1) Bend residents have long expressed support for the quality of life found within the Central Oregon area. The community repeatedly cites the environment, as well as, the abundance of recreational opportunities as major reasons that they have come to the city of Bend. Virtually every public opinion survey in recent years has reinforced this fundamental community preference; to maintain the factors that will positively effect public enjoyment of natural resources, as well as, to support local planning document measures that will encourage steps to ensure preservation of those community qualities. Consequently, numerous efforts have been made to support this citizen sentiment and various proactive efforts have been completed to provide an assurance of fulfillment of this preservation goal. The system of interconnected public use trails has typically been a key component of all of those planning strategies.

- In 1999, the ***Bend Riverway Project***, adopted by the Bend Metro Park and Recreation District (BMPRD) Board provided District policy and vision guidance for taking steps to preserve the quality and user experience of the Deschutes River. Public access and trails along the river were an integral part of this plan.

- In 2002, the city of Bend adopted the ***Waterway Overlay Zone*** (WOZ) as an amendment to the Bend Zoning Ordinance. The WOZ established regulation measures to protect natural resource areas along the river and stream watercourses of the urban area. This work acknowledged the compatibility of trails within those riparian protection areas.

- In 2002, the Bend Metro Park and Recreation District developed the ***Deschutes River Trail Action Plan*** which was a plan intended to provide the District with a strategy for guidance in implementing trail improvements along the course of the river. The Deschutes River Trail Action Plan built on the information developed during the Bend Riverway Project planning process and provided details for trail projects for use in the development and timing of river trail improvements. The Action Plan includes both land based and water trail elements.

- In spring 2004, **BMPRD** undertook a revision of its **Comprehensive Plan**. The planning project included community focus group work and a scientific survey of over 700 randomly selected District residents. Both the focus groups and survey revealed very strong support for further development of the urban trail network in Bend. For example, 69% of survey respondents were either "very supportive" or "somewhat supportive" of "completing the Deschutes River Trail". These results echo earlier survey work done by the City of Bend in November 1999 and by BMPRD in September 2000 and in April 2002

- Beginning in 2005, a citizen led, grass-roots effort was launched to develop a community vision for the year 2030 and a strategic action plan to be designed to achieve this vision over time. In 2006, a list of goal statements developed during the visioning process was adopted. Effort on the ***2030 Vision*** continues today with the development of a *Strategic Action Plan.* The overarching approach of *Bend 2030* is to provide a framework that encourages the community to participate in development of the adopted vision. Goals that support improvement of bike and pedestrian travel in the community are distinct elements of encouraging non-automobile mobility for the 2030 vision.

Using a planning process modeled after the *Deschutes River Trail Action Plan* and the *BMPRD Neighborhood Parks Plan* (an element of the District's Comprehensive Plan), city staff initiated development of the *Assessment of Bicycle and Pedestrian System Needs*, in 2003. This work engaged both staff from the city of Bend Planning Department and the Park and Recreation District. The work included an extensive field inventory to identify the existing primary and secondary (connector) trail system, and local street network. It further evaluated opportunities and constraints, and remedial measures for completing an integrated system of trails and local streets into a network of "accessways" that would provide and encourage non-automobile travel opportunities for Bend. The fundamental purpose of this review was to provide a local response to the stipulated bicycle and pedestrian elements of the Bend Transportation System Plan (TSP) that were raised by the Remand from DLCD.

Work on the plan was completed in August of 2006. This report; ***Assessment of Bicycle and Pedestrian System Needs***, is included in the implementing Ordinance, Exhibit – B, of this proposed TSP Plan amendment.

(2) Bend City Council direction concerning the TSP:

- In 2001, the Bend City Council adopted the ***Transportation Implementation Plan*** (T.I.P.). The T.I.P. was intended as a Council policy guideline for staff to follow in the development of transportation projects. Principally, it was to provide guidance during the development of the City's annual Capital Improvement Program (CIP). City Council further asked that the T.I.P. be incorporated into the Bend Area General Plan (BAGP)/Bend Transportation System Plan (TSP).

- In 2006, the Bend City Council upon considering the pattern of the local street network that had been completed by the recent history of development, expressed concern over the apparent lack of **street system "connectivity"** and the lack of a good gridded street pattern throughout the city. Council asked that staff provide further detail within the BAGP/TSP to provide additional guidance consistent with their preference for the development of the local street system pattern.

(3) Concurrent with the evaluation of the system of accessways within the community was an update of the **Bend Development Code**. Beginning in 2002, the City began a lengthy process of updating its Development Code. This evaluation and study was further supported by a Transportation and Growth Management (TGM) grant from the State of Oregon. As the Development Code is the guiding ordinance to provide direction and regulation as to how the City will develop on a site by site basis, the new Development Code was specifically designed around concepts that would support city compliance with local code requirements of the State Transportation Planning Rule (TPR). In 2006, the City adopted Ordinance No. 2016 the **Bend Development Code**.

(4) In 2005, City staff enlisted the assistance of members of the Deschutes County - Bicycle and Pedestrian Advisory Committee (BPAC) to conduct a **Peer Review** of the proposed accessway segments (i.e., the individual numbered segments illustrated on the individual neighborhood maps found in Exhibit B, Appendix A). Members of the BPAC were assigned a series of neighborhoods used in the assessment report and provided important feedback about the system of accessways in geographic areas that they were familiar. This feedback loop was important towards making final refinements to the accessway segments found in the final report.

(5) On August 9, 2006, the city of Bend sent **agency transmittals** to a list of 35 interdepartmental and other agency contacts to solicit input on the proposed TSP Amendment. On August 14, 2006, three other parties (missed by the first distribution) were also mailed copies of the proposal. Written comment was received from the following agencies: The Swalley Irrigation District and the U.S. Department of the Interior, Bureau of Reclamation (BOR).

On August 29, 2006, a meeting was held with representatives from four of the five Bend area irrigation districts (Central Oregon, North Unit, Swalley and Tumalo irrigation districts, plus the BOR which owns rights-of-way along the North Unit canal), representatives from the BMPRD and the City. [The fifth district, Arnold Irrigation District, indicated that all of their facilities are now "piped" in the Bend area and they did not see a conflict with trail use beyond any existing agreements so they chose not to attend the meeting.]

The meeting was principally called to discuss the subject of public trail use along irrigation district facilities (largely in response to the Swalley Irrigation District comments). The meeting discussed various district issues concerning public use of their properties as was contemplated by the eventual implementation of the proposed trail network. It was understood that the proposed Plan amendment was simply to put "lines on the map" but the primary issues of the irrigation districts were liability and impact to irrigation company operational needs once actual public use may be authorized.

Central Oregon Irrigation District (C.O.I.D.) and Tumalo Irrigation District both indicated that they have existing agreements with the BMPRD to permit public use of their respective ditch-rider road systems (where the districts "own" the underlying property). The districts agreed that the example agreements were a good starting point but that they likely needed some updating and some refinements to clarify their intent to future administrators of the joint use agreements. The group agreed to distribute an example agreement that could be modified to address all of their issues and concerns. Email communications or future meetings would be arranged to advance this new generation of an agreement. The goal was to develop a refined public-use agreement document that would address any outstanding issues that could be commonly used between any of the respective districts and public agencies.

(6) On August 15, 2006, **notice** was sent to all property owners along corridors that were proposed to be added to the TSP **Primary Trail System**.

Three parties made phone inquiries to the notice; Eric Coats (property owner along the Buck Drive Trail), Charley Miller (property owner along the West

Bend Trail) and Bob Schumacher (property owner along the High Desert Park Trail).

Generally speaking, all three parties weren't specifically opposed to future trails on their property but each voiced similar concerns over trail alignments in terms of the potential impact to future development of their respective vacant lands that the trail would cross. The staff response to each was that the accompanying proposed plan amendment language (TSP Section 6.3.1.3) would provide for supplemental text guidance and flexibility on the location of trails as those areas developed.

Mr. Coats seemed satisfied with acknowledgement of that type of trail alignment flexibility, Mr. Miller still had concerns about compatibility of the trail with his preliminary sight development plans and Mr. Schumacher (a developer himself) had some reservation of the impact of a proposed trail on his yet unplanned vacant property. Mr. Coats also had a concern that the line - as shown on the map – would pass through some topographically very difficult area where trail grades would be excessive (if not impossible).

A separate meeting was held with Mr. Miller and his sister, Connie Marshall, Bruce Ronning (BMPRD) and Rick Root (City) to discuss the impact of the trail. Mr. Miller indicated that his preference was to move the proposed trail to his northern property line. This change could result in potentially sharing the trail and the necessary right-of-way with the property owner to the north. Mr. Ronning and Mr. Root indicated that moving the line was not a problem in terms of the trail plan but they would need to meet with other affected property owners to determine what other impacts that may cause. Mr. Miller and Ms. Marshall followed-up the meeting interaction by providing a written request to move the trail.

Mr. Schumacher indicated that he was less confident that the trail may not create development issues and wasn't certain that he could support the trail addition onto his property. No meetings were held with Mr. Schumacher to discuss his issues further nor were other alignments for that trail discussed. A proposed change in that alignment would possibly require additional property owner notice, although the parcels impacted are fairly large and other properties may not be impacted by alternative alignment options.

(7) A regional transportation plan is currently under development. The plan is being prepared for the newly formed Bend Metropolitan Planning Organization (**MPO**). Given the Primary Trail Plan represents a regionally significant transportation facility, on August 2, 2006, the Metropolitan Planning Organization – Technical Advisory Committee (**TAC**), was given a presentation

of the proposed Bend TSP amendment. Even though the meeting was largely only an information presentation there were no technical issues or critical questions raised by the TAC that required plan modification or follow-up action.

C. STATE REVIEW OF THE TRANSPORTATION SYSTEM PLAN APPEAL

Periodic Review Task 1, the Bend Urban Area *Transportation System Plan*, was reviewed by the State of Oregon - Department of Land Conservation and Development, following adoption by the city of Bend on October 11, 2000. This review included input from five (citizen) parties that had "objected" to the City Council approved *Transportation Systems Plan*. On March 1, 2001, the Department of Land Use and Development (DLCD) issued an *Action of the Director* letter sustaining some of the objections concerning items relative to the Bicycle and Pedestrian elements of the TSP. Those elements sustained by DLCD are listed in Exhibit B, Appendix E.

II. ANALYSIS

A. LOCATION

The proposed amendments will affect the city wide planning for local streets, primary and connector trails.

B. PUBLIC HEARING NOTICE

Notices of public hearings were published in ***The Bend Bulletin***, on August 31, 2006, for the *Planning Commission* hearing and, on September 24, 2006, for the *City Council* hearing. Hearing notice was sent (by U.S. Postal mail) to those parties that had appealed the original adoption of the Bend Transportation System Plan. Notice (by U.S. Postal mail) was sent to all property owners along corridors that were proposed to be added to the TSP Primary Trail System.

PROPOSAL DESCRIPTION

Approval of this proposed amendment will modify the Bend Urban Area General Plan, Chapter Seven, AND the Transportation System Plan [TSP]. It addresses items that were stipulated in a remand order from the Oregon Department of Land Conservation and Development to address issues that were identified in an earlier adoption of the Periodic Review subtask item. This amendment will address (1) the bicycle and pedestrian circulation elements of

the Plan, (2) provide a plan for a local street grid system, and (3) provide recognition of the Bend City Council Transportation Implementation Plan (TIP) into the TSP.

APPLICABLE CRITERIA

(1) The Bend Area General Plan

Future plan Updates – General Plan Preface: *"The General Plan is a document that changes over time to reflect new information and new directions for the future. Amendments or additions to the General Plan text, exhibits, and policies go through a public hearing and review process before being adopted by the governing bodies. Changes and updates can be generated in at least six ways:"...* [The applicable items:]

- (Second bulleted item) *"Evaluation of land use topics required to be reviewed under the Oregon Land Conservation and Development Commission's periodic review of the General Plan. The state requires all local plans to be updated periodically to comply with applicable new state laws, administrative rules, or to incorporate new data available to the state."...*

- (Fourth bulleted item) *"City or county response to new issues or changes. Issues that were unforeseen during the development of the plan can arise that have an impact on a particular neighborhood or the whole urban area. The city and county officials can direct staff to amend the Plan to address these issues."...*

Findings:

1. Adoption of these proposed amendments will complete part of the DLCD remanded issues concerning Task 1 of the Periodic Review Work Program, as it relates to the Bicycle and Pedestrian elements of the plan, and will bring the City General Plan into conformance with state statutes and administrative rules as applicable to this issue. The proposed changes to the TSP will fulfill this directive. *[The other remand issues will be addressed in upcoming General Plan and Transportation System Plan amendments that will be brought to the City Council for consideration at a future date.]*

2. The Bend City Council directed staff to incorporate a reference to the Transportation Implementation Plan (TIP) within the TSP. The proposed changes to the TSP will fulfill this directive.

3. The Bend City Council directed staff to provide further guidance on the development of the frequency of the local street system within the TSP. The proposed changes to the TSP will fulfill this directive.

(2) Bend Urban Area Transportation System Plan

(Applicable TSP citations :)

TSP Section 5.0.1.2 Plan Goals -

Mobility and Balance:
• Develop a transportation system that serves all modes of travel and reduces the reliance on the automobile.
• Provide a variety of practical and convenient means to move people and goods within the urban area.

Efficiency:
• Address traffic congestion and problem areas by evaluating the broadest range of transportation solutions.

Accessibility and Equity:
• Provide people of all income levels with the widest range of travel and access options within the Bend urban area.
• Provide all transportation modes access to all parts of the community.

Environmental:
• Recognize and respect the natural features over which transportation improvements pass to minimize adverse impacts.
• Design transportation improvements to preserve air and water quality, minimize noise impacts, and encourage energy conservation.

Safety:
• Design and construct the transportation system to enhance travel safety for all modes.

TSP Section 6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS -

Objectives:

- To support and encourage increased levels of bicycling and walking as an alternative to the automobile
- To provide safe, accessible and convenient bicycling and walking facilities

Policies:

1. The City, County, State, Forest Service, Park District and public agencies shall work together to acquire, develop and maintain a series of trails along the Deschutes River, Tumalo Creek, and the canal system so that these features can be retained as a community asset. Connections between the Bend Urban Area Bicycle and Trails System should be made to the USFS trail system.

2. The City and Park District shall work together to acquire, develop and maintain the *primary* trails designated on the Bend Urban Area - Bicycle and Primary Trail System Plan Map (Exhibit A). These trails, and future trail additions, shall support the need for non-motorized travel in the community.

3. The City and Park District shall adopt standards for trail system right-of-ways and trail improvement that are based on the type of planned trail use.

4. The City shall develop safe and convenient bicycle and pedestrian circulation to major activity centers, including the downtown, schools, shopping areas and parks. East-west access to the downtown area needs particular emphasis across major obstacles, such as 3rd Street, the Bend Parkway and the railroad.

5. The City shall facilitate easy and safe bicycle and pedestrian crossings of major collector and arterial streets. Intersections shall be designed to include pedestrian refuges or islands, curb extensions and other elements where needed for pedestrian safety. Also, bike lanes shall be extended to meet intersection crosswalks.

10. Bicycle and pedestrian facilities shall be designed and constructed to minimize conflicts between transportation modes.

15. The City, school and park districts shall work together to inventory, designate and protect access corridors and connector trails. City standards will be developed for such trail corridors.

16. The City shall develop local standards for the construction of bicycle and pedestrian facilities. The state of Oregon - Bicycle and Pedestrian Plan shall serve in the interim as a guide in development of these facilities and standards.

Implementation:

1. The City shall implement the TSP trail policies in cooperation with the Bend Metro Parks and Recreation District (BMPRD) as described in the joint agency intergovernmental agreement, dated October 1997, and subsequent

amendments. The City and BMPRD shall meet to review the intergovernmental agreement and make appropriate amendments to allocate responsibility for trail construction and maintenance.

2. The Bend Urban Trails Plan, or subsequent updates, shall be implemented as a part of the Bend Urban Area TSP.

3. New trails shall be built generally following the priority of trails listed in the Bend Urban Trails Plan, or subsequent updates.

4. The City shall consider amendments to the appropriate ordinances in order to facilitate trail right-of-way acquisition and improvements, and trail connections in new development that contain a Primary Trail as shown on the Bend Urban Area Bicycle and Primary Trail System Plan Map.

5. The City shall identify funding options for right-of-way acquisition, design, construction and maintenance of priority trails (e.g., The Deschutes River and Larkspur trail systems).

6. New and existing trails shall be created and maintained following the design standards described in the Bend Urban Trails Plan, or subsequent updates.

7. The City shall meet with BMPRD and the school district to establish a process to inventory, designate and protect access corridors and connector trails which will create a network of trails for safe access to schools, parks and other activity centers.

8. The City shall update inventories of existing bike lanes and sidewalks, and identify gaps and missing system segments, and, in conjunction with the Deschutes County Pedestrian and Bicycle Advisory Committee, prioritize these for completion.

Findings:

1. The proposed plan amendment is consistent with and further fulfills the goals of the Bend TSP.

2. The proposed plan amendment is consistent with and further fulfills the objectives, policies and implementation strategies of the Bend TSP.

(3) State of Oregon – Transportation Planning Rule (OAR: 660-012)

The State Department of Land Use, Conservation and Development (DLCD) reviewed the City adopted Transportation System Plan for consistency with the Transportation Planning Rule and "remanded" certain items back to the City for refinement and/or additional clarification, and amendment.

Findings:

1. An amendment has been prepared as part of Bend's Periodic Review of the Bend Area General Plan, as required by state law. Task 1 of the Periodic Review work program, adopted by the City in October 2000, and later remanded to the City (Remand Order No. 001291), in March 2001, that required the City to perform additional analysis on Bicycle and Pedestrian elements of the plan. The review of the remanded items related to Bicycle and Pedestrian elements of the Plan will be carried out by adoption of the proposed amendments.

2. Adoption of the new Bend Development Code has further fulfilled local Code compliance with the State Transportation Planning Rule.

III. CONCLUSION

Based on the Findings of Fact, staff finds that this proposed action satisfies all applicable criteria for amendment of the Bend Area General Plan/Transportation System Plan, and resolves the pertinent elements of the DLCD Remand of the BUATSP regarding the Bicycle and Pedestrian Plan.

IV RECOMMENDATION

Staff recommends that the proposed amendments to the BAGP/TSP, Text and Maps as described in, and incorporated within, the Ordinance, attached as Exhibit A, be adopted by the Bend City Council.

NS-2026

ASSESSMENT OF BICYCLE AND PEDESTRIAN SYSTEM NEEDS

Assessment of Bicycle and Pedestrian System Needs

Adopted Report

The City of Bend
October 2006

This project was funded in part by a grant from the Oregon Department of Land Conservation and Development

J.T. ATKINS COMPANY PC

DESCHUTES GEOgraphics

EXHIBIT B
File 06-481

Assessment of Bicycle and Pedestrian System Needs

Adopted Report

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October 2006

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Acknowledgements

We would like to thank the project team for their efforts in developing this report. The team worked together to identify and document bicycle and pedestrian transportation opportunities and needs within the City of Bend.

City of Bend
Rick Root

Bend Metro Park and Recreation District
Bruce Ronning
Paul Stell

J.T. Atkins & Company PC
Tom Atkins
Katie Atkins

Deschutes GEO Graphics
Deborah Quinlan

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Contents

Purpose

In 1993, the State of Oregon Land Conservation and Development Commission (LCDC) adopted the Transportation Planning Rule (TPR). The TPR directed cities and counties in the state to adopt Transportation System Plans (TSP). In accordance with this mandate, the city of Bend adopted the *Bend Urban Area – Transportation System Plan* (TSP) in 2000. Upon reviewing the TSP, and when also considering public comments concerning the plan, the Department of Land Conservation and Development (DLCD) issued a Remand Order in 2001 directing the City to address certain deficiencies that they had identified in the plan.

Part I of this report addresses issues related to bicycle and pedestrian circulation as identified in the TSP Remand. **Part II** of the report addresses complementary changes to the *Primary Trail System Plan* that were identified during the preparation of the Part I inventory work.

Note: The TSP Remand Order items concerning other non-trail or accessway related issues will be addressed by additional work that will be completed outside of the scope and content of this report.

Planning Process

This report presents the existing and future trail and bikeway system within the greater Bend area. This report builds on the information presented in the *Bend Urban Trails Plan* (1995), the *Bend Riverway* planning process (2000) and the *Deschutes River Trail Action Plan* (2002). This plan also incorporates other non-automobile system inventory information that was developed by the city of Bend. This report is the result of a series of meetings and site assessments carried out with the members of the planning team including the city of Bend, Bend Metro Park and Recreation District (the District) staff and the supporting consultant team.

Facility Types

This report describes a wide variety of non-automobile facilities, further described:

► **Trails** – Soft or hard surface multi-use trails are normally separated by some distance from roadways. The determination of "surface type" is based either on the *volume* or *type* of trail use, or the *setting* that a trail may transect (i.e., canal, ditch-rider roads/trails are typically not paved due to a conflict with canal maintenance, and other trails may run through environmentally sensitive areas and are left as natural as possible). There are principally three types of trails:

1. **Single Track Trails** – Single-track trails are generally lower use and are typically located on the edges of the community (these are most common on the west side of Bend where they link to an extensive trail system that is on U.S. Forest Service lands). They are typically natural, earth material surface and are approximately 1-2 feet wide.

2. **Connector Trails** - The City accessway system includes trail linkages that provide convenient connections through and between neighborhoods, and other large blocks of land. Often these trails provide connections to the *Primary Trail* system. Connector Trails, sometimes also referred to as *Secondary Trails,* are typically limited in length (i.e., normally less than a few hundred feet long although some connector trails may be significantly longer) and normally have 5-6 foot wide paved surfaces, although some are natural surface.

3. **Primary (Regional) Trails** – The primary trail system serves the entirety of the community, is regional in nature and normally carries higher user volumes. In many cases, these trails parallel natural areas, including the river and the irrigation system of canals and laterals. Primary Trails typically have a width of 10-feet (a normal minimum) - *Exception*: In some areas, where a trail also serves access to certain utilities, pavement, trail width and depth may have greater dimensions. Trail surface type and/or width may vary depending on trail location relative to natural areas or to the network of irrigation company ditch-rider roadways (which often *double* as Primary Trails).

► **Sidewalks and shared roadways** – Sidewalks and lower volume local streets support the network of accessways. Due to the very nature of these lower volume local streets, bicycle traffic can comfortably *share the road* with motor vehicle traffic. Normally no special treatment to encourage travel along these facilities is required (i.e., without bike lane striping). However, in some situations, supplemental *signing* or *route markers* can provide accessway user guidance. This type of facility represents the greatest percentage of accessways within the city.

► **Bicycle Lanes** – Bicycle lanes are typically 5 to 6-foot wide, one-way lanes striped on each side of the street and are delineated from the adjacent motor vehicle traffic by an 8-inch solid white line. The lanes are also typically identified with pavement markings and signing for exclusive use by non-motorized travel.

Part I.

Part I. of the report addresses items related to the TSP Remand. Specifically, it "***conducts a general assessment of the bicycle and pedestrian facilities***" of the City. Analysis for Part I of the report:

- **Divides the City into geographic sub areas** with similar characteristics and generally assesses the status of bicycle and pedestrian facilities within each of these distinct areas. This assessment focuses on destinations, within these districts, that include; access to parks, open spaces, schools, shopping areas and employment centers, and other areas where pedestrian and bicycle usage is also likely.
- **Maps the system** of pedestrian and bicycling "accessways" throughout the community, including both existing and proposed facilities.
- **Analyzes deficiencies and identifies remedies**, including an estimation of probable costs for each remedy.
- **Recommends TSP** plan, text and exhibit **amendments** to address the remand issues.
- **Recommends trail development guidelines and standards** that supplement existing state or local standards.

Methodology

The Park District's - *Neighborhood Parks Service Areas Plan* map was used largely as a basic template for dividing the City into "districts" for this system analysis. The District's boundary does differ slightly from the city limits boundary, however this neighborhood boundary system does extend beyond the city limits and thus also provides coverage of *most* of the city's urban (reserve) growth areas (which is the planning area of the TSP). Consequently, this system was deemed as an ideal and a suitable method of dividing the city into sub areas, per the directive of the TSP Remand Order.

The District's Neighborhood Parks Service Areas divide the City into discrete geographic units that include; existing and proposed neighborhood parks and schools. These are some of the most common destinations for non-motorized travel. The basic philosophy of the neighborhood park planning system is based on the criteria of maintaining similar walkable/bikeable characteristics within each defined area. Fundamentally, the park neighborhood districts are typically bounded by the City's arterial street network (by design, the areas are intended so neighborhood park patrons won't be confronted by difficult street crossings), or are restricted by other

topographic or geographic barriers found in the community that impede safe and convenient walking or biking. For the most part, each neighborhood district maintains a relatively compact, focused area that is ideal for facilitating pedestrian and bicycling mobility.

The District currently has 35 - neighborhood park service areas that cover Bend's urbanized area. These neighborhoods are identified in this report as N-1, N-2, etc. In addition to the neighborhoods defined by this plan, it was necessary in this report to address the accessway needs within four other geographic areas that are not included within the District's system or boundary.

One of these areas runs north-south through the middle of the city. It is referred to in this report as the Commercial Corridor (CC). The Commercial Corridor has no significant residential development and consists mostly of commercial strip and industrial areas. It has no existing or planned neighborhood parks and is not included in the District's numbering system.

Three other geographic areas are also identified in this report and are referred to as, *Hunnel–North*, *Cooley–North* and *Lava Ridge–East*. These later designated areas are located along either the northern or the northeastern edge of the city.

Accessway Character Descriptions

This assessment of Bend's bicycle and pedestrian system is composed of a variety of trail types and local street facilities, is defined in this report as the system of "accessways". These accessways provide transportation and recreation mobility opportunities for non-motorized travel throughout the community in the large geographic areas that are formed between the Primary Trail and on-street bike lane systems.

This plan uses generally a geographic spacing for accessways on an interval of approximately every ***quarter mile***. Although in many areas, due to topography or other circumstances, there may be deviations from this spacing interval.

The city currently requires a much more extensive system of local streets, each with sidewalks required on <u>both</u> sides of the street. It is the intent of Part I of this report to identify specific corridors that will fulfill the desired quarter-mile grid system of interconnected local streets. Therefore, the map exhibits of this report do not illustrate the full system of ALL planned local streets. Also in some cases, typically situations that require infill of sidewalks on older streets, sidewalk needs are called out for only one side of the street in this report. It is the objective of the city to seek sidewalks on both sides of the street based on a prioritized system as funding resources are identified for this type of system retrofit.

Analysis Process

The assessment of accessways through the community was completed by dividing the City into districts including the 35 - Neighborhood Park areas, plus the 4 supplemental areas. Appendix A presents a detailed assessment that includes a map of each neighborhood, an inventory matrix, a summary table of destinations and a summary analysis of accessway opportunities, constraints, deficiencies, and remedies. (The Primary Trail and On-Street System are also illustrated on the maps, but the analysis of Part I of the report is focused just on the accessway system of intervening local neighborhood streets and trail connections. Further discussion of the Primary Trail system is in Part II of the report.)

Inventory Matrix

The inventory matrix elements presented in Appendix A include the following:

Segment: An individual segment number identifies *Accessway* segments of each neighborhood. *[Note: The numbering system repeats for accessways found in adjacent neighborhoods and typically bears no relation to like-numbered accessways in those adjacent neighborhoods.]* The lower-case letters further delineate subsections of particular accessway corridors. These subsections typically delineate where accessways alternate between existing and proposed routes and vice versa or there is a change in the corridor type. The individual neighborhood maps show existing facilities as solid lines and future accessways as dashed lines.

Proposed: Proposed accessways are identified in the *proposed* column of the matrix with an "X" and with a dashed line on the maps.

Length: The *length* of an accessway segment is delineated in feet, to the nearest 50-foot increment. *[Note: Accessway lengths were determined from scaling of maps. Actual accessway segment lengths may vary and should be field-verified if greater accuracy is needed.]*

Type: Accessway segment *types* are indicated as *roadway* or *trail* with an "X" in the *type* column of the matrix.

R.O.W. (Existing): *Right-of-way* (R.O.W.) segments of accessways are delineated as public (typically *existing* road R.O.W.s), *private* (typically private road R.O.W.s or across privately owned properties) or *easements* (an existing easement that permits public access across privately owned property).

Improvement Need: The following two columns of the matrix anticipate whether the *improvement need* will be born by *public* or *private* funding

resources. *Proposed* accessways are delineated within an "X". (These dollar figures are rough cost opinions to improve these accessway segments [in 2006 dollars] and are *not* intended to indicate a commitment of *any* public *or* private funding.)

Improvement Cost: The first column, *segment type,* is a numerical identification that determines the following column's *unit cost – per linear foot. [Note: Appendix A, Table A-3, provides additional detail of the associated unit cost as well as a breakdown by the construction elements that make up this unit cost.]* The next two columns apply the *unit cost per linear foot (LF)* to the length of the accessway segment. The resultant estimated cost is shown in the respective column for *public cost* or *private cost.*

Location: A general geographic description of the *location* of each respective accessway segment is noted in this column this supplements some of the segment descriptions.

Other Comments: *Other comments* further describe the characteristics or location of the accessway segment is noted in this column.

[Note: Some short accessway segments within neighborhood areas, or other connector trails WITHIN parks, may be identified on the maps without an accompanying matrix detail. Costs have NOT been included for supplemental signing, lighting, arterial street crossing features or any other special treatments]

Bridges

Accessway costs include several smaller, bridge structures that typically cross the City's irrigation district waterways at various locations. These locations are illustrated on the individual neighborhood accessway plans. The Accessway bridge system contemplated is also summarized in Part II of this report, on Table II.

Right of Way

Right-of-way (ROW) varies on the system of Accessway trails. Generally, most trails follow either public use easements that have been granted to permit recreational use of the property. Typical ROW or easement width is normally ten-feet wide along accessway trails, although in some areas, wider ROWs have been secured. A significant portion of the Accessway, connector trail system falls within property that has either been dedicated for public use or is owned outright (fee title) by either the City or the Park District.

It should be noted, that many of the ***proposed*** connector trails may still follow corridors that are under private ownership and dedications or easements will need to be granted to the public for use as to permit

recreational use. It is anticipated that as the City continues to develop, these ROWs or easements will be acquired over time – largely through the development exaction process.

In addition, there are some trails on City property (such as on Overturf Butte) where public use is permitted today but the primary purpose of the property may be for the expansion or maintenance of public utilities. These trails may need to be relocated in the future if they conflict with City utilities maintenance or expansion plans, and/or there other safety or security issues may arise. As in the Overturf Butte example, Memorandums of Understanding (MOUs) should be developed between the City and Park District to stipulate these conditional requirements and/or to define maintenance roles of the respective agencies.

Part I Summary

This analysis defines a citywide system of *neighborhood acccessways* that total approximately 222 miles. These accessways augment the currently defined, planned Primary Trail and On-Street Bike Lane System depicted in the TSP. A significant percentage of the accessways follow the existing local street system. Table 1 provides a mileage summary of Accessway types envisioned in this system.

The construction opinion of the ***public cost*** needs of accessway improvements total approximately $4.4 million. Public costs are in 2006 dollars and *exclude* right-of-way acquisition expense. The ***private cost*** needs total approximately $21.8 million. Private development costs also *exclude* right-of-way expense and are principally just for the construction of sidewalks; the construction cost of a parallel street segment is not included in the cost figures. Appendix A, Table A-2, provides cost opinion summaries for each neighborhood.

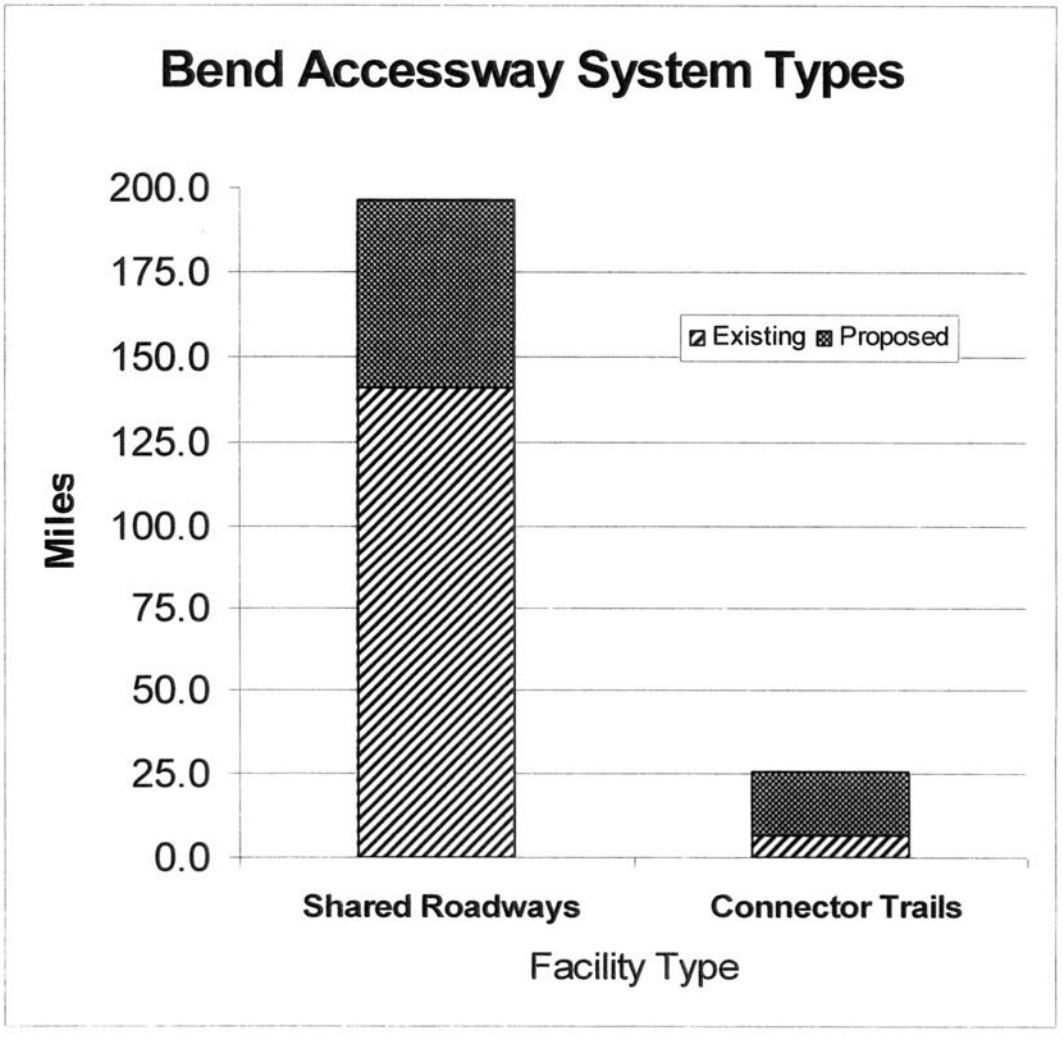
Appendix A, Table A-4, provides a full descriptive summary of all accessway types and their respective construction opinion of costs. Figure 1 provides a summary of Bend Accessway System Totals.

Table I.
Summary of Accessway Types
(miles)

Type	*Existing*	*Proposed*	*Total*
Shared Roadways	141	55	196
Connector Trails	6	19	26
Total Miles =	***148***	***74***	***222***

Note: Totals include rounding

Figure 1


Bend Accessway System Types
200.0
175.0
150.0
125.0
100.0
75.0
50.0
25.0
0.0
Miles
Existing
Proposed
Shared Roadways
Connector Trails
Facility Type

Part II

Background

The Primary Trail System is the network of principal community trails identified in the current TSP[1]. These trails, by definition, are the more significant trails that provide service to the entire community, normally covering several miles through and across the city.

The system of "primary" trails provides intra-county community service for the residents of Bend. It should be noted, that a true "regional" system provides service to a much larger geographic area than just the city of Bend. Discussions and planning effort is underway to establish a vision and plan for this larger regional network. Ultimately, a system that will connect Bend with other communities, such as; the neighboring communities of Sisters, Redmond, Prineville and Sunriver is an objective of that work. This is planning work that is outside of the scope of this report.

1 (***Excerpt from the TSP***:)

"Trails provide important transportation connections and shortcuts to destination points that make travel by foot or bicycle safe, pleasant and convenient. Recreational activity is also a common use of the trail system, with scores of residents and tourists using these areas for walking, jogging, bicycling and other activities.

Trails also provide citizens and visitors with links to the natural environment. One special quality of a trail is the opportunity they provide to escape the bustle of the city - while remaining within the city. This is particularly evident along the Deschutes River trail system. Public opinion supports this sentiment, as people cite the ability to depart from traffic congestion, noise and exhaust as a prime factor in their enjoyment of trails.

The first trail plan was established with the adoption of the Bend Area General Plan in 1981. This has been the policy tool that has provided some protection of trail corridors and has promoted the construction of the current limited system. In 1995, consultants for the City studied Bend's off road trail network to evaluate the original trail plan. As a result, several additions were adopted by the City and County and incorporated into the General Plan, in 1996. ... The City and the Bend Metro Park and Recreation District are working together in the planning and development of a trail system to meet the recreational and transportation needs of the community."

Primary Trail System Inventory

The Primary trail system is also depicted on the Accessway System Maps found in Appendix A. During the process of inventorying the system of Bend Accessways, alignment corrections (from those shown on the current TSP Plan Map Exhibit - B) and other modifications that are recommended to this system. Figure 2 depicts the Primary Trails that are recommended for addition to the TSP. These include both trails that have been built (to reflect their actual built location) and future trails to be added to the plan. The system of Primary trails is summarized in the Matrix found in Appendix B. The matrix follows the same system of annotation described in Part I of this report (found beginning on page 5).

Costs

System improvement cost opinions have been provided to bring each Primary Trail segment up to the ***plan standard***. It should be noted, that some trails may be shown as *existing* but may not yet be completed to the plan standard. A typical example of this is a ditch-rider road that may have been authorized (by an easement and/or agreement) for trail use but the plan calls for a higher standard for long-term trail use. Hence, cost opinions may have been provided for additional improvements on *existing* trails in the report exhibits. *[Note: Some trails may be built to a standard that "exceeds" that called-out in the TSP. This shall be deemed satisfactory provided City and District officials support those trail standard deviations/modifications.]*

Cost opinions for the Primary Trail system include ***four*** new bridges over the natural waterway system that supplement the eight existing bridges *[Note: The Accessway System also includes another **eight** new proposed bridges.]*

Costs have NOT been included for supplemental signing, lighting, arterial street crossing features, special traffic or railroad crossing signals, nor has any other special facility treatment been included in these cost opinions. Future connector trails - *within parks* - have also NOT been included in these cost opinions.

Street Crossings

Where trails intersect streets, it is important to address this situation in terms of enhancement of user safety. The Bend Urban Trails Plan (1995), a Resource Document of the Bend TSP, provides recommendations as how to treat both at-grade crossings of local and arterial type streets (Chapter 4 of that document), as well as design standards for under- or over-crossing structures.

At-grade crossing of a public street should undergo thorough detailed engineering analysis to determine the scope and cost for each installation.

(No cost opinions have been provided in this report for any supplemental improvements for at-grade trail crossings). Typical improvements might include supplemental lighting, signing and striping, landscaping, construction of curb extensions and/or medians, or the like, with each location requiring varying project elements that will address issues specific to each crossing. Local City approvals may be necessary in order to authorize any recommended improvements within the public right-of-way.

In some of the busier arterial street intersection locations, where the trail crossing is a relatively short distance to a controlled intersection and due to grade difficulties that prevent grade separation, it may be more practical to encourage crossing at the nearest controlled intersection. Examples of this situation are ***the Old Pilot Butte Canal at Empire Avenue*** and ***the Central Oregon Irrigation District (COID) Canal at Third Street***. Costs for these types of improvements have NOT been included in the cost opinion summaries.

Grade separation is an excellent design solution for addressing automobile and trail user conflicts at roadway crossings. Unfortunately, this solution is not always practical due to slight grade differences (between the two facilities) and the cost to make these improvements. When constructing new streets, it provides an excellent opportunity to coordinate facility needs so that a grade-separation of road and trail can be achieved. An example of this is the reconstruction of the **Newport Avenue Bridge** (during the summer of 2006) that will facilitate a **trail undercrossing**. However, due to the high cost to provide this type of facility, funding may still be an obstacle. One possible location where grade separation could be achieved (presuming necessary funding can be secured for this type of trail-roadway feature) is the future connection of ***27th Street to Empire Avenue and the North Unit Canal*** crossing. Costs for this type of structure have NOT been included in the cost opinion summaries.

Two locations where the grade difference between the trail and the road are favorable for grade-separation are ***the Deschutes River Trail at Colorado Avenue*** and ***the Deschutes River Trail at Portland Avenue***. However, the clearance under the road bridges is insufficient to fulfill the desired vertical headroom standards. However, experience from other communities have shown promise in "coffer-dam" designs where the trail grade is actually lower than the normal river flow level. This design shows promise in terms of achieving grade separation although more research will be necessary to determine the actual construction costs of each crossing, and to determine any maintenance implications and/or safety requirements of the installations.

Other trail-street crossings, either due to the topography of the site or other unique circumstances of the roadway or trail, may make grade separation very difficult, if not impossible. Examples of this situation are the crossing

of ***the Deschutes River Trail at Archie Briggs Road*** and **the COID Canal Trail at Brookswood Blvd**. More analysis will be required to determine the best combination of improvements necessary to enhance user safety at these locations. Costs for these types of improvements have NOT been included in the cost opinion summaries.

There are four existing road-trail grade separations; one at Highway 20-Larkspur Trail, one at Highway 97 (the Parkway) - COID Canal (South) and two at Columbia Street – Deschutes River Trail (both sides of the river).

Bridges

There are two general types of trail bridges referenced in this report; one, bridge crossings of natural waterways (i.e., the Deschutes River and Tumalo Creek) and two, bridges crossing over the man-made, irrigation waterway system (i.e., the system of canals). The first type of trail bridges are included in the Primary Trail system inventory [Appendix B] the second type of bridges are included in the Accessway system inventory [Appendix A].

Table II provides an inventory of *both types* of existing and proposed trail related bridges. Figure 3 provides a map of the proposed Bicycle and Pedestrian System Bridges and Grade Separations.

Table II
Bicycle and Pedestrian System Bridges

NATURAL WATERWAYS (Primary Trails)	***Existing***	***Proposed***
South UGB Boundary Crossing		6' - 8'
South Canyon Crossing	6'	
Old Mill #1 Crossing	15'	
Old Mill #2 Crossing	28'	
Old Mill #3 Crossing		12'
Colorado Bike-Ped Bridge	24'	
Gilchrist Crossing	8'	
Mirror Pond Crossing	8'	
First Street Rapids Crossing		12'
Sawyer Park Crossing	6'	
Buck Drive (Tumalo Creek) Crossing		6'- 8'
Shevlin Park (Tumalo Creek) Crossing	3'	
IRRIGATION WATERWAYS (Accessway Trails)	***Existing***	***Proposed***
N-3, #8e		6' – 8'
N-5, #7a		6' – 8'
N-5, #7b		6' – 8'
N-5, #9		6' – 8'
N-5, #10		6' - 8'
N-29, #11		6' – 8'
N-34, #14		6' – 8'
N-CC, #10		6' – 8'

Right-of-Way

Right-of-way (ROW) varies on the system of Primary trails. As many of the trails follow the irrigation system or the underlying property is owned by the respective irrigation companies, many trails follow either public use easements or joint-use agreements that have been granted to permit recreational use of the ROW. A typical minimum ROW or easement width along a Primary Trail is twenty-feet although widths often vary. A significant portion of the Primary trail system falls within property that has either been dedicated for public use or is owned outright (fee title) by either the City or the Park District.

It should be noted, that many of the ***proposed*** trails may still follow corridors that are under private ownership (or existing easements may only be granted to the City or to irrigation districts for utility service or maintenance access only). As such, ROW or public use easements will need to be acquired to permit public recreational use. It is anticipated that as the City continues to develop, these ROWs or joint-use agreements will be acquired over time – largely through the development exaction process.

Surface Type

Three Trail *Surface Types* are contemplated for the Primary Trail System: (1) Native, (2) Alternative and (3) Hard.

(1) ***Native Surface:*** Generally, trails of this nature are designated for either sensitive natural areas and/or trail corridors with relatively low projected trail use.

(a) This type of facility has typically a very low frequency trail use, or
(b) There are prevailing circumstances, such as; the proximity to sensitive wetlands or there are existing wildlife protection factors that limit the desired trail improvement type, or
(c) There are other topographic features, such as; significant steep side slopes that make normal trail construction impractical or disproportionate to the amount of trail benefit, etc.

(2) ***Alternative Surface:*** Generally, trails of this nature are designated for conditions similar to the natural surface areas but are likely to generate more moderate trail use or they follow the irrigation, ditch-rider road corridors.

(a) Surface treatment may vary dependent upon the unique, locational conditions, such as; potential erosion impacts, likelihood of water and silt run-off, or ice build-up, routine maintenance conflicts (i.e., the irrigation system), etc, or
(b) The trail surface type is not paved but is an alternative surface (e.g., wood chips and/or crushed rock) that will accommodate

both anticipated trail use and accommodate the other requirements that may be unique to that particular trail corridor.

(3) ***Hard Surface*** Generally, this surface treatment is used where trail use is frequent and/or multiple user types are likely.

(a) Typical users include bicyclists, skaters, joggers, pedestrians and others where anticipated volumes are fairly constant or high, or

(b) Other factors present warrant a paved surface. Such as needed for maintenance vehicle access or there are special user needs that warrant a hard, smooth rolling surface.

Trail Surface Types are delineated on TSP Map Exhibit C.

Rails WITH Trails

Redevelopment of the Burlington Northern-Santa Fe Railroad corridor in the Bend area could provide a substantial enhancement of the Primary Trail system. The *Bicycle and Pedestrian System Plan* map illustrates the alignment of this "Rails-with-Trails" concept. It should be acknowledged that, due to site-specific railroad operational requirements, alternative parallel accessway/roadway corridors may be more suitable for avoiding problematic sections of this rail-trail corridor. In addition, grade-separated rail-roadway crossings may be difficult to retrofit or may be operationally unsuitable for joint trail and rail operation and parallel alternative routes should be considered. Typically, these alternative routes, if used, should not deviate physically too far from the intended corridor alignment (i.e., follow the nearest parallel alternative corridor). Further discussion with the railroad and field investigation should make this assessment and determination.

This special type of a regional trail is identified on the map with a special graphic but is *not* included in the total of accessway or primary system miles or estimation of probable costs. The intent of depicting this corridor opportunity on the plan maps is to acknowledge the intent to study the feasibility of this corridor being added to the Primary Trail system. Considerable work remains that will require extensive discussions with the railroad company in order to formally permit use of these right-of-way corridors for use as formal primary trails, then to subsequently determine the appropriate location and surface treatment, and also the scope and type of other elements (e.g., fencing, etc.) of the trail along the active rail road line.

Part II Summary

There are approximately 64 miles of existing and planned primary trails within the Bend urban area. The construction opinion of the ***public cost*** needs of Primary Trails (not including Rails-with-Trails) improvements total

approximately $4.8 million. Public costs are in 2006 dollars and exclude right-of-way acquistion expense. The construction opinion of the ***private cost*** needs total approximately $4.0 million. Private development costs also *exclude* right-of-way expense.

Appendix B, provides a full descriptive summary of all Primary Trails and their respective construction opinion of costs.

Figure 2

Primary Trail System – Proposed Additions

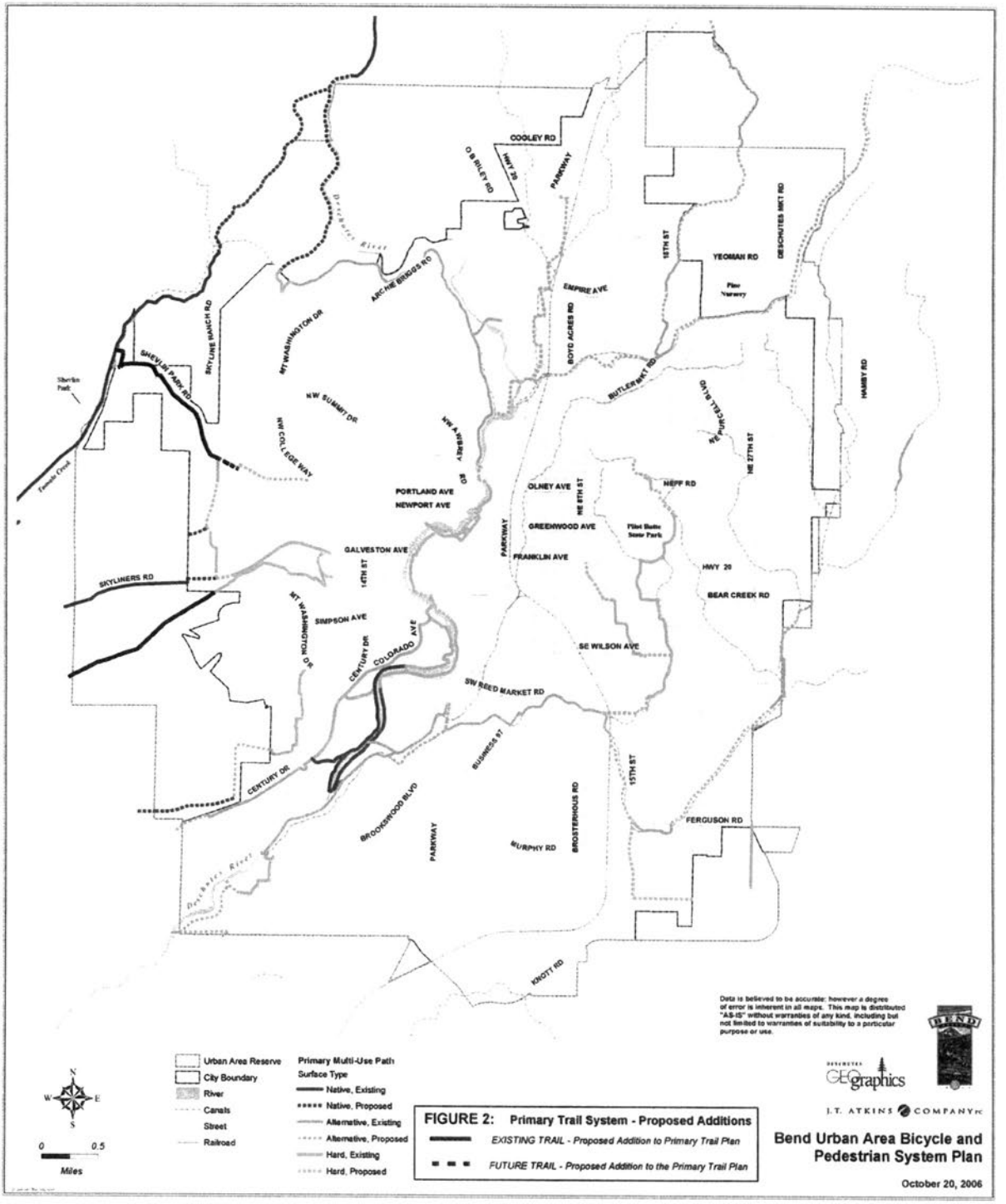
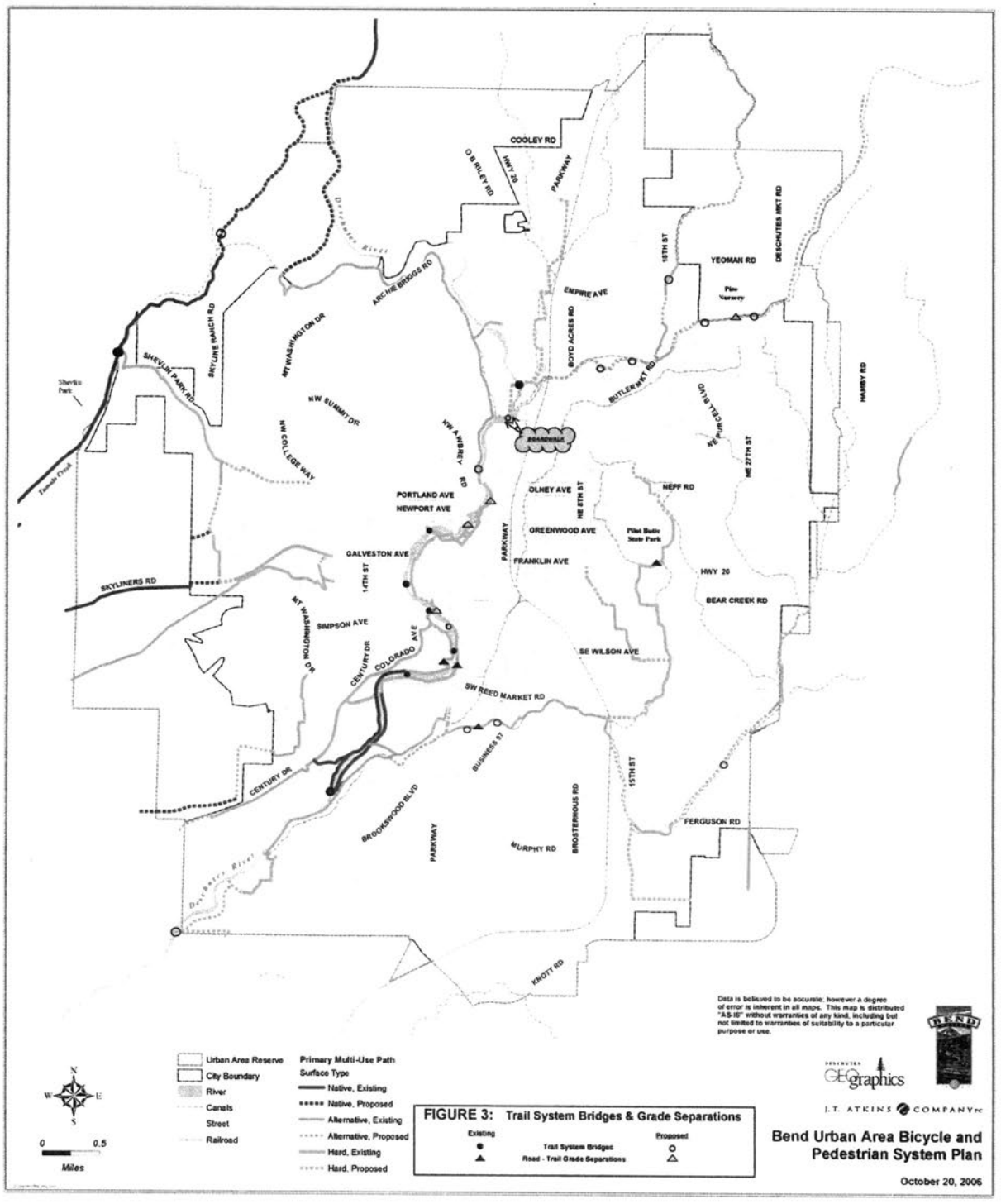


Figure 3

Trail System Bridges and Grade Separations



Bend Urban Area – Transportation System Plan

Recommended amendments to the *Bend Urban Area – Transportation System Plan* that will address TSP Remand issues are included in Appendix C.

Recommended trail development standard guidelines to be included within the City of Bend Standards and Specifications document are included in Appendix D.

A summary of the DLCD Remand items related to the bicycle and pedestrian plan elements of the Bend Transportation System Plan are included in Appendix E.

Appendix A

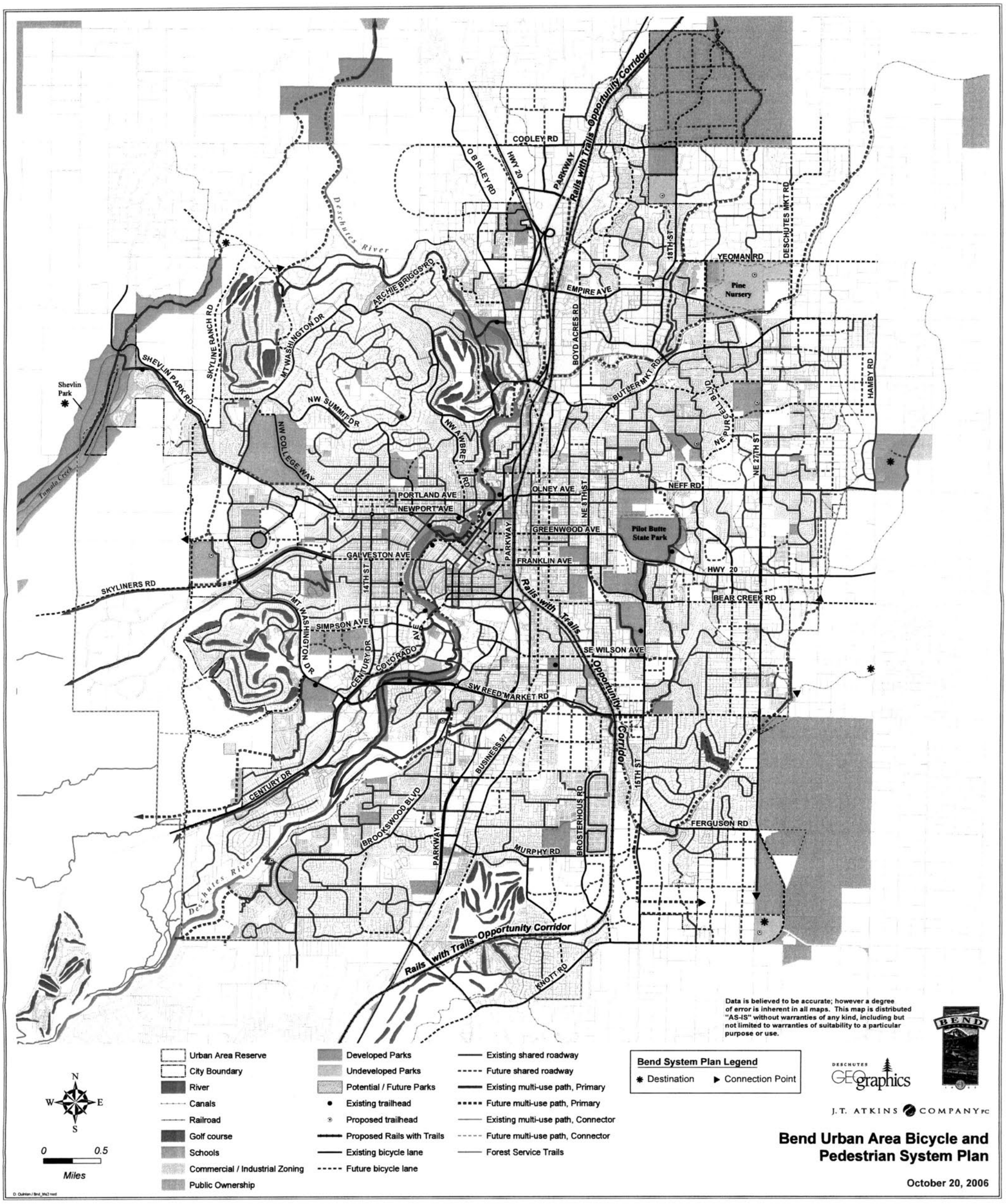
City Wide Bicycle & Pedestrian Plan Maps

Neighborhood Maps

Neighborhood Accessway Matrices

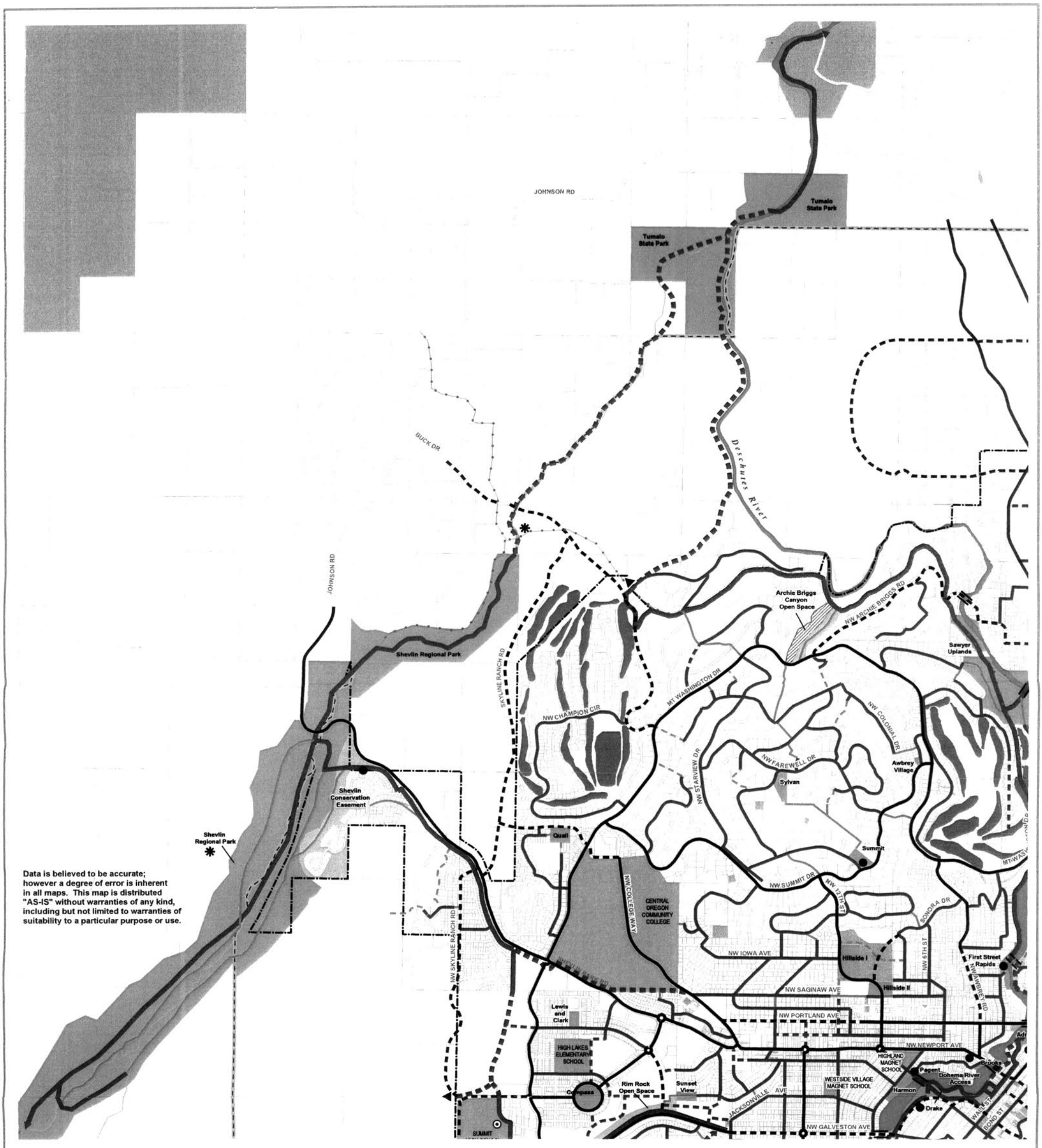
Neighborhood Destinations

Neighborhood Analysis



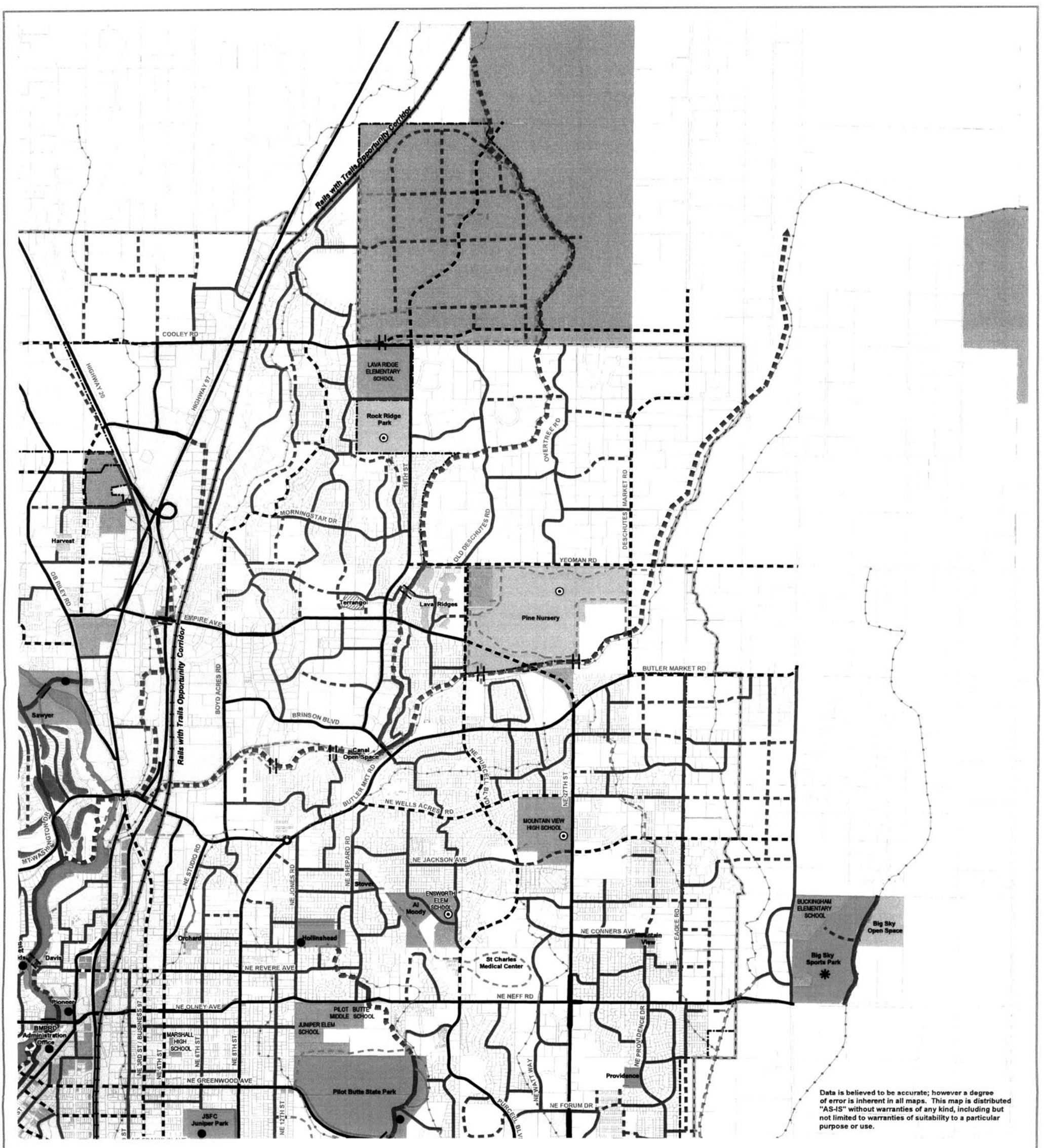
Bend Urban Area Bicycle and Pedestrian System Plan

October 20, 2006



Bend Urban Area Bicycle and Pedestrian System Plan Northwest Quadrant

October 20, 2006



Data is believed to be accurate; however a degree of error is inherent in all maps. This map is distributed "AS-IS" without warranties of any kind, including but not limited to warranties of suitability to a particular purpose or use.

NE Quadrant Legend

- ✱ Destination
- Urban Area Reserve
- City Boundary
- River
- Canals
- Railroad
- Golf course
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- • Existing trailhead
- ⊙ Proposed trailhead
- = Existing Bridge
- == Proposed Bridge
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails

N W E S

0 0.25 0.5

Miles

D: Quinton / NE_Quad.mxd / 03/01/06

DESCHUTES GEOgraphics

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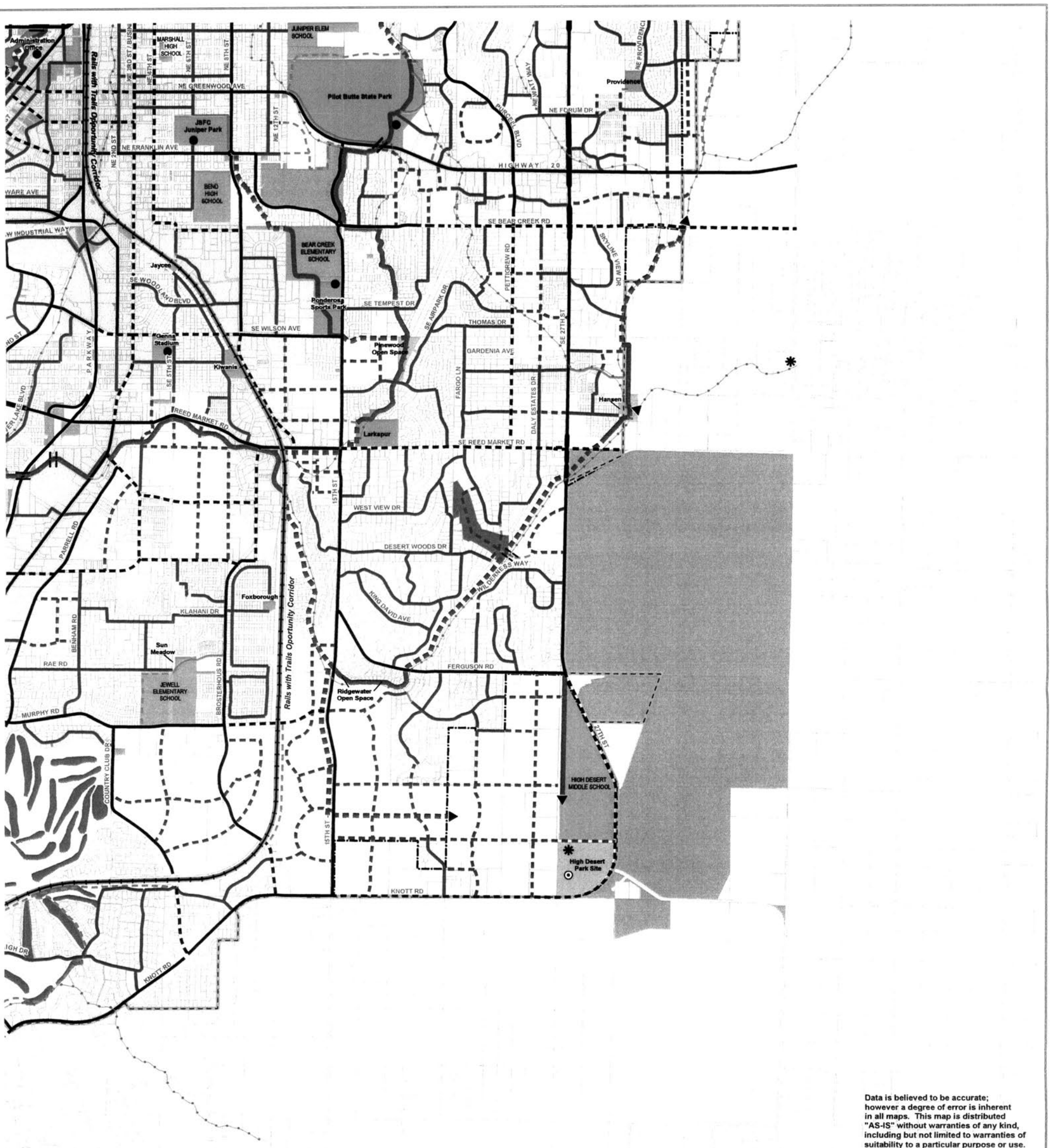
Bend Urban Area Bicycle and Pedestrian System Plan Northeast Quadrant

October 20, 2006



SE Quadrant Legend

✱ Destination ▶ Connection Point

- Urban Area Reserve
- City Boundary
- River
- Canals
- Railroad
- Golf course
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Existing Bridge
- Proposed Bridge
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails

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Bend Urban Area Bicycle and Pedestrian System Plan Southeast Quadrant

October 20, 2006

D: Quinlan / SE_Quad.mxd / 03/01/06

Data is believed to be accurate; however a degree of error is inherent in all maps. This map is distributed "AS-IS" without warranties of any kind, including but not limited to warranties of suitability to a particular purpose or use.

SW Quadrant Legend

- ▶ Connection Point
- Urban Area Reserve
- City Boundary
- River
- Canals
- Railroad
- Golf course
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- = Existing Bridge
- == Proposed Bridge
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails

N W E S

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Miles

D: Quinton / SW_Quad.mxd / 03/01/06

DESCHUTES GEOgraphics

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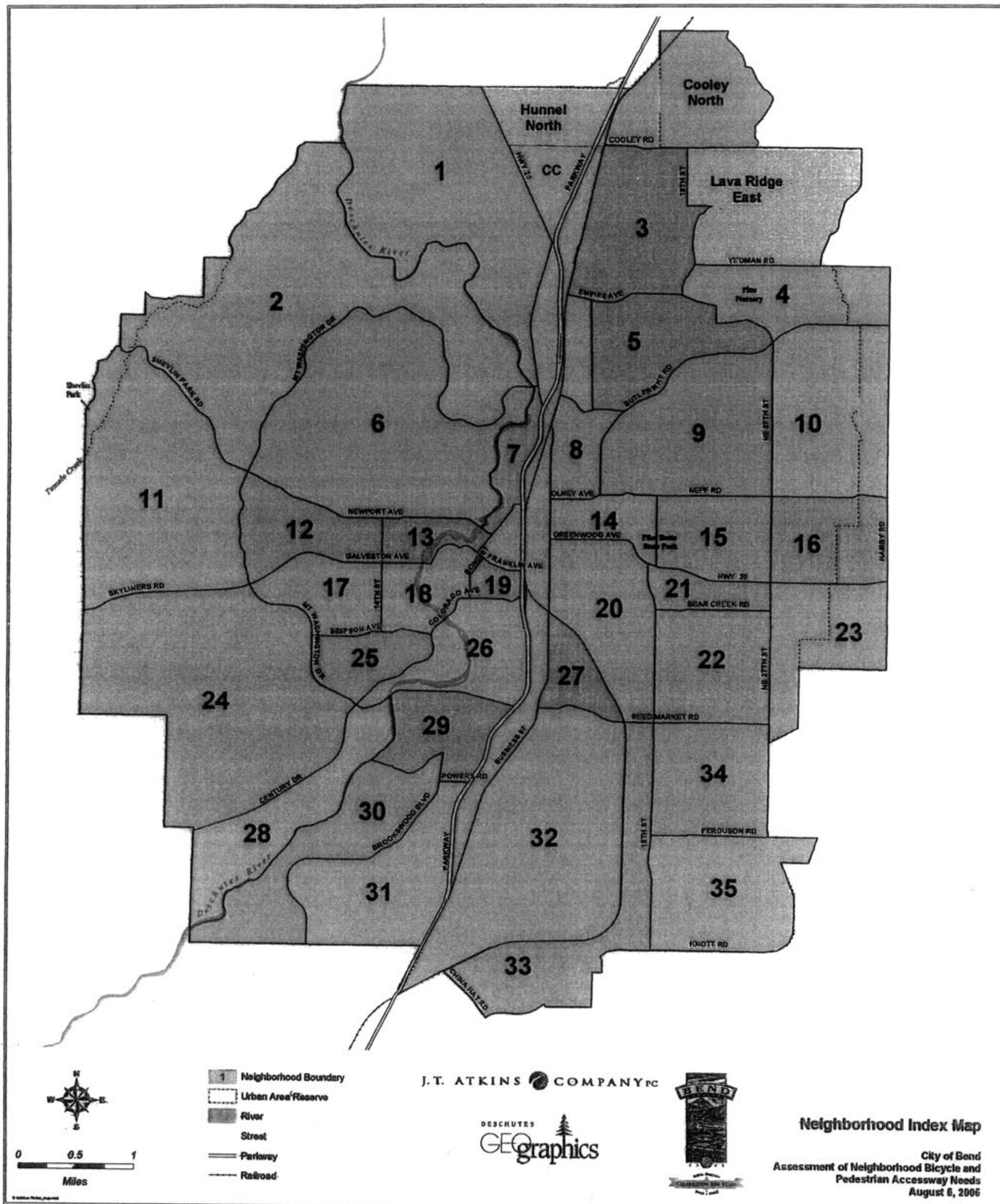
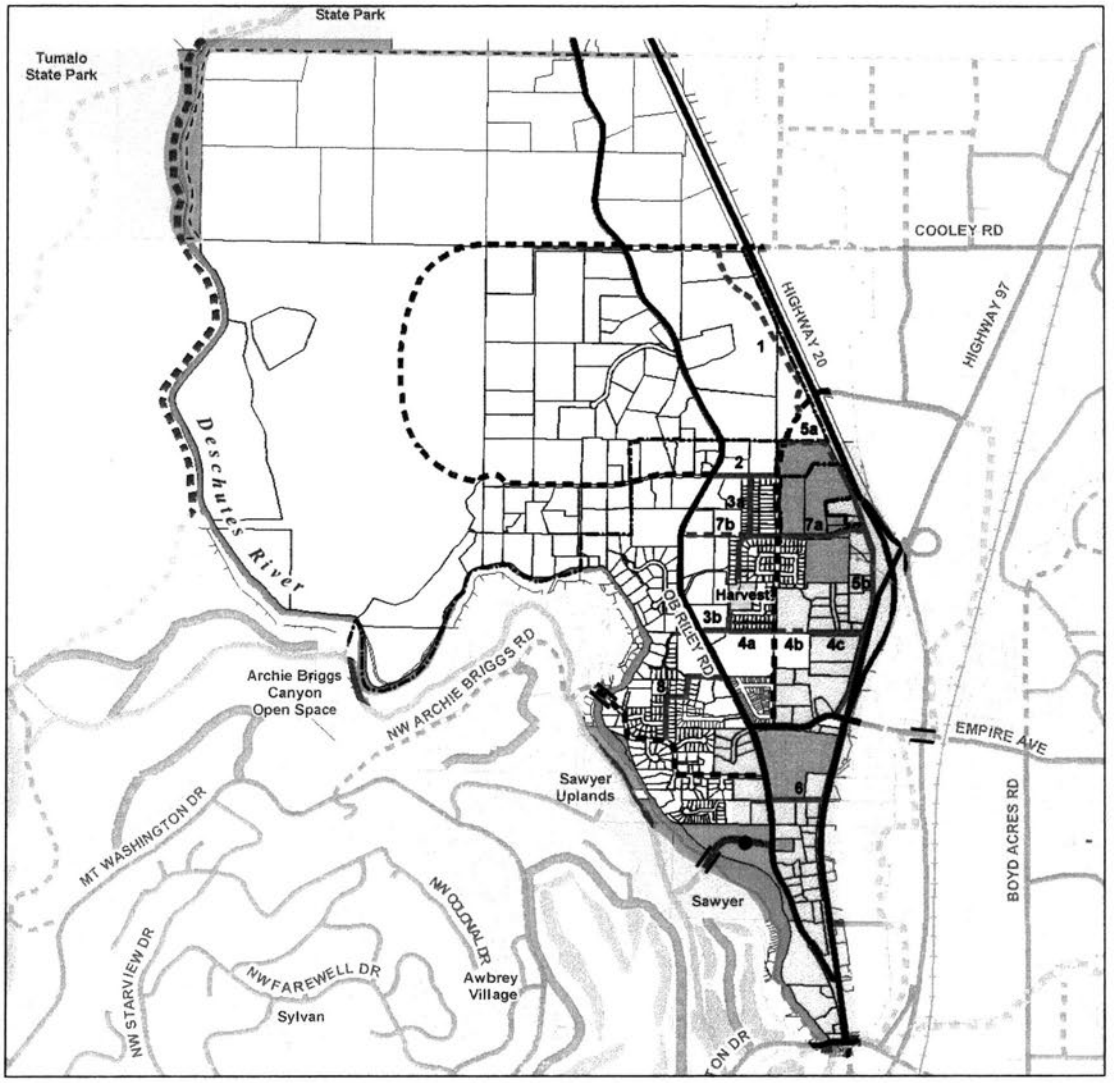
Bend Urban Area Bicycle and Pedestrian System Plan Southwest Quadrant

October 20, 2006



Neighborhood Index Map

City of Bend
Assessment of Neighborhood Bicycle and
Pedestrian Accessway Needs
August 8, 2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 1

October 20, 2006

Neighborhood: **N1**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		X	2650		X								X		3	$83		$220,735	(future unnamed street)	Hwy 20 frontage road
2		X	850		X								X		2	$42		$35,454	Hardy Road	Needs S/W on N. side
3	a		1450		X			X							0	$0			Lavacrest St.	
3	b		250		X			X							0	$0			Lavacrest St.	
4	a	X	1000		X			X					X		3	$83		$83,296	Halfway Road	Needs Urban Std. Street
4	b	X	500		X								X		3	$83		$41,648	Halfway Road	
4	c		700		X			X							0	$0			Halfway Road	
5	a	X	750		X							X			3	$83	$62,472		Jamieson	
5	b		3450		X			X							0	$0			Jamieson	
6		X	700		X			X				X			3	$83	$58,307		Mervin Samples Rd	Needs S/W on both sides
7	a		1800		X			X							0	$0			Poe Sholes	
7	b	X	800		X								X		3	$83		$66,637	Poe Sholes	
8			1600		X			X							0	$0			Bronze/Hudson/Riverstone	

Total Length of Neighborhood System =	**16,500**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$120,780**	
Neighborhood Total Private Cost Estimate =	**$447,770**	
Neighborhood Total All =	**$568,550**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Sawyer Park
Undeveloped park facility	Harvest Park
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	State park land abuts this area to the north west

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Highway 20 and 3rd Street define the eastern boundary of this neighborhood area. The Deschutes River defines the south and west boundaries of the neighborhood unit. The northern boundary is the UGB. OB Riley Road traverses the area in a north and south alignment. This neighborhood is composed of undeveloped lands to the north and west larger lot residential areas. Commercial and light industrial land uses parallel 3rd Street within this neighborhood unit. A portion of Sawyer Park occurs in this area.

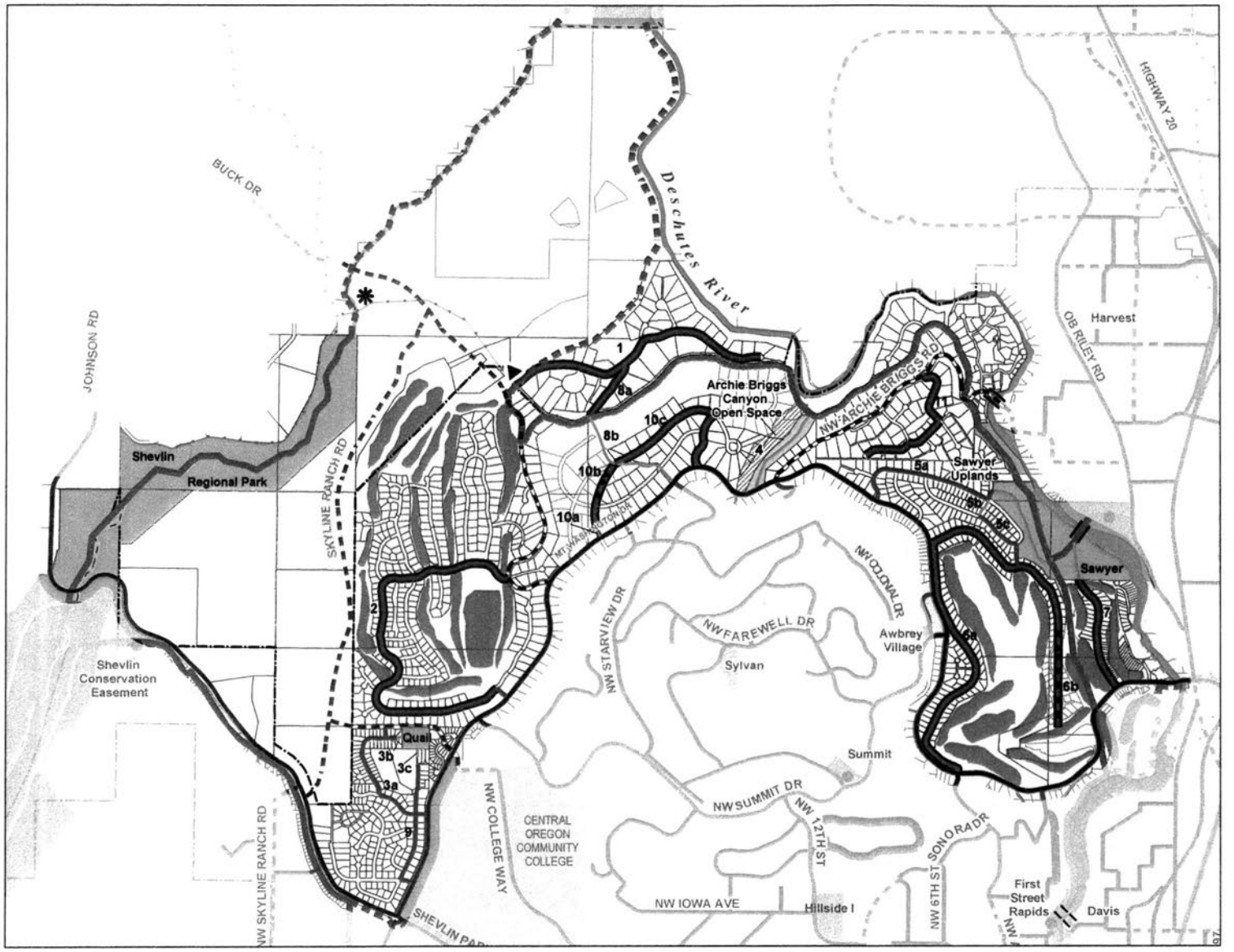
Opportunities:
Flat terrain, area is adjacent to Mixed-Employment zone

Constraints:
Area largely undeveloped; lacks a system of interconnected streets.

Deficiencies:
Area currently lacks a developed road and trail system

Remedies:
Development of a road & accessway system will optimize non auto travel as urbanization occurs in the area.

N1
8/15/2006



Neighborhood 2 Legend

- Connection Point
- Destination

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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Miles

D. Quinlan / neigh_02.mxd

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J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 2

October 20, 2006

Neighborhood: **N2**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			5000		X				X						0	$0			Putnam Road	
2			7000		X				X						0	$0			Champion Circle	
3	a		2500		X			X							0	$0			Nordic/Rainbow Ridge/Jeffrey	
3	b	X	100			X		X				X			10	$55	$5,542		Rainbow Ridge	Access to Quail Park
4			1600			X		X							0	$0			Trail to River, butte N. side	Existing, 2'-6', earth
5	a	X	2600		X				X				X		3	$83		$216,570	Yosemete/Mesa Verde	Sawyer Park access
5	b		300			X				X			X		0	$0		$0		Trail from street to street
5	c	X	600			X				X		X	X		3	$83	$24,989	$24,989	Bryce Canyon/17th Tee Pl	
6	a		10200		X				X						0	$0			Fairway Hts. Drive	
6	b	X	1000		X								X		3	$83		$83,296	(future street)	Fairway Hts. Drive (cont)
7			2000		X				X						0	$0			Clubhouse Drive	
8	a		950		X				X						0	$0			Brogan Pl	
8	b	X	1600			X							X		8	$16		$26,044		Trail between street & trail
9			2200		X			X							0	$0			Marken	
10	a	X	200			X							X		8	$16		$3,256		Trail between streets
10	b	X	2000		X								X		3	$83		$166,593	Greenleaf	
10	c		2650		X				X						0	$0			Greenleaf	
11			2550		X				X						0	$0			Summerfield/Chelsea/Falcon Ridge	

Total Length of Neighborhood System =	**45,050 L.F.**
Neighborhood Total Public Cost Estimate =	**$30,531**
Neighborhood Total Private Cost Estimate =	**$520,748**
Neighborhood Total All =	**$551,279**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	East: Sawyer and Sawyer Uplands parks
	West: Shevlin Park
Undeveloped park facility	Quail Park (under development)
Potential park facility	None
Other Open Space:	
Golf course	Awbrey Glen and River's Edge
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River and the River Trail alignment
Schools:	Shevlin School site (undeveloped)
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Mt. Washington Drive and Shevlin Park Road define the southern edge of this area. The UGB and the Deschutes River define the north and east boundaries of this area. Awbrey Glenn and River's Edge golf course developments as well as several other larger lot residential developments compose the land uses within this neighborhood area. Sawyer and Shevlin Parks are major parks that occur within this area.

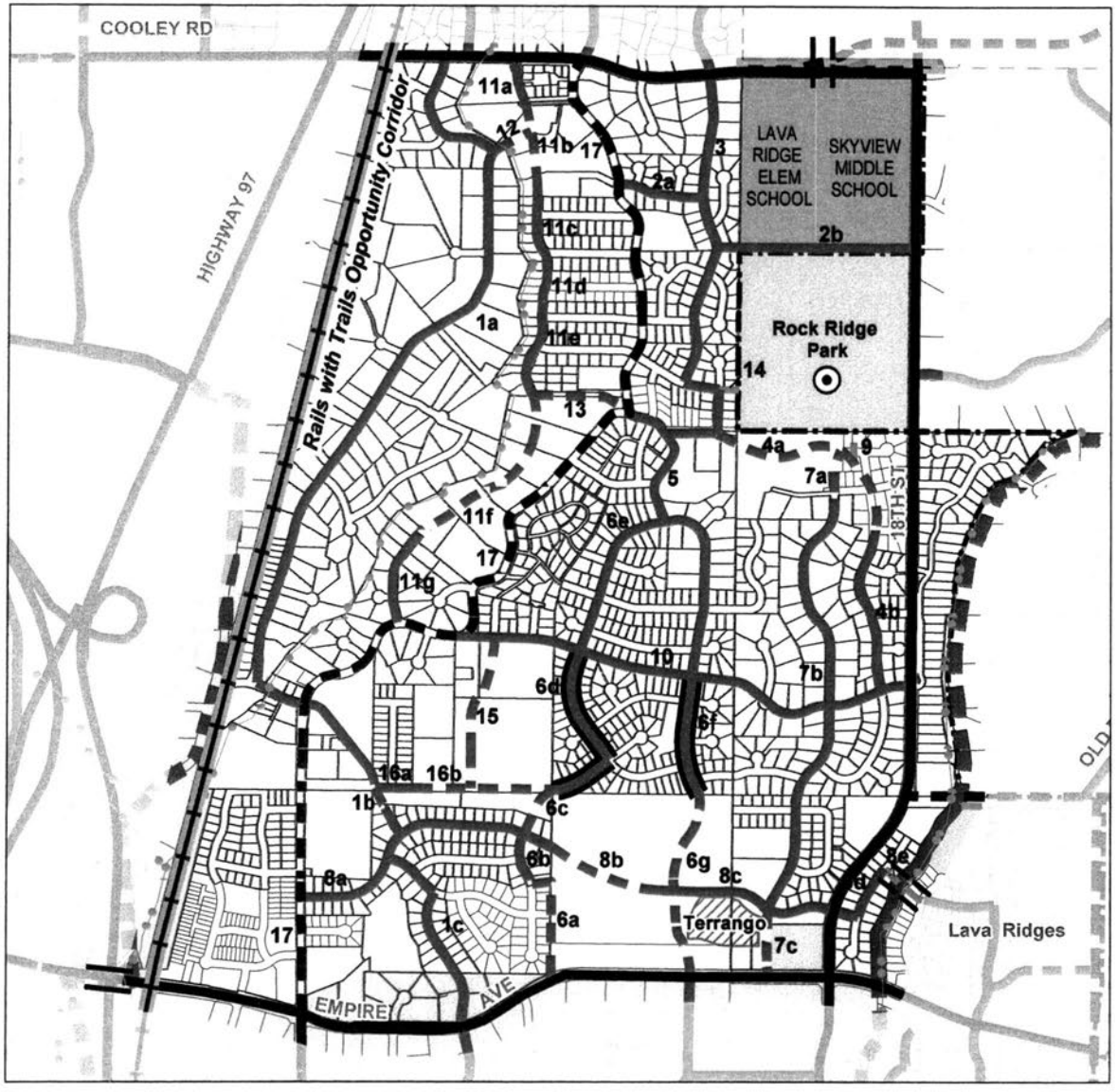
Opportunities:
Good connections to the River Trail system

Constraints:
Most of the area is already developed or committed. Includes many dead-end streets within private PUD developments.

Deficiencies:
Lack of public access due to private street system.

Remedies:
Some trail extension opportunities and subdivision infill.

N2
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 3

October 20, 2006

Neighborhood: **N3**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		7900		X			X							0	0			Hunter's Cr/Vogt Rd/Fred Meyer	
1	b	X	250		X								X		3	83		$20,824	Logan	
1	c		1850		X			X							0	0			Logan/Bolderfield/Layton	
2	a		600		X			X							0	0			Double Peaks Dr	
2	b	X	1400		X							X			2	42	$58,395		Egypt Dr	Need S/W S. side
3			2800		X			X							0	0			Ranch Village Dr	
4	a	X	1500		X			X					X		3	83		$124,944	Alpine Ridge	Partially completed
4	b		1150		X			X							0	0			Stonewood Dr	
5		X	1050		X			X					X		2	42		$43,796	Tristar	Partially completed
6	a	X	500		X								X		3	83		$41,648	Bolderfield/(new st.)	
6	b		900		X			X							0	0			Peale	
6	c	X	1300		X								X		3	83		$108,285	Peale	
6	d		1300		X				X						0	0			Wishing Well/Town Dr	
6	e		2600		X			X							0	0			Majestic Loop	
6	f		850		X				X						0	0			Cross Rd	
6	g	X	1300		X								X		3	83		$108,285	Cross Rd	
7	a	X	300		X								X		3	83		$24,989	Eastview	
7	b		2850		X			X							0	0			Eastview	
7	c	X	450		X								X		3	83		$37,483	Eastview	
8	a		2100		X			X							0	0			Sierra	
8	b	X	1350		X								X		3	83		$112,450	Sierra/Terrango	
8	c		750		X			X							0	0			Terrango	
8	d		600		X			X							0	0			Terrango/Watercress	
8	e	X	150			X		X				X			8	16	$2,442			Trail
8	e	X	100			X		X				X			12	1,271	$127,126			**Bridge**
9		X	350		X			X					X		10	55		$19,397		Trail
10			650		X			X							0	0			Morningstar Drive	

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
11	a		250		X			X							0	0			Stacy Lane	
11	b	X	700		X								X		3	83		$58,307	Stacy Lane	
11	c		550		X			X							0	0			Stacy Lane	
11	d		200		X			X							0	0			Stacy Lane	
11	e		700		X			X							0	0			Stacy Lane	
11	f	X	1400		X								X		3	83		$116,615	Stacey Ln/Lamoine Ln	
11	g		700		X			X							0	0			Lamoine Ln	
12		X	250		X								X		3	83		$20,824	Vogt Rd	(future)
13		X	700		X			X					X		2	42		$29,197	Tango Creek	Partially completed
14			100			X		X							0	0				Trail to Rock Ridge Park
15		X	1100		X								X		3	83		$91,626	(future street)	Sidewalks
16	a		300		X			X							0	0			Town Dr.	
16	b	X	1050		X								X		3	83		$87,461	Town Dr.	
17		X	8650		X			X				X			17.1	7.50	$64,875		Boyd Acres Road	Add Bike Lanes to Local St.

Total Length of Neighborhood System =	**53,550 L.F.**
Neighborhood Total Public Cost Estimate =	**$252,837**
Neighborhood Total Private Cost Estimate =	**$1,046,133**
Neighborhood Total All =	**$1,298,971**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	Rock Ridge Park
Potential park facility	Terrango
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	Lava Ridge E.S. & Skyview M.S.
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	SW corner
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
This neighborhood area is undgoing rapid development at this time. The area is comprised of significant single-family residential development and some industrial development. The area is bounded be Cooley Road on the north, the Railroad on the west, 18th Street on the east and Empire Blvd to the east.

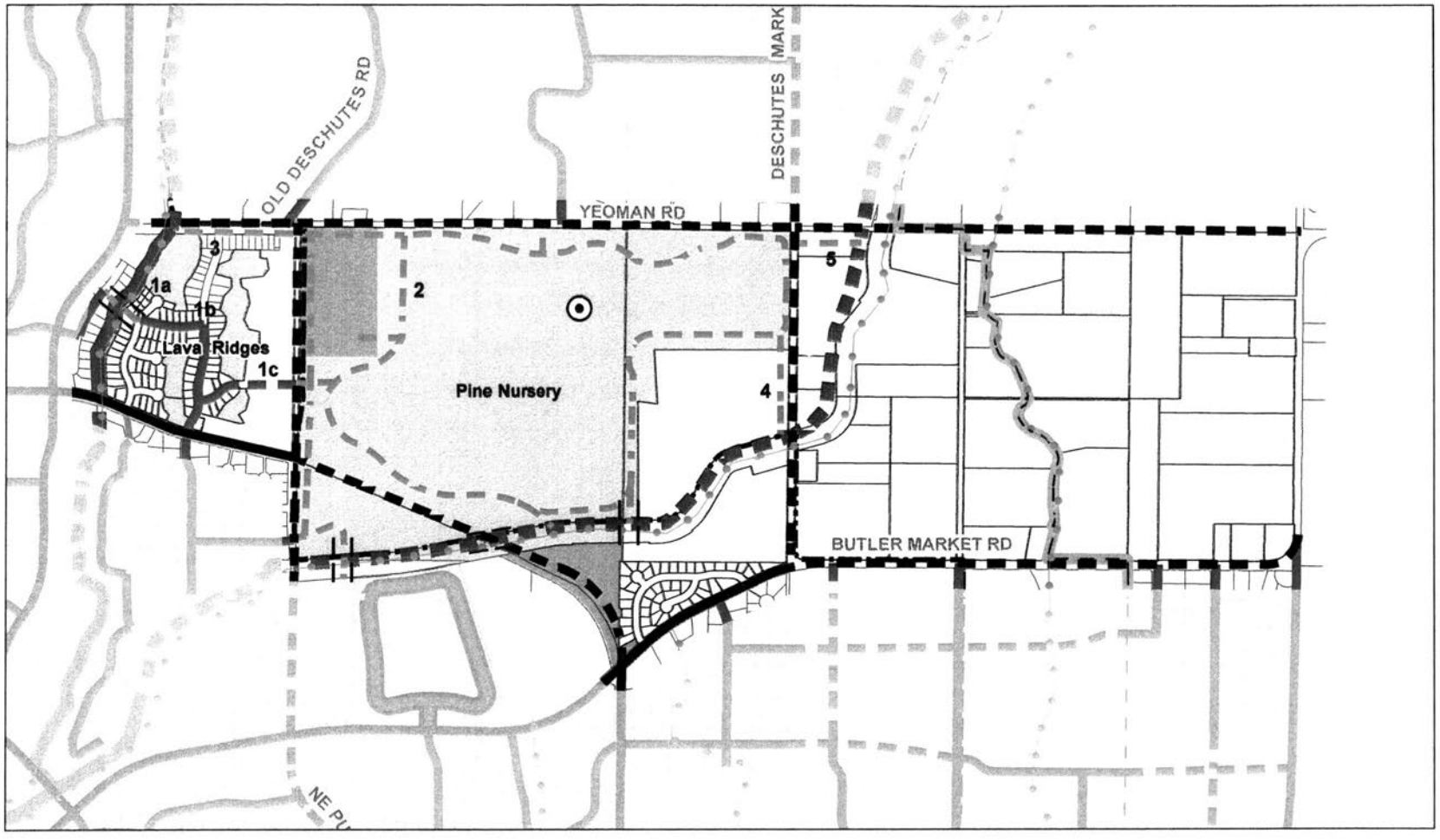
Opportunities:
Good street system connectivity within a gridded street system defined and encouraged by the Lava Ridge Refinement Plan. Good access to elementary and middle schools, and the future Rock Ridge Park.

Constraints:
Few constraints exist other than area is bounded by the Railroad on the west that limits street connectivity to Highway 97

Deficiencies:
Lack of a existing or planned trail system

Remedies:
Continued development of the local street and accessway system to complete linkages.

N3
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 4

October 20, 2006

Neighborhood: N4

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1 a	X	100			X		X				X			8	$16	$1,628			Trail: Canal Br. To Lava Flow
1 b		1700		X			X							0	$0			Lava Flow/Desert Sage/Rock Pk Dr	
1 c	X	1850		X								X		3	$83		$154,098	Rock Park Drive	(new street)
2	X	14520			X		X				X			10	$55	$804,717		Pine Nursery - future park	Park Loop & Access trails
3	X	1000		X				X				X		2	$42		$41,711	(future street)	Sidewalk - S. Side
4	X	650		X				X				X		10	$55		$36,024		Trail
5	X	550		X				X				X		10	$55		$30,482		Trail

Total Length of Neighborhood System =	**20,370 L.F.**
Neighborhood Total Public Cost Estimate =	**$806,344**
Neighborhood Total Private Cost Estimate =	**$262,314**
Neighborhood Total All =	**$1,068,659**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Canal Park
Undeveloped park facility	
Potential park facility	Pine Nursery
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-In the western sector of the area
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
The Pine Nursery, a regional park, dominates this neighborhood area. Canal Park also occurs within this area. The UGB to the north and east and Butler Market Road and Empire Avenue to the south define the area. The Lava Ridge ASI occurs on the western edge of the area. Scattered residential land uses occur within the area.

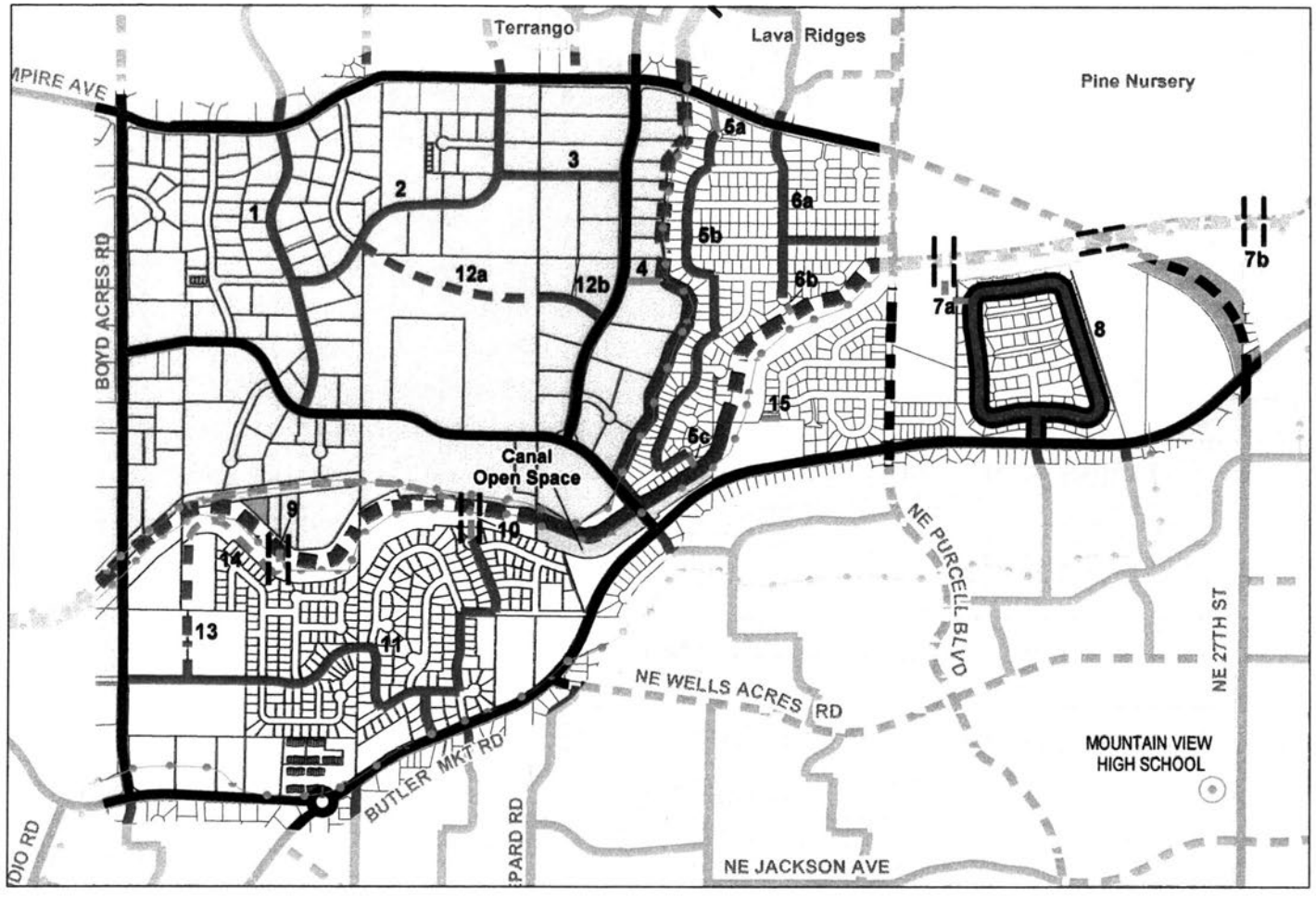
Opportunities:
Convenient connection to the regional trail system and the development potential of the regional park.

Constraints:
Major street system, the major canal system.

Deficiencies:
Not a significant local road system and misc. geographic boundaries.

Remedies:
Development of street and accessway system and the major canal trail system and potential bike/ped bridges of the canal.

N4
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 5

October 20, 2006

Neighborhood: **N5**

		• *Proposed:*	• *Length: (Feet)*	• *Type:*	Roadway	Trail	• *R.O.W.: (Existing)*	Public	Private	Easement	• *Improvement Need:*	Public	Private	• *Improvement Cost:*	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• *Location:*	• *Other Comments:*
1			2100		X			X							0	$0			Layton Ave.	
2			2550		X			X							0	$0			High Desert	
3			850		X			X							0	$0			Montana	
4		X	250			X				X		X			7	$7	$1,726			Trail between canal & street
5	a	X	150			X				X		X			7	$7	$1,035			Trail between streets
5	b		3150		X			X							0	$0			Marsh Orchid/Buckwheat/Bilyeu	
5	c		100			X				X					0	$0				Trail between canal & street
6	a		2050		X			X							0	$0			Desert Sage/Spinacker	
6	b		100			X		X							0	$0				Trail between canal & street
7	a	X	400			X						X			10	$55	$22,169			Trail between canal & street
7	a	X	100			X						X			12	$1,271	$127,126			Canal-Trail **Bridge**
7	b	X	400			X						X			10	$55	$22,169			Trail between canal & street
7	b	X	100			X						X			12	$1,271	$127,126			Canal-Trail **Bridge**
8			3750		X				X						0	$0			Stonebrook Loop	
9		X	100			X				X		X			12	$1,271	$127,126			Canal-Trail **Bridge**
9		X	200			X				X		X			7	$7	$1,381			Canal-Trail
10		X	300			X				X		X			7	$7	$2,071		Stonebrook Loop	Trail between canal & street
10		X	100			X				X		X			12	$1,271	$127,126			Canal-Trail **Bridge**
11			4750		X			X							0	$0			Ross/Lotno/Sandy/Rum Gay/Quiet Canyon	
12	a	X	1400		X								X		3	$83		$116,615	Sockeye	
12	b		500		X			X							0	$0			Sockeye	
13		X	1000		X								X		3	$83		$83,296	(new street)	Sidewalks
14		X	950			X						X			7	$7	$6,558			Trail between canal & street
15		X	150			X			X				X		7	$7		$1,035		Trail between canal & street

Total Length of Neighborhood System =	**25,500 L.F.**
Neighborhood Total Public Cost Estimate =	**$565,611**
Neighborhood Total Private Cost Estimate =	**$200,946**
Neighborhood Total All =	**$766,557**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	Canal Open Space
Other Open Space:	
Golf course	None
Deschutes River:	None
Deschutes River:	None
Deschutes River:	None
Deschutes River:	None
ASI*	Yes-In the central sector and SW corner of the area
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	NW sector of the area
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Empire Avenue defines this neighborhood area to the north, Boyd Acres Road to the west, and Butler Market Road to the south. The area is composed of light industrial uses in the northwest sector of the area, medium density residential to the southwest and single family density residential in the eastern sector of the area. An ASI occurs in the middle of this area.

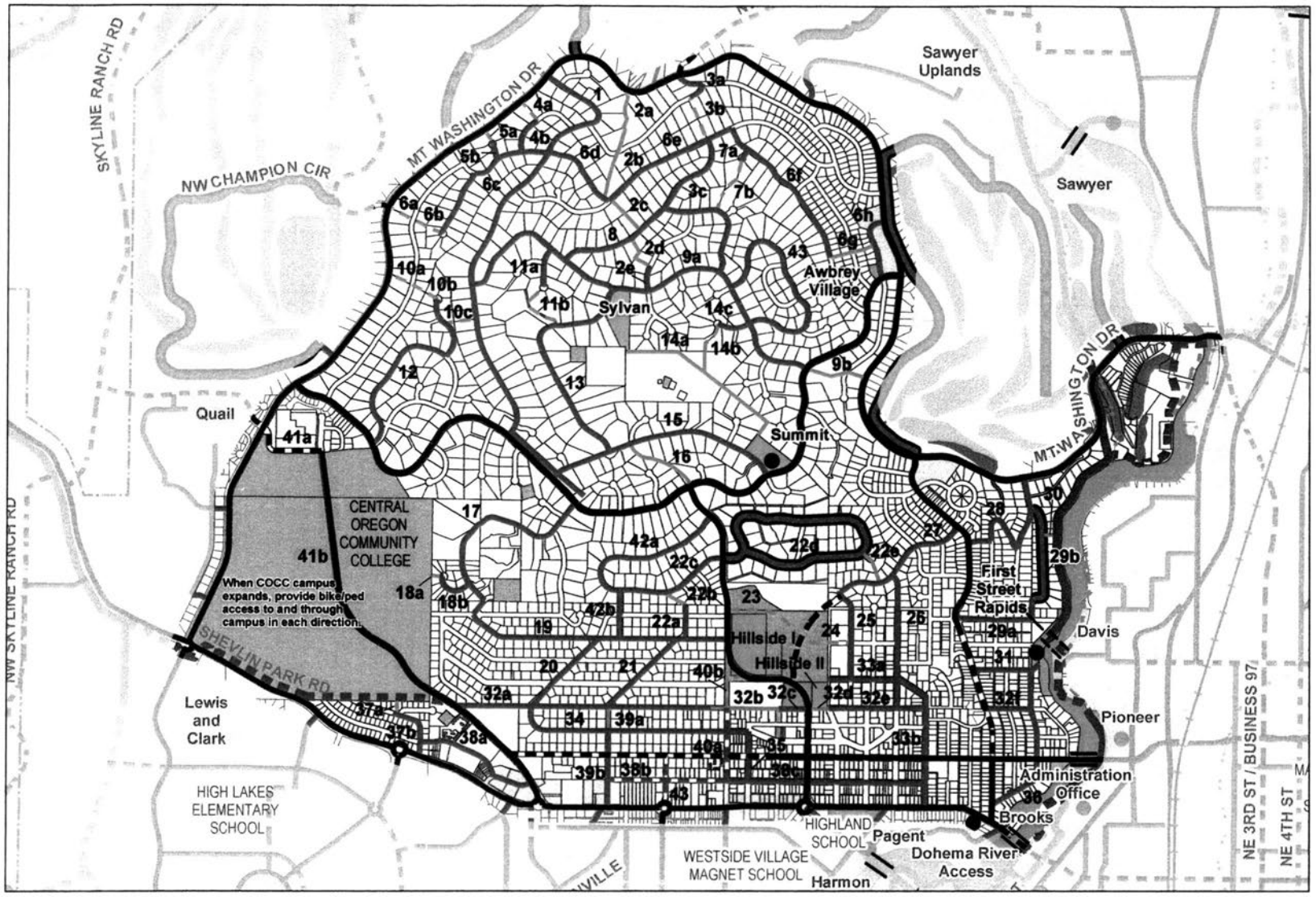
Opportunities:
Proximity to industrial zoned properties and connections to the regional trail system

Constraints:
Barriers created by the major street system and canal system.

Deficiencies:
Lack of full grid street system and canal crossings.

Remedies:
Completion of the local street, the canal trail and accessway system

N5
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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DESCHUTES GEOgraphics

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 6

October 20, 2006

Neighborhood: N6

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			5,550		X			X							0	$0			Starview Drive/Summit Dr.	
2	a	X	750			X				X		X			4	$0.13	$94		Mt Wash to Panorama Dr.	Existing trail to river trail
2	b	X	500			X				X		X			4	$0.13	$63		Panarama to Remarkable	Existing trail to river trail
2	c	X	550			X				X		X			5	$1.15	$633		Remarkable to Overlook Dr.	Trail to river trail
2	d	X	500			X				X		X			5	$1.15	$575		Overlook to Winslow	Trail to river trail
3	a		650		X			X							0	$0			Constellation Dr	
3	b	X	550			X				X		X			5	$1.15	$633		Panorama to Remarkable Dr.	Easement only, no trail
3	c		900		X			X							0	$0			Overlook Drive	
4	a	X	350			X				X		X			5	$1.15	$403		Trail to Windwood Way	Easement only, no trail
4	b		450		X			X							0	$0			Windwood Way	
5	a	X	150			X				X		X			5	$1.15	$173		Trail to Rademacher Place	Easement only, no trail
5	b		250		X			X							0	$0			Rademacher Place	
6	a	X	250			X				X		X			5	$1.15	$288		Trail W. side of Butte	Easement only, no trail
6	b	X	400			X				X		X			5	$1.15	$460		Trail W. side of Butte	Easement only, no trail
6	c		2,100		X			X							0	$0			Metke Pl./Perspective Dr.	
6	d		900		X			X							0	$0			Perspective Drive	
6	e		1,850		X			X							0	$0			Remarkable Drive	
6	f		2,100		X			X							0	$0			Colonial Drive	
6	g		550			X				X					0	$0			Trail E side of Butte	Existing barkchip/RR tie trail
6	h		800		X			X							0	$0			Merchant Way	
7	a		200		X			X							0	$0			Colver Ct.	
7	b	X	650			X				X		X			5	$1.15	$748		Colver Ct. to Duffy Way	Easement only, no trail
8			4,200		X			X							0	$0			Overlook/Duffy drives	
9	a		5,550		X			X							0	$0			Farewell Drive	
9	b		800			X		X							0	$0				Trail bet. Summit & Mt. Wash
10	a	X	250			X				X		X			5	$1.15	$288		Trail W. side of Butte	Easement only, no trail
10	b	X	250			X				X		X			5	$1.15	$288		Trail W. side of Butte	Easement only, no trail
10	c	X	400			X				X		X			5	$1.15	$460		Trail W. side of Butte	Easement only, no trail
11	a		550		X			X							0	$0			Lawrence Ct	
11	b	X	900			X				X		X			5	$1.15	$1,035		Lawren. Ct. to 3 Sisters Dr.	Easement only, no trail
12			2,900		X			X							0	$0			Horizon Drive	
13			2,900		X			X							0	$0			Three Sisters Drive	
14	a		2,400			X		X							0	$0			Trail Top of the Butte	Existing 6'+ Trail bark & earth

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
14 b	X	600			X				X		X			5	$1.15	$690		Trail conn.to Elliot Ct.	Easement only, no trail
14 c		400		X			X							0	$0			Elliot Ct.	
15		3,050		X			X							0	$0			Promontory Drive	
16		650			X		X							0	$0			(old) 12th St. ROW	Existing paved trail
17		2,800		X			X							0	$0			Glassow Drive	
18 a		100			X				X					0	$0			Trail on east side of COCC	Existing trail, gravel to college
18 b		650		X			X							0	$0			Sun Ray Ct.	
19		3,300		X			X							0	$0			Iowa Ave.	
20		1,100		X			X							0	$0			West Hills Drive	
21		2,000		X			X							0	$0			Juniper St	
22 a		550		X			X							0	$0			Juniper St	
22 b		250			X		X							0	$0			Trail between streets	Existing, 8-10' paved trail
22 c		1,450		X			X							0	$0			City View Drive	
22 d		5,750		X				X						0	$0			Stonepine Drive	
22 e		250			X				X					0	$0			Trail to Sonora	Existing, 8-10' paved trail
23	X	1,000			X		X				X			9	$24	$23,778		Trail N of Hillside Park	Future Trail
24	X	600			X		X				X			9	$24	$14,267		Street stub to 9th St. (s)	d/w paved, then unimproved
25		1,100		X			X							0	$0			Eastes Street	
26		1,300		X			X							0	$0			6th Street	
27		1,850		X			X							0	$0			Sonora Drive	
28		1,700		X			X							0	$0			2nd St. to Todd's Crest	
29 a		1,200		X			X	X						0	$0			Wilmington	
29 b		1,200		X				X						0	$0			1st Street	
30		150			X				X					0	$0			Trail E side of Butte to R.	Conn. to river trail
31	X	850		X			X				X			2	$42	$35,454		Utica Ave.	Unimproved street ROW
32 a		3,250		X			X							0	$0			Saginaw Ave. W. of 12th	
32 b	X	750		X			X				X			9	$24	$17,833		Saginaw Ave. E. of 12th	
32 c		400		X			X							0	$0			Saginaw Ave. W. of 9th	
32 d	X	250			X		X				X			5	$1	$288		Saginaw Ave. E. of 9th	
32 e		1,250		X			X							0	$0			Saginaw W. of 5th	
32 f		550		X			X							0	$0			Saginaw E. of Awbrey	
33 a		1,200		X			X							0	$0			Trenton Ave.	
33 b		1,200		X			X							0	$0			5th Street	
34		3,050		X			X							0	$0			Quincy Ave.	
35		650		X			X							0	$0			11th Street	
36	X	2,100		X			X				X			2	$42	$87,592		1st Street (sidewalk)	"River Trail Route"

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
37	a		100			X				X					0	$0			Trail to S. side COCC	Exist. 8-10', paved trail to COCC
37	b		800		X			X							0	$0			Torrey Pines Drive	
38	a		1,600		X			X							0	$0			Monterey Pines Ave.	
38	b	X	1,500		X			X					X		2	$42		$62,566	Ogden Ave	Unimproved
38	c		2,550		X			X							0	$0			Ogden Ave	
39	a	X	300		X			X				X			8	$16	$4,883		Juniper St	Exist. unimproved ROW
39	b		950		X			X							0	$0			Juniper St	
40	a	X	1,300		X			X				X			3	$83	$108,285		12th Street Ogden-Saginaw	
40	b	X	600			X		X				X			5	$1.15	$690		12th Street to 9th St.	Exist. unimproved ROW
41	a	X	900		X			X				X			17.1	$8	$6,750		Regency E. of Mt Wash.	Future Bike Lanes on Local
41	b		4,000		X			X							0	$0			College Way	Existing Bike Lanes on Local
42	a		2,100		X			X							0	$0			City View Drive	
42	b	X	600			X		X				X			2	$41.71	$25,026		Evergreen St	
43		X	600		X			X				X			3	$83	$49,978		14th St N. of Newport	

Total Length of Neighborhood System =	**108,450**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$381,650**	
Neighborhood Total Private Cost Estimate =	**$62,566**	
Neighborhood Total All =	**$444,216**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Awbrey Village Park
	Sylvan Park
	Summit Park
	Hillside Park 1
	Hillside Park 2
	First Street Rapids Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	Portion of River's Edge
Deschutes River:	Yes
ASI*	None
Schools:	Central Oregon Community College SW sector of area
Land Uses:	
Commercial	
Neighborhood	Awbrey Village
	Newport Ave.
	College Way
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:

The Awbrey Butte residential development (larger lots) composes a majority of this area. Several older residential developments occur on the south slope of Awbrey Butte. The lower portion of the area is composed of medium density residential developments. The Central Oregon Community College is located in the southwest corner of this area. A neighborhood commercial area occurs along Newport Ave. Numerous parks occur within this area. This area is defined by Mt. Washington Drive to the west, north, the Deschutes River to the east and Newport Ave. to the south.

Opportunities:

Abundance of Parks and some existing connector trails and one of the most community valued Primary Trails along the river. Many accessways were platted or easements granted as a part of development of the butte.

Constraints:

A number of the easements were not developed and or marked. Existing development will make retrofitting of the system politically difficult given these areas have typically been landscaped by private property owners.

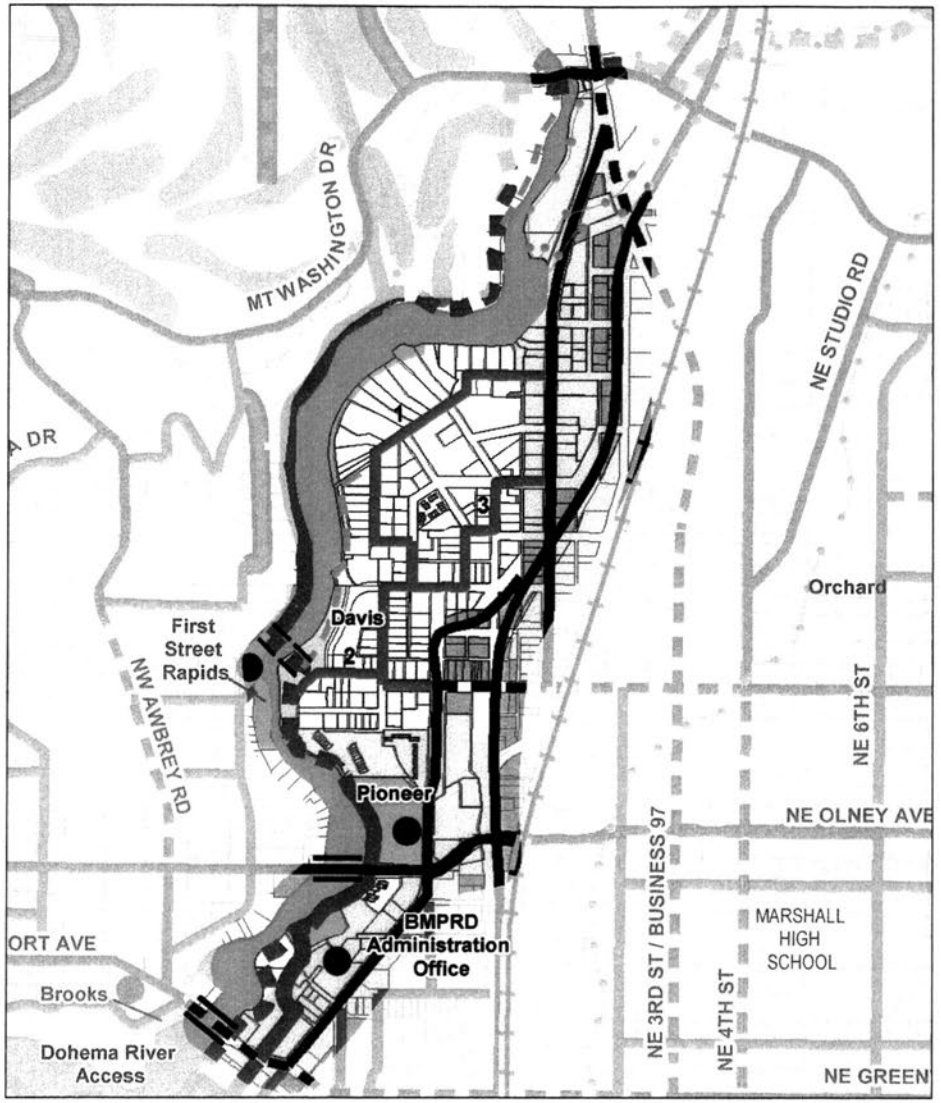
Deficiencies:

Due to grade of the butte there are many long streets with few or limited interconnections.

Remedies:

Working with property owners to open-up many of the accessways will complete a good network of pedestrian opportunities to reduce travel distances.

N6
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 7

October 20, 2006

Neighborhood: N7

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		2600		X			X							0	$0.00			Lakeside Pl/Harriman	
2		450		X			X							0	$0.00			Revere	
3		2450		X			X							0	$0.00			Vail/Deschutes Pl/Underwood/Hill/Thurston/Harriman	

Total Length of Neighborhood System =		**5,500 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$0**	
Neighborhood Total All =	**$0**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Pioneer
	Pacific
Undeveloped park facility	None
Potential park facility	Davis
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	Limited
Regional	Limited
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
The Deschutes River to the west, Newport Ave. to the south and the Parkway to the east define this neighborhood area. This area is just north of downtown Bend (with commercial and limited residential land uses). Low and medium density residential areas and commercial uses compose the northern portion of the area. Several parks occur within this neighborhood area.

Opportunities:
Connection of the local street system to enhance non automobile travel

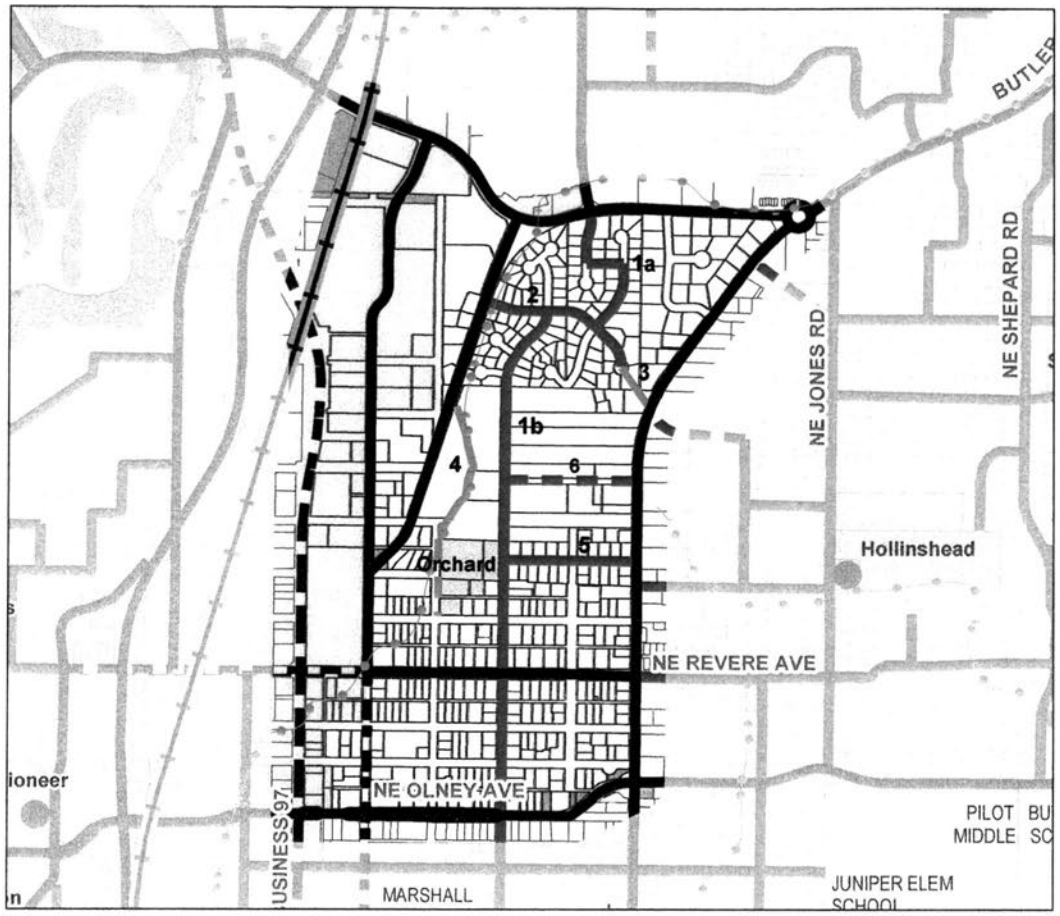
Constraints:
Bounded on the west by the river and the east by the Parkway

Deficiencies:

Missing some good street connectivity in the middle of the neighborhood

Remedies:
Completion of the street system within the remaining developing and redeveloping areas will enhance bicycle and pedestrian travel.

N7
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 8

October 20, 2006

Neighborhood: **N8**

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1 a		1050		X			X							0	$0			Boyd Acres/Shelley/Keats	
1 b		3550		X			X							0	$0			6th Street	
2		1300		X			X							0	$0			Majesty Lane	
3		250			X				X					0	$0			Dyer to 8th	Trail to Dyer Drive
4		1050			X				X					0	$0				Trail - Studio Rd - Orchard Pk
4	X	550			X		X				X			2	$42	$22,941			Sidwalk frontage - Orchard Pk
5		900		X			X							0	$0			Innes	
6	X	850		X			X					X		3	$83		$70,802	Vail	

Total Length of Neighborhood System =		**9,500 L.F.**
Neighborhood Total Public Cost Estimate =	**$22,941**	
Neighborhood Total Private Cost Estimate =	**$70,802**	
Neighborhood Total All =	**$93,743**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	Orchard
Potential park facility	
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	
Schools:	None
Land Uses:	
Commercial	
Neighborhood	Limited
Regional	None
Industrial	3rd. Street commercial on west side of the area
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:

This area is defined by 8th Street to the east, Olney Ave. to the south 3rd Street to the west and Butler Market Road to the north. The western sector of the area is bounded by highway commercial, light industry and high-density residential developments. The eastern sector is composed of low to medium density residential areas.

Opportunities:

Good grid street pattern. Proximity to the central commercial corridor destinations and job opportunities. Large Parcels with redevelopment potential to improve street connectivity

Constraints:

Minimal constraints. Large Undeveloped Parcels.

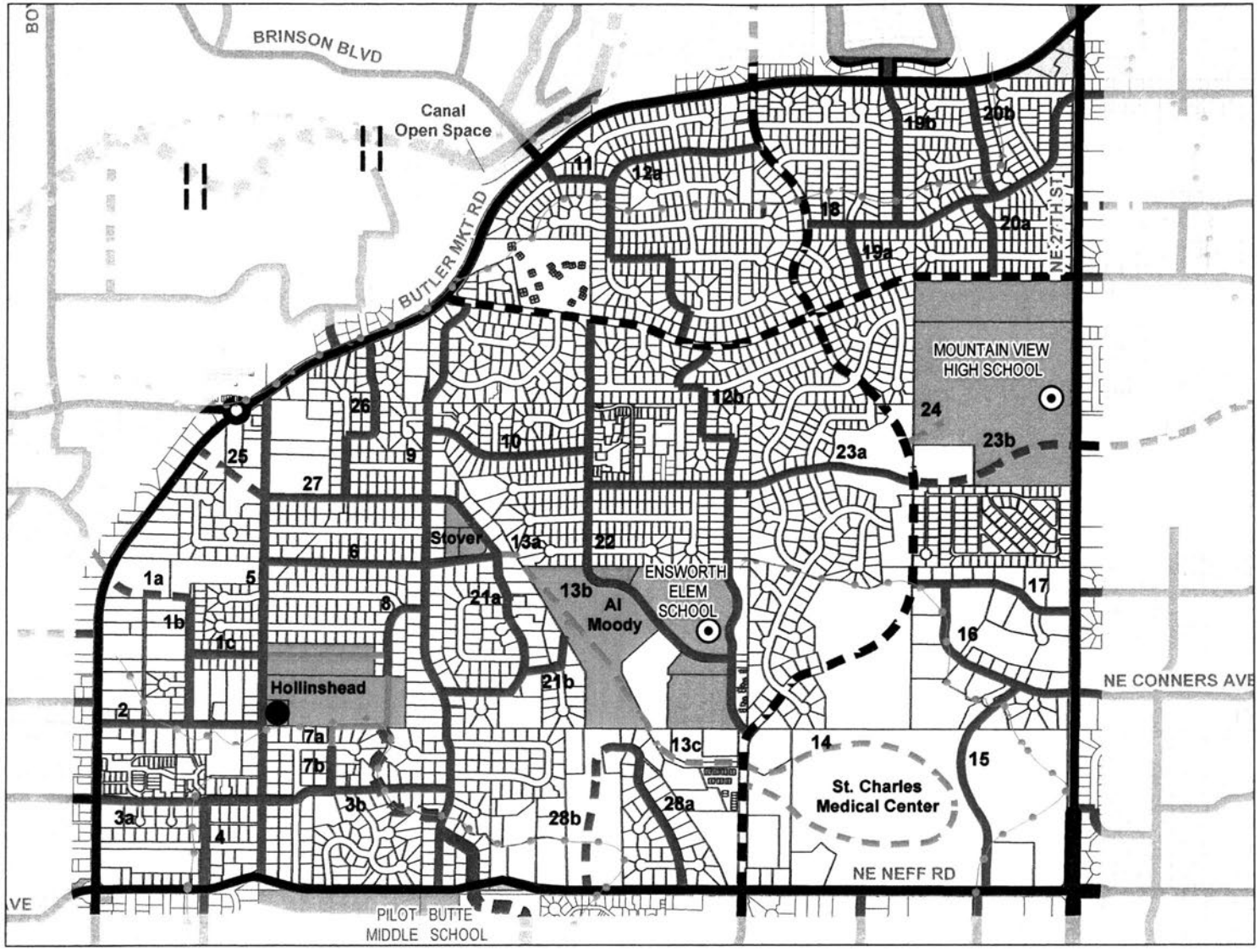
Deficiencies:

Minimal deficiencies within neighborhood

Remedies:

Trail along the irrigation lateral and full development of grid street system

N8



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

N
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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 9

October 20, 2006

Neighborhood: N9

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a	X	650		X								X		3	$83		$54,143	Dyer St. east of 8th	(new street)
1	b		1050		X			X							0	$0			11th Place	
1	c		600		X			X							0	$0			Ullysess Drive	11th to Jones
2			1300		X			X							0	$0			Jones Road	
3	a		1300		X			X							0	$0			Revere E. of 8th	
3	b		1700		X			X							0	$0			Revere E. of Jones	
4			650		X			X							0	$0			11th N. of Penn	
5			3950		X			X							0	$0			Jones Road	
6			2000		X			X							0	$0			Watson Dr to Meadow Ln	
7	a		100		X			X							0	$0				Trail S. of Hollinghead Pk
7	b		350			X				X					0	$0			14th St. S. of Seward	Existing
8			900		X			X							0	$0			Edgewood St.	
9			5150		X			X							0	$0			Shepard Road & Eastwood	
10			1300		X			X							0	$0			Meerkat	
11			650		X			X							0	$0			Brinson/Cackler Ln.	
12	a		2900		X			X							0	$0			Monroe/Veronica	
12	b		2250		X			X							0	$0			Cordata/Moonlight Dr.	
13	a	X	200			X						X			7	$7	$1,381			Trail E. of Meadow
13	b	X	1050			X						X			7	$7	$7,248			Trail System thru Moody Park
13	c	X	2400			X						X			7	$7	$16,567			Trail S. of Park
14			3450		X				X						0	$0			Local Loop Road	
15			600		X				X						0	$0			Doctor's Dr/SCMC Dr.	
16			1700		X			X							0	$0			Conners W. of 27th	
17			1500		X			X							0	$0			Courtney Dr.W. of 27th	
18			2800		X			X							0	$0			Lynda Lane	
19	a		500		X			X							0	$0			Saber Drive	
19	b		1200		X			X							0	$0			Stonebrook S. of BM RD	

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
20	a		550		X			X							0	$0			Weeping Willow Dr (S)	
20	b		1050		X			X							0	$0			Weeping Willow Dr (N)	
21	a		2650		X			X							0	$0			Meadow Ln to Pheasant	
21	b		550		X			X							0	$0			Pheasant Lane	
22			3500		X			X							0	$0			Daggett Rd	
23	a		2600		X			X							0	$0			Jackson	
23	b	X	1300		X			X					X		3	$83		$108,285	Jackson E. of Purcell	(If street conn.deemed necessary)
24		X	250			X						X			7	$7	$1,726		E. of Purcell	Trail to Mt View H.S.
25		X	650		X				X				X		3	$83		$54,143	(new street)	
26			1450		X										0	$0			N. Pilot Butte Dr /Harvey	
27			1300		X			X							0	$0			Thompsen	
28	a		1400		X			X							0	$0			Cliff	
28	b	X	1350		X								X		3	$83		$112,450	Cliff (loop extension to Neff)	

Total Length of Neighborhood System =	**60,800 L.F.**
Neighborhood Total Public Cost Estimate =	**$26,921**
Neighborhood Total Private Cost Estimate =	**$329,020**
Neighborhood Total All =	**$355,941**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Hollinshead
	Stover
Undeveloped park facility	Al Moody
Potential park facility	None
Other Open Space:	
Golf course	None
ASI*	Yes-In the central portion of the area (Trail 13 area)
Schools:	Mountain View High School
	Ensworth E.S.
Land Uses:	
Institutional	S.C.M.C. & support medical facilities in SE sector of the area
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:

This neighborhood area is defined by 8th Street to the west, Butler Market Road to the north, Neff Road to the south and 27th to the east. A majority of the area is composed of single-family residential developments. High and medium density residential developments occur in the southeast corner of the area. St. Charles Medical Center and support medical facilities are located in the southeast corner of the area. Several parks and schools are located in the area. An ASI is located in the center of the area.

Opportunities:

Remaining vacant parcels provide opportunity to complete street connectivity and improve non automobile circulation.

Constraints:

Non continuous street system.

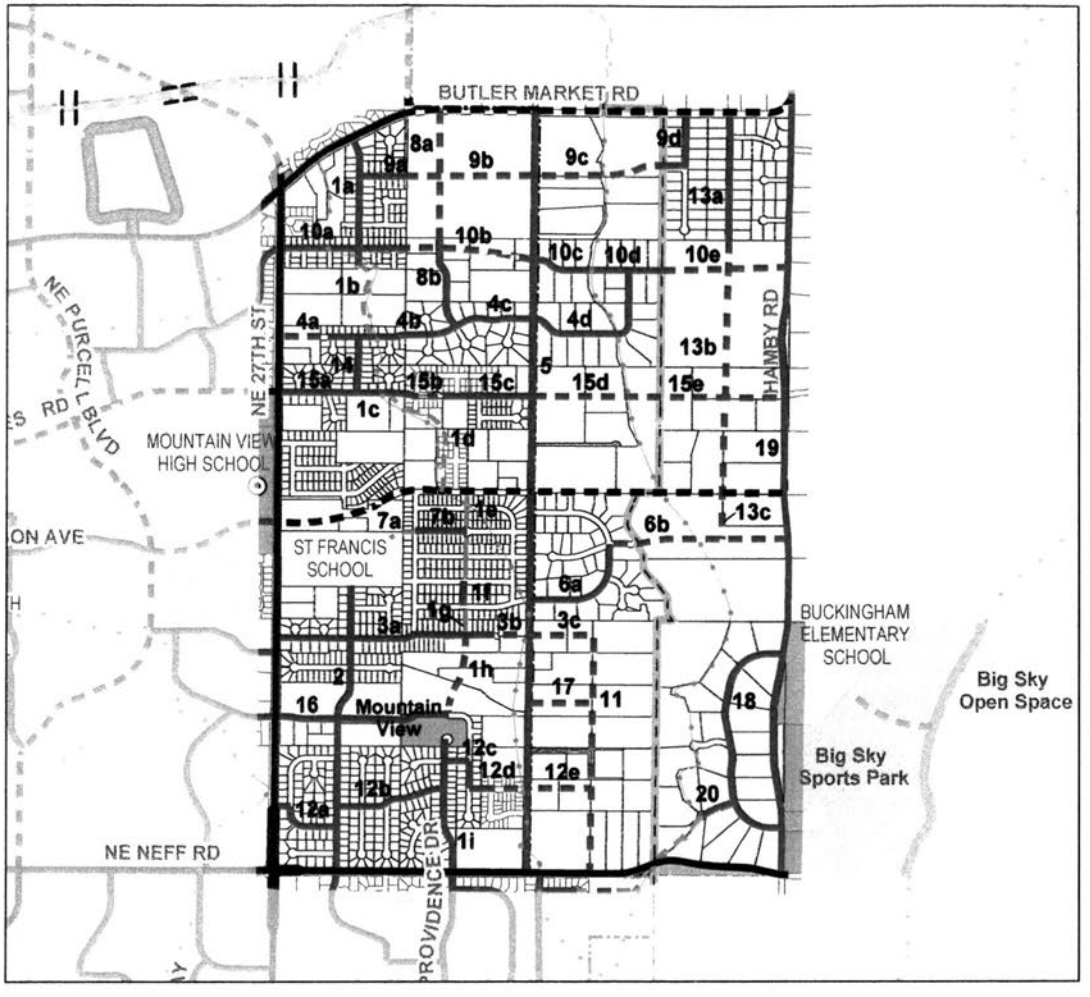
Deficiencies:

Minimal although area lacks east-west connectivity due to ASI.

Remedies:

Future park site development will improve circulation deficiency as well as improve accessibility to important neighborhood destinations.

N9
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 10

October 20, 2006

Neighborhood: **N10**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1350		X			X							0	$0			Sandelwood Drive	
1	b	X	750			X				X			X		7	$7		$5,177	Trail along the lateral	
1	c	X	600		X			X					X		2	$42		$25,026	Wells Acres Road	Sidewalk - one side
1	d	X	1300			X				X			X		3	$83		$108,285	(new street)	
1	e		900			X									0	$0			Trail thru subdivision	Existing Paved, 8-10' trail
1	f		250		X			X							0	$0			Eider Lane	
1	g		250			X				X					0	$0			Trail thru subdivision	Existing Paved, 8-10' trail
1	h	X	800		X								X		3	$83		$66,637	(future street)	Sidewalks
1	i		1450		X			X							0	$0			Providence Dr. N. of Neff	
2			3050		X			X							0	$0			Tuscon Way	
3	a		2000		X			X							0	$0			Yellow Ribbon Dr.	
3	b	X	550		X								X		3	$83		$45,813	Yellow Ribbon Dr. to E.	Sidewalks
3	c	X	650		X								X		3	$83		$54,143	(new street)	Sidewalks
4	a	X	400		X			X					X		3	$83		$33,319	Keyte Lane	Sidewalks
4	b		400		X			X							0	$0			Keyte Lane	
4	c	X	1850		X			X				X			3	$83	$154,098		Keyte Lane	Sidewalks
4	d		1600		X			X							0	$0			Keyte Lane/Pearl	
5		X	7900		X			X				X	X		3	$83	$329,020	$329,020	Eagle Road	1/2 Public & 1/2 Private
6	a		1300		X			X							0	$0			Bradetich Loop/Belnap Dr	
6	b	X	1600		X			X					X		3	$83		$133,274	Belnap Drive east	Future Street Extension
7	a	X	100			X		X				X			8	$16	$1,628		Trail west to St Francis Sch.	20' ROW Existing
7	b		600		X			X							0	$0			Oakview Drive	
8	a	X	1300		X								X		3	$83		$108,285	(new street)	Sidewalks
8	b	X	950		X								X		3	$83		$79,131	Daniel Road	Sidewalks
9	a		450		X			X							0	$0			Flagstone	
9	b	X	1300		X								X		3	$83		$108,285	(new street)	Sidewalks

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
9	c	X	2350		X								X		3	$83		$195,746	(new street)	Sidewalks
9	d		750		X			X							0	$0			Clyde Lane + Stub St	
10	a		1300		X			X							0	$0			Jill	
10	b	X	1300		X								X		3	$83		$108,285	(new street)	Sidewalks
10	c	X	550		X			X				X			3	$83	$45,813		Hyde Lane	
10	d	X	750		X			X				X			3	$83	$62,472		Hyde Lane	
10	e	X	1300		X								X		3	$83		$108,285	(new street)	Sidewalks
11		X	2450		X								X		3	$83		$204,076	(new street)	Sidewalks
12	a		800		X			X							0	$0			Wichita	
12	b		1100		X			X							0	$0			Laramie	
12	c		250		X			X							0	$0			Byers/Curtis	
12	d	X	600		X								X		3	$83		$49,978	Angela	
12	e	X	650		X								X		3	$83		$54,143	(new street)	Sidewalks
13	a		1350		X			X							0	$0			Florence	
13	b	X	2650		X								X		3	$83		$220,735	(new street)	Sidewalks
13	c	X	600		X								X		3	$83		$49,978	(new street)	Sidewalks
14			550		X			X							0	$0			Pacific Crest	
15	a		1300		X			X							0	$0			Wells Acres	
15	b	X	100		X								X		3	$83		$8,330	Promise Lane	
15	c		1200		X			X							0	$0			Promise Lane	
15	d	X	950		X								X		3	$83		$79,131	(new street)	Sidewalks
15	e	X	1600		X								X		3	$83		$133,274	(new street)	Sidewalks
16			1700		X			X							0	$0			Conners	
17		X	650		X								X		3	$83		$54,143	(new street)	Sidewalks
18			2450		X			X							0	$0			Quail Ridge	
19		X	7840		X			X				X			3	$83	$653,043		Hanby	Sidewalk need
20			400		X			X							0	$0			Stoney Ridge Road	
20		X	800			X			X			X			7	$7	$5,522		Neff - Stoney Ridge Rd	Trail Improvement

Total Length of Neighborhood System =	**71,940**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$1,251,596**	
Neighborhood Total Private Cost Estimate =	**$2,362,498**	
Neighborhood Total All =	**$3,614,094**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None, Big Sky Sports Park to the east
Undeveloped park facility	Mountain View Park (under development)
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None, Buckingham Elem. School to the east
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:

This neighborhood area is defined by 27th to the west, Neff Road to the south Butler Market Road to the north and Hamby Road to the east. The western sector of this area is composed of single-family residential developments. The eastern area is composed of low-density residential areas. A regional sports park and elementary school are located to the east of this area.

Opportunities:

Opportunity to complete the street grid and completion of a trail system

Constraints:

Existing development in the eastern half of this area has foreclosed some opportunities for a complete grid street system

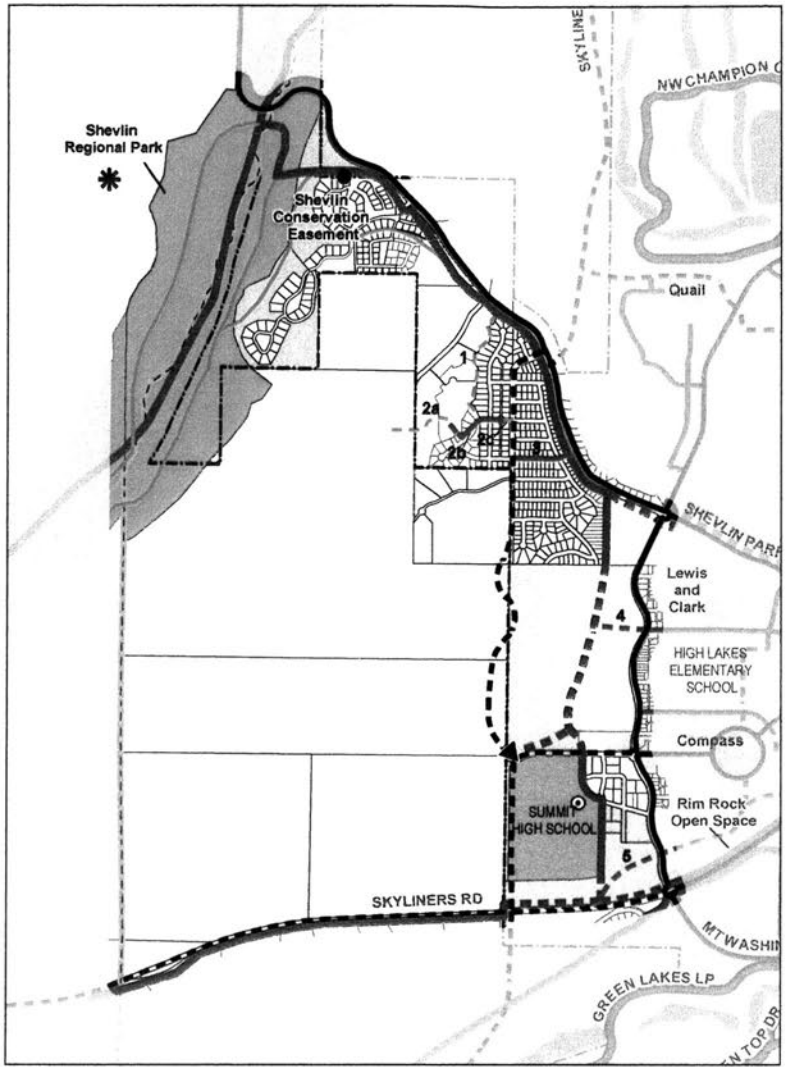
Deficiencies:

Area generally lacks a good continuous system of north-south travel opportunities.

Remedies:

Completion of the local street system will enhance circulation for non automobile travel

N10
8/15/2006



Neighborhood 11 Legend

- Connection Point
- Destination

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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Miles

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DESCHUTES GEOgraphics

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 11

October 20, 2006

Neighborhood: **N11**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			2000			X		X							0	$0				Alleyway thru subdivision
2	a	X	700			X							X		7	$7		$4,832		Trail connection to the west
2	b		900		X			X							0	$0			Shevlin Mdw/Morningwood	
2	c		100			X		X							0	$0				Trail between streets
3			800		X			X							0	$0			Shevlin Mdws Dr	
4		X	500		X								X		3	$83		$41,648	(new street)	Sidewalks
5		X	1100		X								X		3	$83		$91,626	(new street)	Sidewalks

Total Length of Neighborhood System =	**6,100 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$138,106**
Neighborhood Total All =	**$138,106**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Shevlin Park
	Shevlin Conservation Easement
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-In the NE sector of the area (Trail 2)
Schools:	Summit High School
	C.O.C.C. property NE sector of the area
Land Uses:	
Commercial	
Neighborhood	Future development in the east sector of the area
Regional	None
Industrial	Future development in the SW corner of the area
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Mt. Washington Drive defines this area to the east, Shevlin Park Road to the north, Skyliners Road to the south and the UGB to the west. The western sector of the area is within the Urban Reserve area and is defined as a future destination resort area. US Forest Service land occurs to the west of this area. Single-family residential developments occur along Shevlin Park Road. A mixed-use residential and commercial development is located in the eastern sector of the area. A high school and a regional natural area park are within this area.

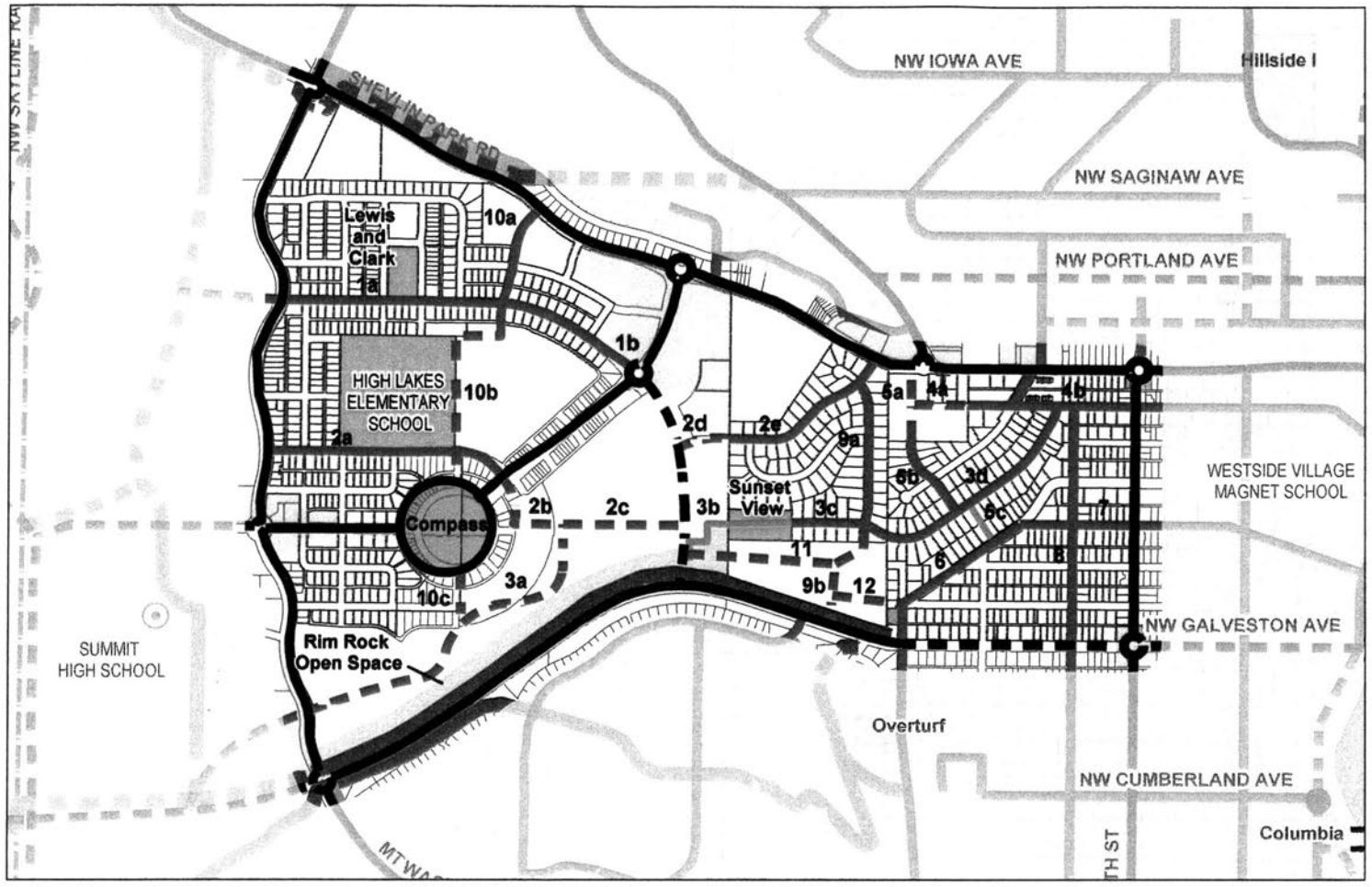
Opportunities:
To develop a good street grid and accessway system.

Constraints:
No specific constraints.

Deficiencies:
No specific deficiencies

Remedies:
Local street development with new subdivisions

N11
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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Miles

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 12

October 20, 2006

Neighborhood: **N12**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1650		X			X							0	$0			Lemhi Pass Dr	
1	b		1150		X			X							0	$0			Lemhi Pass Dr	
2	a		1850		X			X							0	$0			High Lakes	
2	b	X	400		X								X		3	$83		$33,319	High Lakes	(future extension)
2	c	X	900		X								X		3	$83		$74,967	(future street)	Sidewalks
2	d	X	350		X								X		3	$83		$29,154	(future street)	Sidewalks
2	e		1300		X			X							0	$0			Newport Hills Dr	
3	a	X	2850		X			X					X		3	$83		$237,394	(future street)	Sidewalks
3	b		100		X				X						0	$0				Trail to & thru Park
3	c		550		X			X							0	$0			Stannium Road	
3	d		1850		X			X							0	$0			Stannium Road	
4	a	X	400		X				X				X		3	$83		$33,319	Milwaukie	
4	b		1500		X			X							0	$0			Knoxville/Milwaukee	
5	a	X	500		X								X		3	$83		$41,648	Rockwood	
5	b		700		X										0	$0			Rockwood	
5	c	X	350			X				X		X			9	$24	$8,322			Trail bet. Stan. & Kingston
6			2250		X			X							0	$0			Kingston Ave.	
7			1700		X			X							0	$0			Jacksonville	
8			2050		X			X							0	$0			15th Street	Milwaukee to Galveston
9	a		1200		X			X							0	$0			18th Street	
9	b	X	300		X								X		3	$83		$24,989	18th Street	
10	a		900		X			X							0	$0			SIlas Pl	
10	b	X	1500		X								X		3	$83		$124,944	(future street)	Sidewalks
10	c	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
11		X	1000		X								X		3	$83		$83,296	(future street)	Sidewalks
12		X	450		X								X		3	$83		$37,483	(future street)	Sidewalks

Total Length of Neighborhood System =		**28,400 L.F.**
Neighborhood Total Public Cost Estimate =	**$8,322**	
Neighborhood Total Private Cost Estimate =	**$774,655**	
Neighborhood Total All =	**$782,977**	

DESTINATIONS

Neighborhood Parks:	
Developed Parks	Lewis & Clark & Sunset View parks
Undeveloped park facility	Compass Park (underdevelopment)
Potential park facility	
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	High Lakes Elementary
Land Uses:	
Commercial	
Neighborhood	SE corner and the west sector of the area
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Mt. Washington Drive defines this area to the west, Shevlin Park Road to the north, Skyliners Road / Galveston Ave. to the south and 14th Street to the east. The area is predominately composed of single-family residential areas. A commercial area is under development in the southwest sector of this area. An elementary school is located in the western sector of the area.

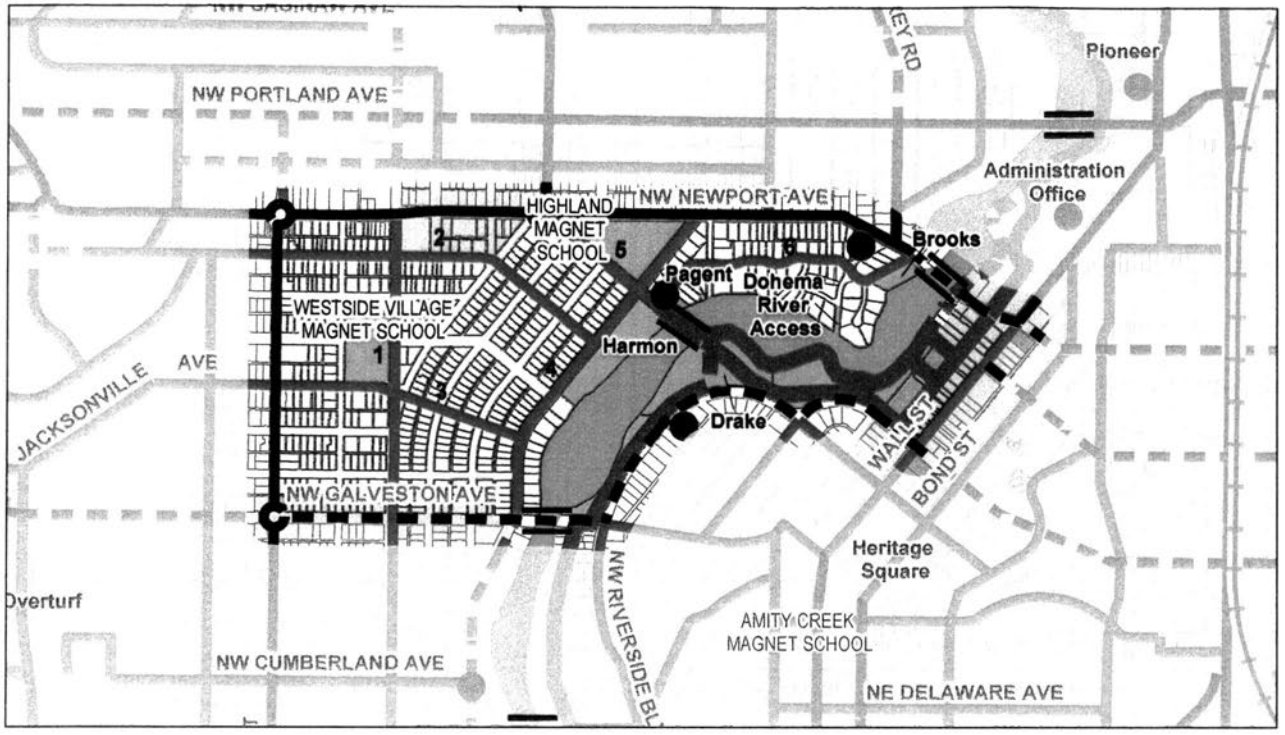
Opportunities:
A large portion of the area is within the NW Crossing development - a mixed-use development that strives to maximize non automobile travel opportunities.

Constraints:
Interface of the older community with the new development limits interconnection opportunities

Deficiencies:
As defined by "constraints".

Remedies:
Development of street corridors and accessways - Trail #5c is a key connection

N12
8/16/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

0 0.25

Miles

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DESCHUTES GEOgraphics

J. T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 13

October 20, 2006

Neighborhood: **N13**

• *Segment:*	• *Proposed:*	• *Length: (Feet)*	• *Type:*	Roadway	Trail	• *R.O.W.: (Existing)*	Public	Private	Easement	• *Improvement Need:*	Public	Private	• *Improvement Cost:*	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• *Location:*	• *Other Comments:*
1		2000		X			X							0	$0			12th Street	
2		2250		X			X							0	$0			Milwaukee Ave.	
3		1700		X			X							0	$0			Jacksonville Ave.	
4		2500		X			X							0	$0			Harmon Blvd	
5		2000		X			X							0	$0			Nashville Ave.	
6		1850		X			X							0	$0			Drake Road	

Total Length of Neighborhood System =		**12,300 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$0**	
Neighborhood Total All =	**$0**	

DESTINATIONS

Neighborhood Parks:	
	Harmon/Pagent
	Drake
	Brooks
Developed park facility	None
Undeveloped park facility	Dohema River Access
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	None
Schools:	Highland Magnet (old: Kenwood Elementary) School
	Westside Village Magnet (old: Kingston Elementary) School
Land Uses:	
Commercial	
Neighborhood	Newport & Galveston avenues
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
This older neighborhood on the west side of Bend is composed primarily of single-family residential land uses. Neighborhood commercial areas occur along Galveston and Newport Avenues. Newport Avenue defines the area to the north, 14th Street to the west, Galveston Ave. to the south and Wall Street to the east. A portion of downtown Bend is on the eastern boundary of this area. Several parks and schools occur within the area.

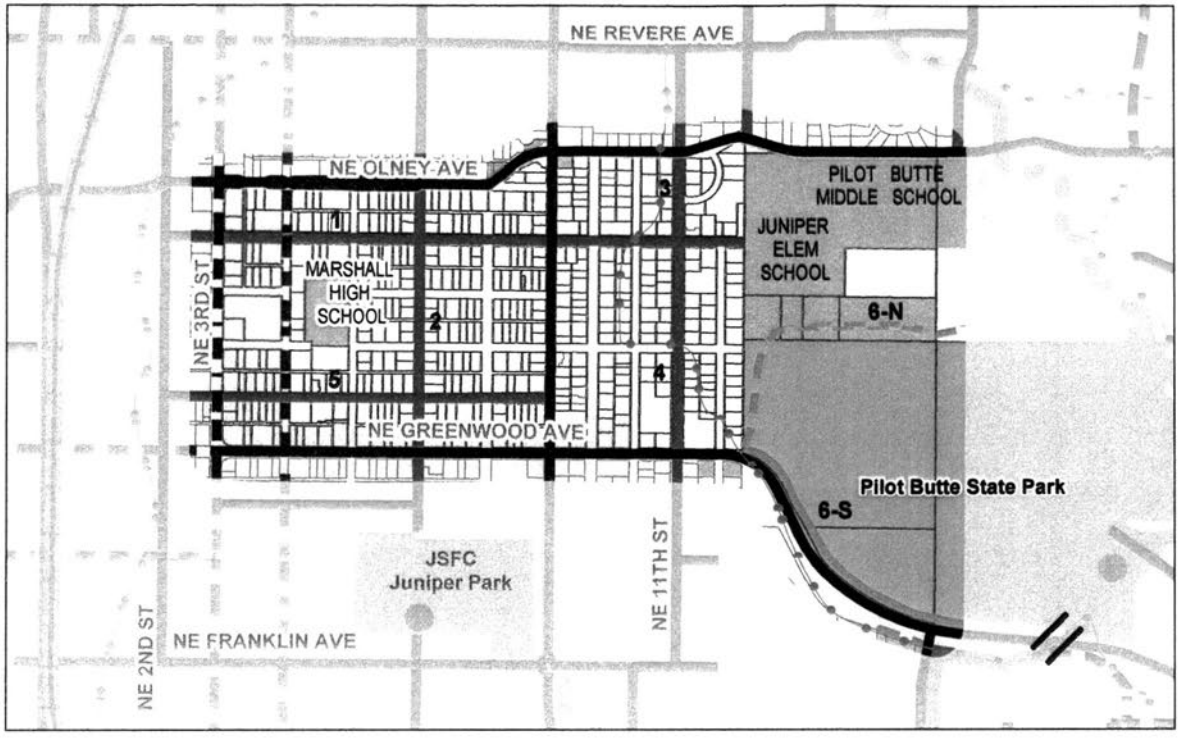
Opportunities:
This inner city neighborhood developed during an era of excellent street connectivity and good connections to all destinations. This neighborhood also is very close to schools, downtown shopping and employment opportunities.

Constraints:
The most significant constraint of this neighborhood is the division created by the river.

Deficiencies:
No deficiencies exist within this neighborhood.

Remedies:
None necessary.

N13
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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D. Quinlan / neigh_14.mxd

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 14

October 20, 2006

Neighborhood: **N14**

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		4000		X			X							0	$0			Norton Ave	
2		1850		X			X							0	$0			6th Street	
3		650		X			X							0	$0			11th Street	
4		1450		X			X							0	$0			11th Street	
5		2650		X			X							0	$0			Kearney	
6 S		1900			X		X							0	$0			Pilot Butte Loop Trail (S)	Trail loop complex around PB
6 N	X	2100			X		X				X			9	$24	$49,933		Pilot Butte Loop Trail (N)	Trail loop complex around PB

Total Length of Neighborhood System =	**14,600**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$49,933**	
Neighborhood Total Private Cost Estimate =	**$0**	
Neighborhood Total All =	**$49,933**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Pilot Butte State Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	Juniper Elementary School
	Pilot Butte Middle School
	Marshall High School
Land Uses:	
Commercial	
Neighborhood	Greenwood Ave.
Regional	3rd Street
	Greenwood Ave.
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:

This area is defined by 3rd Street to the west, Olney Avenue to the north, Pilot Butte State Park to the east and Greenwood Avenue (Highway 20) to the south. Low-density residential land uses compose a majority of the area. Commercial and high-density residential uses occur to the east of 3rd Street. Several schools and the State Park occur in the area.

Opportunities:

This inner city neighborhood developed during an era of excellent street connectivity and good connections to all destinations. This neighborhood also is very close to schools, downtown shopping and employment opportunities.

Constraints:

The most significant constraint of this neighborhood is the barrier created by Pilot Butte.

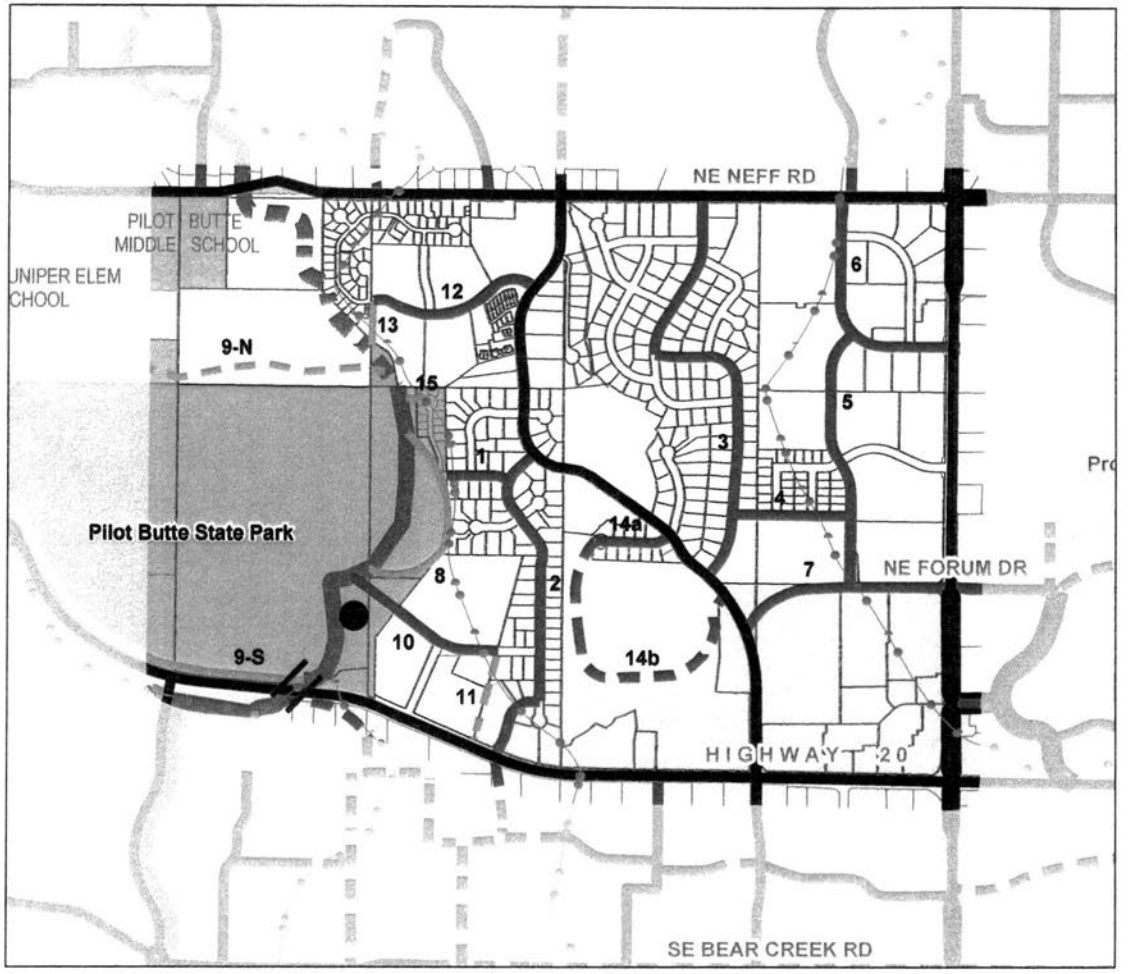
Deficiencies:

East-west connectivity around the butte.

Remedies:

Improvement to the trail system around Pilot Butte

N14
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

0.25 Miles

Quinlan / neigh_15.mxd

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 15

October 20, 2006

Neighborhood: **N15**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			550		X			X							0	$0			Derek Drive	
2			2650		X			X							0	$0			Azure/Savannah drives	
3			2650		X			X							0	$0			Paula/Williamson drives	
4			800		X			X							0	$0			Donegon Road	
5			1850		X			X							0	$0			Watt Way	
6			1850		X			X							0	$0			Medical Center Drive	
7			1300		X			X							0	$0			Forum Drive	
8			950			X		X							0	$0				Trail Loop around Park
9	S		900			X		X							0	$0				Sidewalk-Trail Loop
9	N	X	1450			X		X				X			9	$24	$34,478			Trail Loop norht side Butte
10			900		X			X							0	$0			Linnea	
11		X	600			X				X		X			7	$7	$4,142			Trail N. of Hwy 20
12			1200		X			X							0	$0			Lotus Dr	
13			350			X				X					0	$0				Trail S. of Lotus
14	a		500		X			X							0	$0			Lena Pl	
14	b	X	2800		X								X		3	$83		$233,230	(new street)	Sidewalks
15		X	200			X			X				X		8	$16		$3,256		New Trail

Total Length of Neighborhood System =	**21,500 L.F.**
Neighborhood Total Public Cost Estimate =	**$38,619**
Neighborhood Total Private Cost Estimate =	**$236,485**
Neighborhood Total All =	**$275,104**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Pilot Butte State Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-In the central and NE sector of the area
Schools:	Pilot Butte Middle School
Land Uses:	
Commercial	
Neighborhood	None
Regional	The Forum
Industrial	None
Other	Medical clinics in NW sector of area

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Pilot Butte State Park to the east, Olney Avenue to the north, 27th Street to the east and Highway 20 to the south defines this area. A regional shopping area is located in the southeast corner of the area, and support medical facilities to St Charles Hospital occur in the northeast corner of the area. Medium density residential areas are the dominant land use within this area. A middle school and Pilot Butte State Park occur in this area.

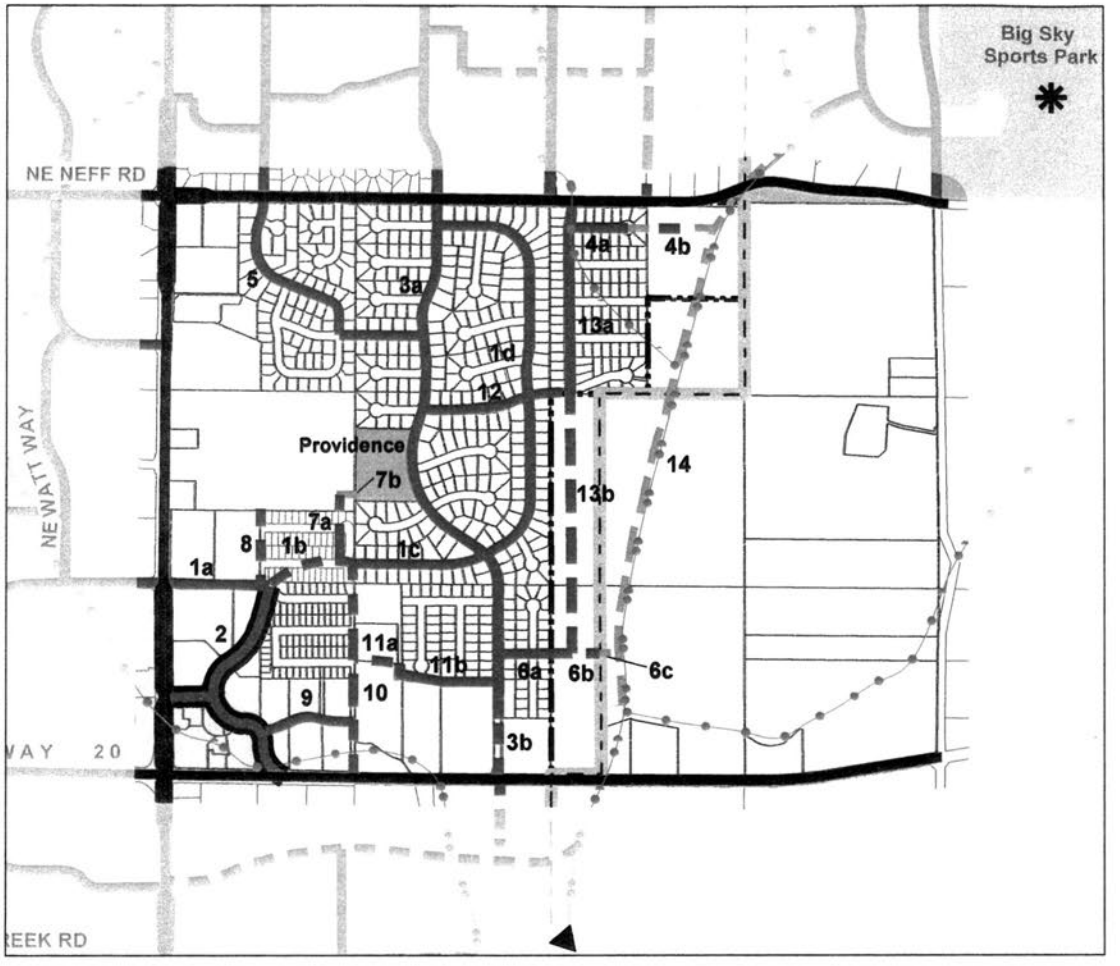
Opportunities:
The proximity to the hospital and medical clinic district as well as retail destinations along Highway 20. Good access to the Larkspur Trail and Hwy 20 undercrossing

Constraints:
Constrained by the butte on the west and the older street system with discontinuous street connectivity

Deficiencies:
Good non automobile corridors to the west and lack of a full street grid system in eastern sector

Remedies:
Completion of the trail system around the butte. Improvements to the street grid are limited due to existing development patterns

N15
8/15/2006



Neighborhood 16 Legend

- Connection Point
- Destination

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

0 0.25

Miles

D. Quinlan / neigh_16.mxd

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 16

October 20, 2006

Neighborhood: **N16**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		550		X				X						0	$0			Grand Way	
1	b	X	800		X								X		3	$83		$66,637	(future street)	Sidewalks
1	c		2100		X			X							0	$0			Locksley Drive	
1	d		1650		X			X							0	$0			Locksley Drive	
2			1750		X				X						0	$0			Bellevue Drive/Bronson	
3	a		400		X			X							0	$0			Providence Drive	
3	b	X	400		X			X					X		3	$83		$33,319	Providence Drive (future)	
4	a		650		X			X							0	$0			Collier Ct.	
4	b	X	400			X		X	X			X	X		8	$16	$3,256	$3,256	Trail to E of Collier Ct.	Trail/Street/Trail (?)
5			2150		X			X							0	$0			Tucson S. of Neff	
6	a		300		X			X							0	$0			Hampton	
6	b	X	150		X								X		3	$83		$12,494	(new street)	Sidewalks
6	c	X	200			X							X		8	$16		$3,256		Trail to canal trail
7	a	X	600		X								X		3	$83		$49,978	*[New Subd - no connection?]*	Sidewalks
7	b	X	100			X							X		8	$16		$1,628		Trail to Providence Park
8		X	500		X								X		3	$83		$41,648	(new street)	Sidewalks
9		X	650		X			X					X		3	$83		$54,143	Bronson	Sidewalk construction
10		X	400		X			X					X		3	$83		$33,319	Dalton	Sidewalk construction
11	a	X	950		X								X		3	$83		$79,131	(new street)	Sidewalks
11	b		700		X			X							0	$0			Aurora	
12			1000		X			X							0	$0			Manchester	
13	a		1300		X			X							0	$0			Glacier Ridge	
13	b	X	1800		X								X		3	$83		$149,933	Glacier Ridge	(new street)
14		X	3700			X			X				X		8	$16		$60,228	N. of Hwy 20 - Neff Road	Trail along canal

Total Length of Neighborhood System =	**23,200 L.F.**
Neighborhood Total Public Cost Estimate =	**$3,256**
Neighborhood Total Private Cost Estimate =	**$588,968**
Neighborhood Total All =	**$592,224**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Providence
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	The Southwest corner of area
Regional	West side of 27th - west of area
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:
Single-family residential land use dominates this neighborhood area. The area is defined by Highway 20 to the south, 27th Street to the west, the UGB to the east and Neff Road to the north. Providence Park occurs in the center of this area. Regional commercial uses occur in the southwest corner of the area.

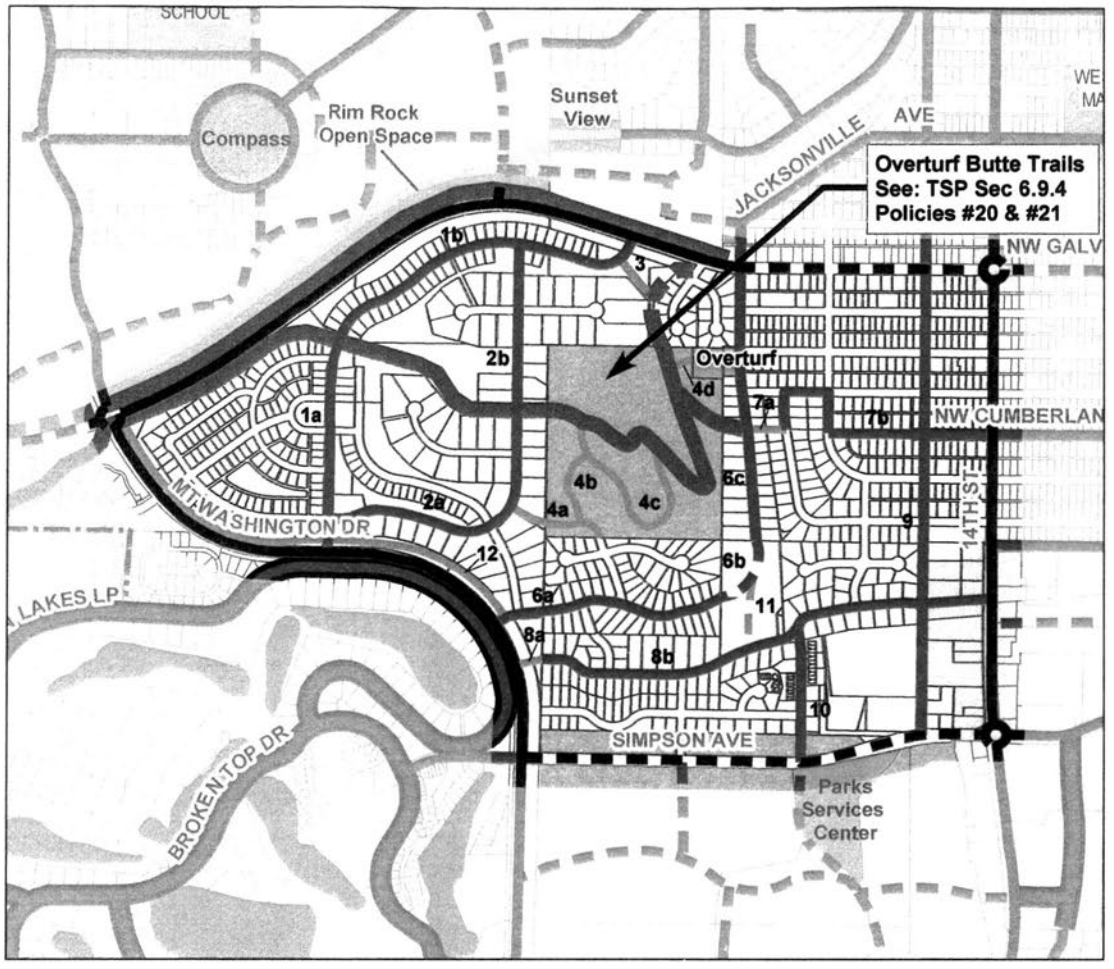
Opportunities:
Future development of vacant properties will provide opportunity to improve non automobile circulation.

Constraints:
More recently developed neighborhood developed during a period of circuitous and dead-end streets.

Deficiencies:
Lack of street system connectivity and accessways

Remedies:
Improvement of street grid although limited by existing development

N16
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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Miles

D. Quinlan / neigh_17.mxd

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 17

October 20, 2006

Neighborhood: **N17**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1350		X				X						0	$0			Flagline Drive	
1	b		2500		X				X						0	$0			Flagline Drive	
2	a		1300		X				X						0	$0			Skyliner Loop	
2	b		1500		X				X						0	$0			Skyliner Loop	
3			200			X			X	X					0	$0			Trail east of Flagline	Connection to Primary Trail
4	a		600			X		X		X					0	$0			Flagline to Gleneagles	Unpaved Butte Trail
4	b		780			X		X							0	$0			#4 a to E-W Primary Trail	Unpaved Butte Trail
4	c		2350			X		X							0	$0			#4 b to E-W Primary Trail	Unpaved Butte Trail
4	d		220			X		X							0	$0			Overturf Park to Primary Tr.	Unpaved Butte Trail
6	a		1600		X			X							0	$0			Troon Ave.	
6	b	X	400		X								X		3	$83		$33,319	Troon/17th	
6	c		1850		X			X							0	$0			17th Street	
7	a		250			X				X					0	$0				Trail between streets
7	b		1900		X										0	$0			Albany/Davenport/16th/Cumberland	
8	a		150			X				X					0	$0				Trail to Knoll
8	b		3200		X			X							0	$0			Knoll	
9			3050		X			X							0	$0			15th Street	Galveston to Simpson
10			900		X										0	$0			17th Street	Knoll to Simpson
11		X	650			X							X		9	$24		$15,456		Trail between streets

Total Length of Neighborhood System =	**24,750 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$48,774**
Neighborhood Total All =	**$48,774**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Overturf Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	14th Street commercial in SE sector of the area
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Mt. Washington Drive defines this area to the west, Simpson Avenue to the south, 14th Street to the east and Galveston to the north. Single-family residential areas define the land use character of the area. The commercial area along 14th Street and medium density residential developments occur in the south and southeast corner of the area.

Opportunities:

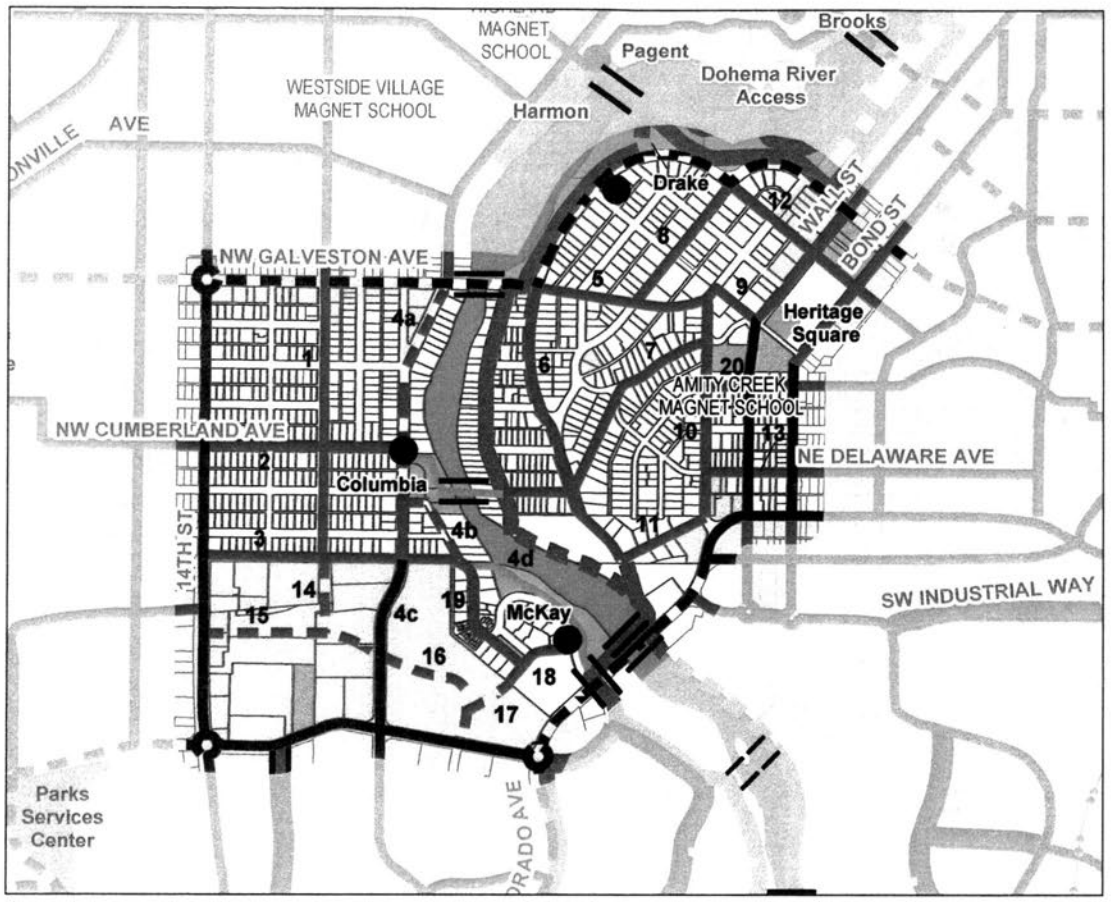
To provide street system connectivity and regional trail system.

Constraints:
The existing road system and the grade on Overturf Butte

Deficiencies:
Abundance of dead-end streets contribute to out-of-direction travel for non automobile movement

Remedies:
Completion of the #6b Street connection and improvement of trail #11 will improve neighborhood connectivity

N17
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Miles

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DESCHUTES GEOgraphics

J. T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 18

October 20, 2006

Neighborhood: **N18**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			1850		X			X							0	$0			12th Street	
2			1450		X			X							0	$0			Cumberland Ave.	
3		X	1700		X			X				X	X		3	$83	$70,802	$70,802	Commerce Ave	1/2 Public & 1/2 Private
4	a	X	1600		X			X				X			2	$42	$66,737		Harmon Blvd/Columbia St	Sidewalk E. side of street
4	b	X	650		X			X				X			2	$42	$27,112		Allen	Sidewalk E. side of street
4	c		1300		X			X							0	$0			Columbia St	Existing Bike Lanes on Local
4	d		1250			X		X							0	$0			Trail	Trail to & thru McKay Park
5			1200		X			X							0	$0			Tumalo Ave.	
6			2650		X			X							0	$0			Riverside Blvd	
7			1450		X			X							0	$0			Shasta/St Helens Pl.	
8			1050		X			X							0	$0			Congress St.	
9			450		X			X							0	$0			Broadway/Idaho	
10			1700		X			X							0	$0			Broadway S of Tumalo	
11			650		X			X							0	$0			Carlon Ave.	
12			1150		X			X							0	$0			Louisiana Ave.	
13			600		X			X							0	$0			Delaware	
14		X	700		X								X		3	$83		$58,307	12th Extension	
15		X	1150		X								X		3	$83		$95,791	(new street)	Sidewalks
16		X	800		X								X		3	$83		$66,637	(new street)	Sidewalks
17		X	350		X								X		3	$83		$29,154	(new street)	Sidewalks
18			500		X			X							0	$0			Bradbury	
19			850		X			X							0	$0			Allen	
20			600		X			X							0	$0			Georgia	

Total Length of Neighborhood System =	**25,650 L.F.**
Neighborhood Total Public Cost Estimate =	**$164,651**
Neighborhood Total Private Cost Estimate =	**$320,691**
Neighborhood Total All =	**$485,341**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Columbia
	McKay
	Hixon Park Block
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	None
Schools:	Amity Creek Magnet (old: Thompson Elementary) School
Land Uses:	
Commercial	
Neighborhood	14th St. & Galveston commercial and Shevlin Hixon mixed-use
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
This diverse area is bisected by the Deschutes River and is composed of single-family residential and light industrial and commercial uses on the west side of the river and low and medium density residential areas to the east of the river. Downtown Bend and historic Drake Park are to the north of this area. A mixed-use development is located in the south east corner of the area. Several parks and the Amity Creek School are in this area. Galveston Avenue and Riverside Boulevard define this area to the north, Colorado Avenue to the south, 14th Street to the west and Bond Street to the east

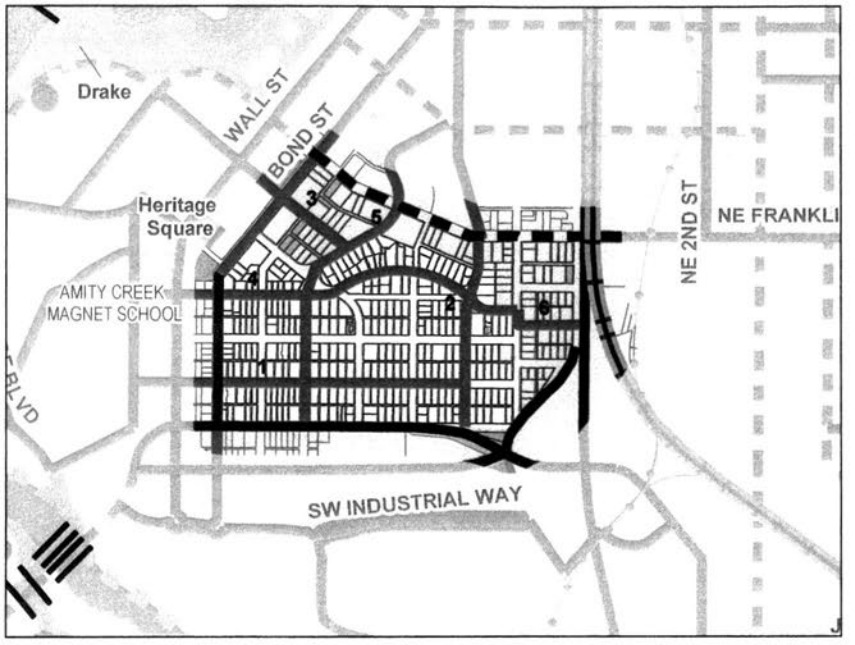
Opportunities:
This inner city neighborhood developed during an era of excellent street connectivity and good connections to all destinations. This neighborhood also is very close to schools, downtown shopping and employment opportunities.

Constraints:
The most significant constraint of this neighborhood is the division created by the river and the Industrial Zoned properties in the southwest part of the neighborhood.

Deficiencies:
Lack of sidewalks along the parallel street - "River Trail" system.

Remedies:
Completion of the sidewalk system along Harmon and Columbia streets

N18
8/15/2006



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Miles

D. Quinlan / neigh_19.mxd

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 19

October 20, 2006

Neighborhood: N19

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		1700		X			X							0	$0			Delaware Ave.	
2		2000		X			X							0	$0			Harriman St.	
3		550		X			X							0	$0			Lousisana	
4		1750		X			X							0	$0			Georgia	
5		2600		X			X							0	$0			Lava	
6		800		X			X							0	$0			Lake	

Total Length of Neighborhood System =		**9,400 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$0**	
Neighborhood Total All =	**$0**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	S. side of Franklin Ave.
Regional	None
Industrial	SW sector of the area
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:

Bond Street defines this area to the west, Franklin Avenue to the north, Colorado Avenue to the south and the Parkway to the east. This historic district is composed of single family residential areas with commercial land uses located along the north and east boundaries of the area.

Opportunities:

Proximity to the downtown retail and employment areas and good neighborhood street connectivity.

Constraints:

Parkway on the east side of neighborhood limits connections to the east of the neighborhood

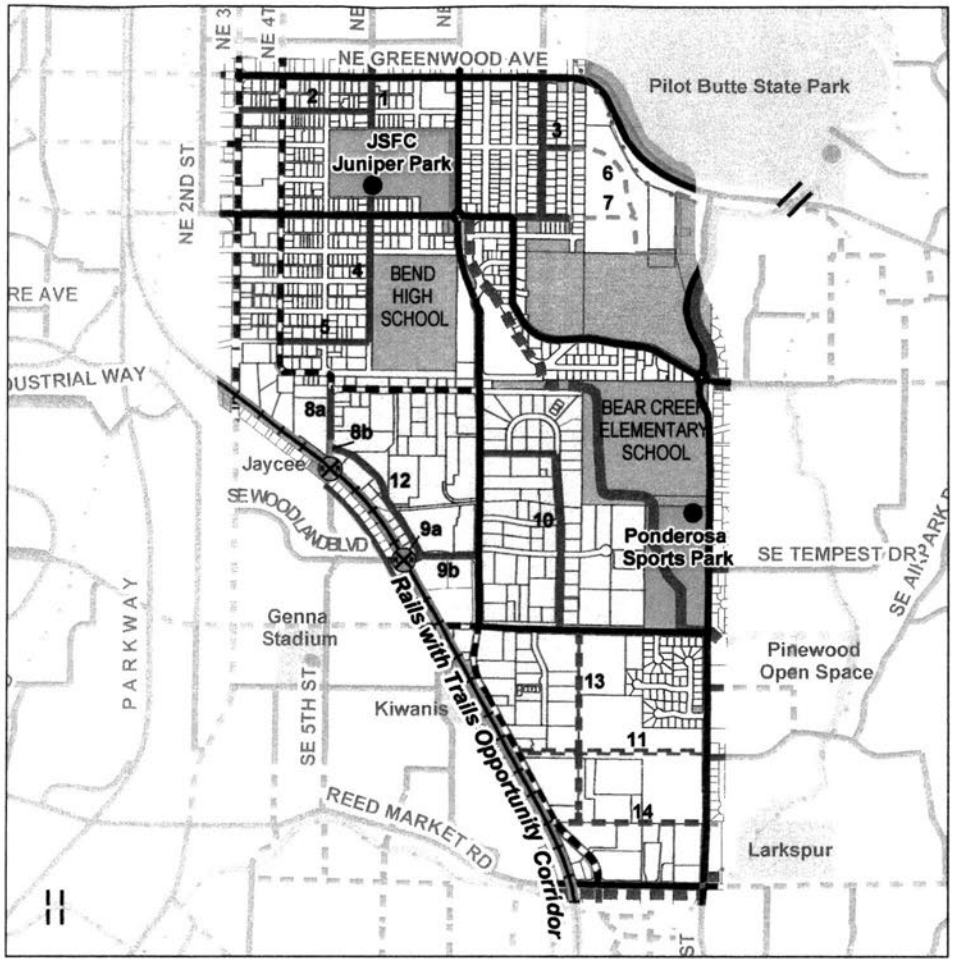
Deficiencies:

None specific to this neighborhood

Remedies:

None proposed

N19
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- RR Crossing Opportunity
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Miles

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 20

October 20, 2006

Neighborhood: **N20**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			550		X			X							0	$0			6th Street	
2			2250		X			X							0	$0			Irving Ave.	
3			2000		X			X							0	$0			11th Street	
4			1300		X			X							0	$0			6th Street	
5			900		X			X							0	$0			Burnside Ave	
6		X	1450		X				X			X			5	$1.15	$1,668		Hawthorne/Cemetery Rd	
7			400		X				X						0	$0			Franklin to Cemetery Rd	
7		X	300		X				X			X			5	$1.15	$345		Franklin to Cemetery Rd	New Trail
8	a	X	800		X			X				X			5	$1.15	$920		5th Street ROW	New Trail
8	b	X	1			X				X		X			16	$3,808	$3,808		Railroad grade crossing	Trail
9	a	X	1		X			X				X			16	$3,808	$3,808		Railroad grade crossing	Trail
9	b		800		X			X							0	$0			Woodlawn east of RR tracks	
10			2450		X					X					0	$0			Textron/Bridgeford	
11		X	1800		X								X		3	$83		$149,933	(new street)	Sidewalks
12			1500		X			X							0	$0			Logsden	
13		X	1950		X								X		3	$83		$162,428	(new street)	Sidewalks
14		X	1500		X								X		3	$83		$124,944	(new street)	Sidewalks

Total Length of Neighborhood System =		**19,952 L.F.**
Neighborhood Total Public Cost Estimate =	**$10,548**	
Neighborhood Total Private Cost Estimate =	**$437,305**	
Neighborhood Total All =	**$447,853**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Juniper Park and Swim Center
	Ponderosa Sports Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	Bend High School
	Bear Creek Elementary School
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	South and SW sector of the area
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:
This diverse area is defined by Greenwood to the north, 15th Street to the east, Reed Market Road to the south and the Railroad and 3rd Street to the west. The area is composed of a mix of low, medium and high-density residential uses in the northern sector of area, and commercial and industrial uses in the southern sector of the area. Several parks and schools occur in the area.

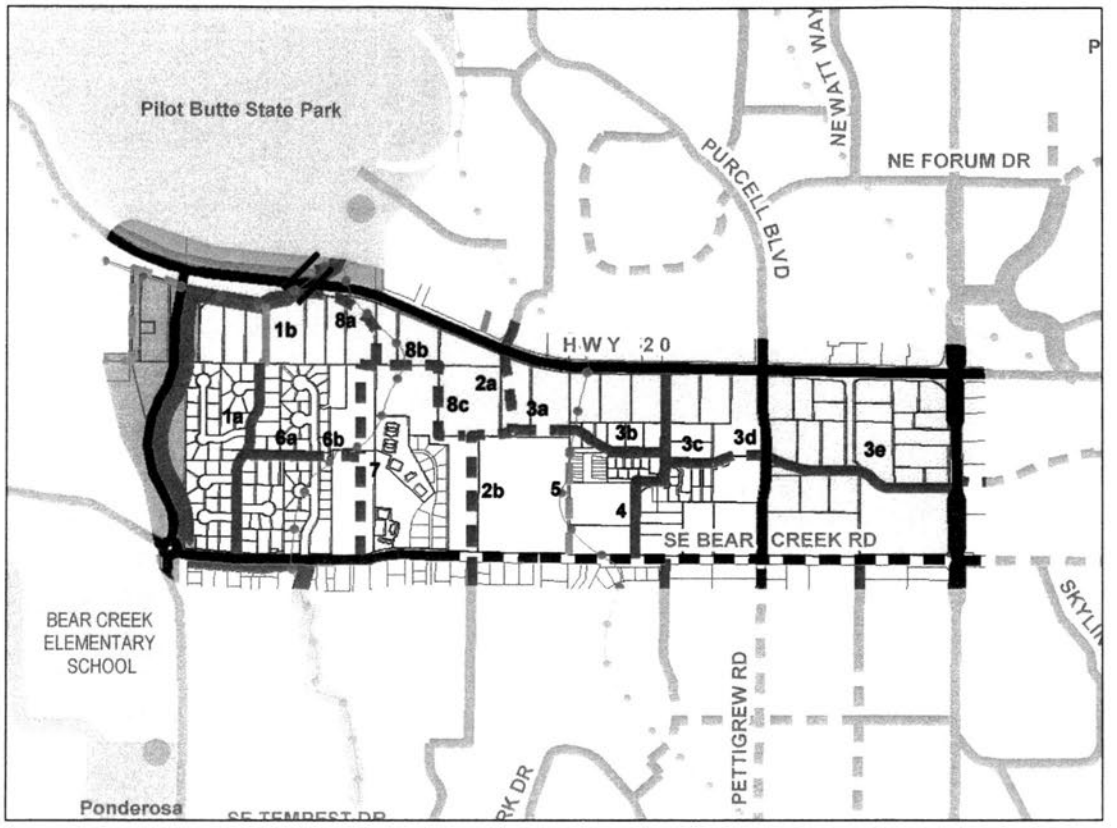
Opportunities:
Proximity to many destinations; retail, recreation, institutional and employment. Connection to Primary Trails

Constraints:
Railroad skirts the SW border of this neighborhood

Deficiencies:
Formal supplemental railroad crossings

Remedies:
Work with railroad to develop formalized railroad crossings.

N20
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 21

October 20, 2006

Neighborhood: **N21**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1300		X			X							0	$0			McCartney Drive	
1	b		400			X				X					0	$0			Trail connection	narrow, thru utility easement
2	a	X	550		X					X			X		3	$83		$45,813	Azure S. of Hwy 20 (future)	
2	b	X	800		X								X		3	$83		$66,637	(future street)	Sidewalks
3	a	X	450		X								X		3	$83		$37,483	(future street)	Sidewalks
3	b		600		X			X							0	$0			Carl Street	
3	c		250		X			X							0	$0			Don Street	
3	d	X	250		X			X					X		3	$83		$20,824	(future street)	Sidewalks
3	e		1300		X			X							0	$0			Twin Knolls Drive	
4			1300		X			X							0	$0			Dean Swift Road	
5		X	1050			X				X		X			7	$7	$7,248			Trail
6	a		600		X			X							0	$0			Matson	
6	b	X	150		X			X					X		3	$83		$12,494	(new street)	Sidewalks
7		X	1300		X			X					X		3	$83		$108,285	(new street)	Sidewalks
8	a	X	1050		X			X					X		3	$83		$87,461	(new street)	Sidewalks
8	b	X	550		X			X					X		3	$83		$45,813	(new street)	Sidewalks
8	c	X	650		X			X					X		3	$83		$54,143	(new street)	Sidewalks

Total Length of Neighborhood System =	**12,550 L.F.**
Neighborhood Total Public Cost Estimate =	**$7,248**
Neighborhood Total Private Cost Estimate =	**$478,953**
Neighborhood Total All =	**$486,201**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	Along Hwy 20
Industrial	East sector of the area
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

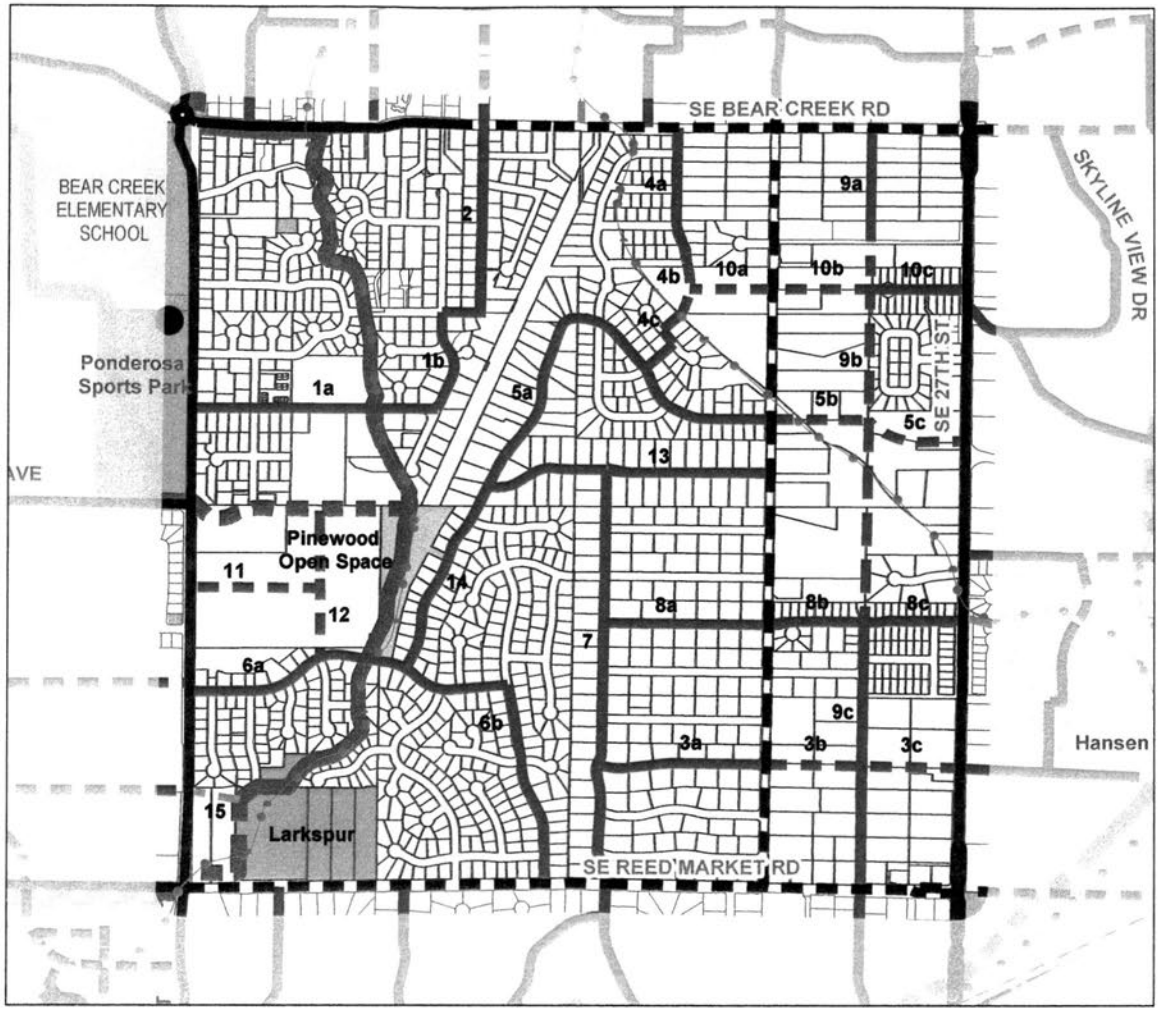
Description:
This area is defined by 15th Street to the west, Highway 20 to the north, 27th Street to the east and Bear Creek Road to the south. Low-density residential development is the dominant land use in the area. A regional commercial area occurs along Highway 20 on the northern edge of the area and an industrial area is located in the eastern side of the area.

Opportunities:
To improve street system connectivity with new neighborhoods

Constraints:
Hwy 20 on the northern edge, access control along the highway and existing developmen patterns.

Deficiencies:
Lack of a good street grid system - particularly as it relates to an east-west street system parallel to the highway.

Remedies:
Infill of the local street grid as the large vacant parcels develop within the interier of the neighborhood.



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 22

October 20, 2006

Neighborhood: **N22**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1200		X			X							0	$0			Tempest Drive	
1	b		400		X			X							0	$0			Craven Road	
2			900		X			X							0	$0			Cessna Drive	
3	a		1100		X			X							0	$0			Pinehaven	
3	b	X	650		X								X		3	$83		$54,143	(future street)	
3	c	X	600		X								X		3	$83		$49,978	(future street + trail?)	Sidewalks (+ trail connection?)
4	a		600		X			X							0	$0			Rawhide	
4	b	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
4	c		600		X			X							0	$0			Harley Lane	
5	a		4200		X			X							0	$0			Airpark	
5	b	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
5	c	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
6	a		1200		X			X							0	$0			Bronzewood Ave	
6	a	X	100		X			X				X			3	$83	$8,330		Bronzewood Ave-Trail Xing	**[PLUS Costs for St. Imp.]**
6	b		2250		X			X							0	$0			Bronzewood/Shadowood	
7			2800		X			X							0	$0			Fargo Lane	
8	a		1050		X			X							0	$0			Gardenia Ave.	
8	b		650		X			X							0	$0			Gardenia Ave.	
8	c		600		X			X							0	$0			Gardenia Ave.	
9	a		600		X			X							0	$0			Janalee Place	
9	b	X	2600		X								X		3	$83		$216,570	(future street)	Sidewalks
9	c		1900		X			X							0	$0			Daly Estates	
10	a	X	600		X								X		3	$83		$49,978	(future street)	Sidewalks
10	b	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
10	c		600		X			X							0	$0			Copperfield	

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
11	X	900		X								X		3	$83		$74,967	(future street)	Sidewalks
12	X	1000		X								X		3	$83		$83,296	(future street)	Sidewalks
13		1900		X			X							0	$0			Thomas	
14	X	100			X		X				X			7	$7	$690		Trail	Trail into Pinewood Park
15	X	350			X			X				X		8	$16		$5,697	15th St. to Larkspur Trail	Trail connection

Total Length of Neighborhood System =	**27,800 L.F.**
Neighborhood Total Public Cost Estimate =	**$9,020**
Neighborhood Total Private Cost Estimate =	**$751,199**
Neighborhood Total All =	**$760,219**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Senior Center adjacent to the Larkspur Park
Undeveloped park facility	Pinewood
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-In the west central sector of the area
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:
15th Street to the west, Bear Creek Road to the north, 27th Street to the east and Reed Market Road to the south define this area. The major land use in the area is single-family residential development. The Bend Senior Center is located in this neighborhood serving several adajacent, senior-dominated populated areas. There are a couple of ASIs in the western sector of this area.

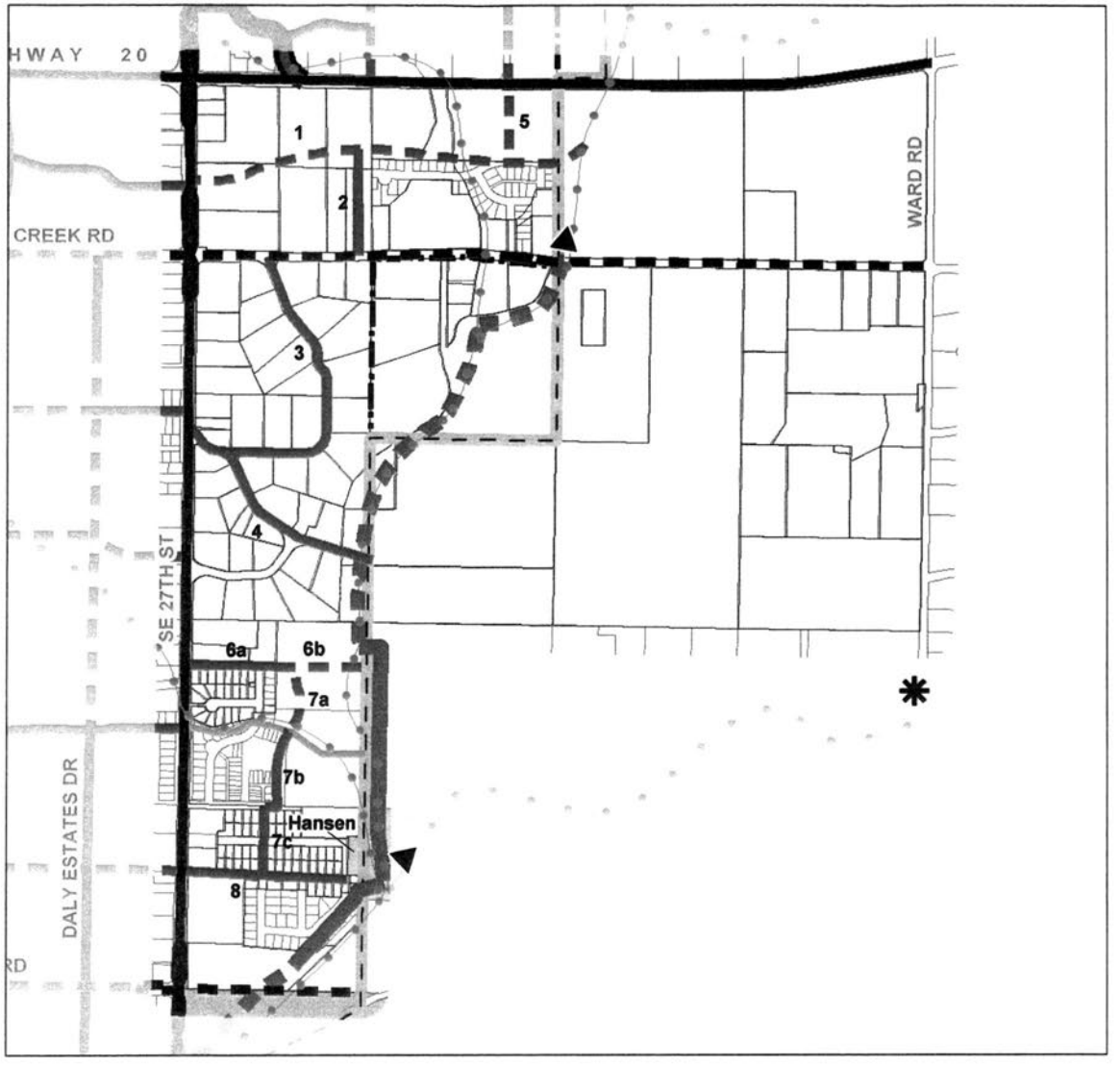
Opportunities:
Emerging development along the west side of 27th Street offers many opportunities to provide an improved street grid to the east

Constraints:
Existing development and airstrip create barriers to travel within the neighborhood

Deficiencies:
No intersecting public street system along the 27th St. corridor

Remedies:
Development of the local street grid with the future subdivisions

N22
8/15/2006



Neighborhood 23 Legend

- Connection Point
- Destination

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 23

October 20, 2006

Neighborhood: **N23**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		X	2650		X								X		3	$83		$220,735	(future street)	Sidewalks
2		X	650		X				X				X		3	$83		$54,143	(future street)	Sidewalks
3			2000		X			X							0	$0			Skyline View Drive	
4			1600		X			X							0	$0			Dove Lane	
5		X	600		X								X		3	$83		$49,978	(future street)	Sidewalks
6	a		600		X			X							0	$0			Darnell	
6	b	X	650		X								X		3	$83		$54,143	(future street)	Sidewalks
7	a	X	500		X								X		3	$83		$41,648	(future street)	Sidewalks
7	b		500		X			X							0	$0			Darla Pl	
7	c		650		X			X							0	$0			Darla Pl	
8			1100		X			X							0	$0			Starlight	

Total Length of Neighborhood System =	**11,500**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$420,646**	
Neighborhood Total All =	**$420,646**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	Hansen Park
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:

This area is defined by 27th Street to the west, Highway 20 to the north the UGB to the east and Reed Market Road to the south. The area is dominated by low-density residential developments.

Opportunities:

To develop connections to the regional trail system

Constraints:

Bounded by the UGB and major canal system on the east

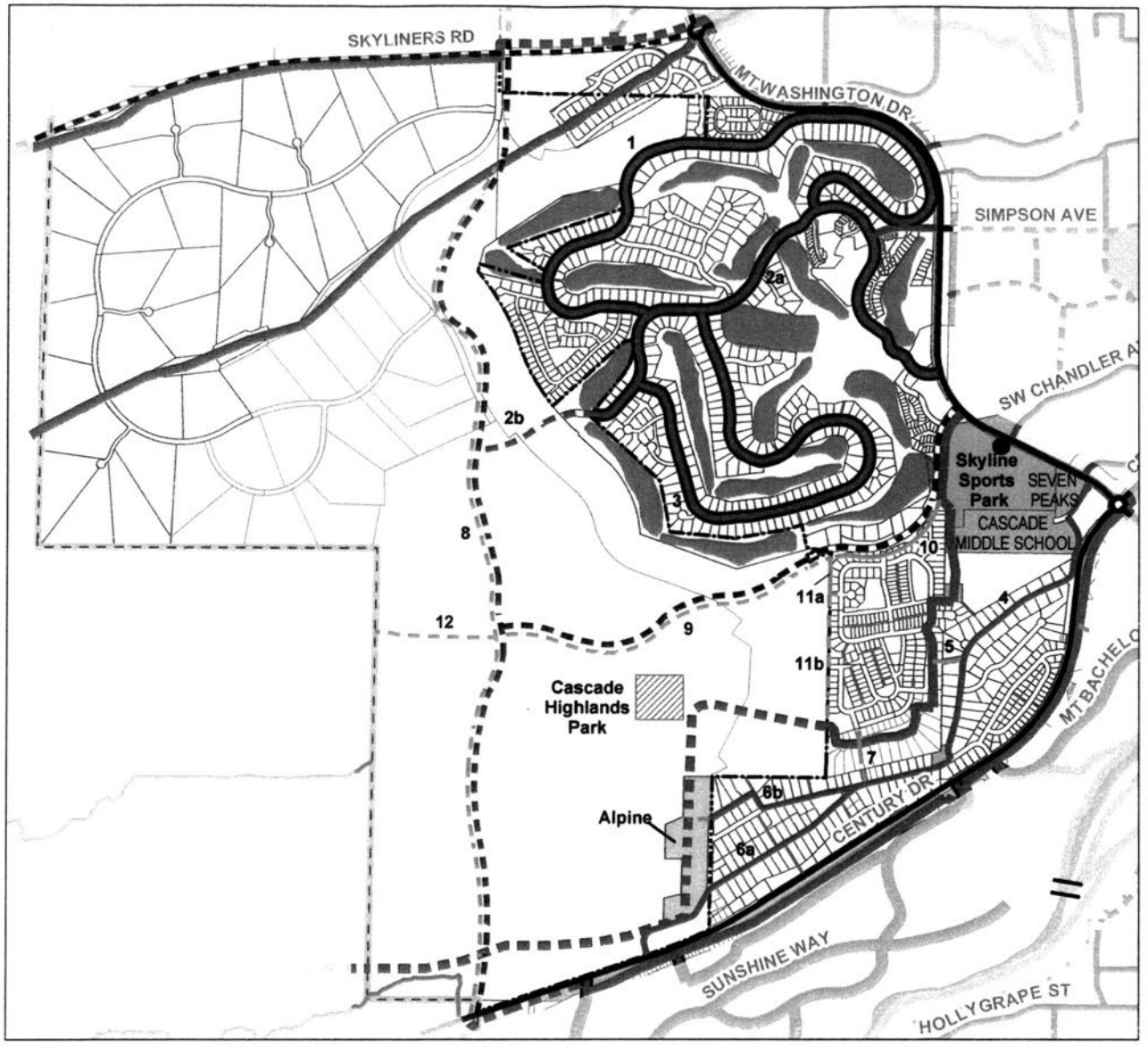
Deficiencies:

Lack of a good street grid system

Remedies:

Emerging subdivisions will add to the street grid and accessway system

N23
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 24

October 20, 2006

Neighborhood: **N24**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			9250		X				X						0	$0			Green Lakes Loop	
2	a		6350		X				X						0	$0			Broken Top Dr	
2	b	X	200		X								X		3	$83		$16,659	Broken Top Dr (future)	
3			7500		X				X						0	$0			Tam McCarthur Loop	
4			4000		X				X						0	$0			West/East Campbell roads	
5		X	50			X		X				X			2	$42	$2,086		Trail	Walkway past fire gate
6	a		3250		X			X							0	$0			West Campbell	
6	b		3000			X		X							0	$0			Cartmill/Kemple	
7		X	600			X						X			8	$16	$9,767			Trail between streets
8		X	10900			X							X		8	$16		$177,427		Trail parallel to road
9		X	3950			X							X		8	$16		$64,297		Trail parallel to road
10			2550			X			X						0	$0				Trail parallel to road
11	a		550			X			X						0	$0				Trail
11	b	X	1500			X							X		8	$16		$24,417		Trail
12		X	1550			X			X				X		8	$16		$25,231		Trail

Total Length of Neighborhood System =		**55,200 L.F.**
Neighborhood Total Public Cost Estimate =	**$11,852**	
Neighborhood Total Private Cost Estimate =	**$308,031**	
Neighborhood Total All =	**$319,883**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Skyline Sports Park
Undeveloped park facility	Alpine
Potential park facility	Cascade Highlands Park (private)
Other Open Space:	
Golf course	Broken Top
Deschutes River:	None
ASI*	None
Schools:	Cascade Middle School
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:
This area is composed of low-density residential development in the eastern sector and undeveloped land within the Urban Reserve Area to the west. A golf course is located within one of the residential areas. Skyline Sports park (regional) and an undeveloped park and Cascade Middle School are located in the area. The area is defined by Skyliners Road to the north, Mt. Washington Drive to the east, Century Drive to the south and the UGB to the west.

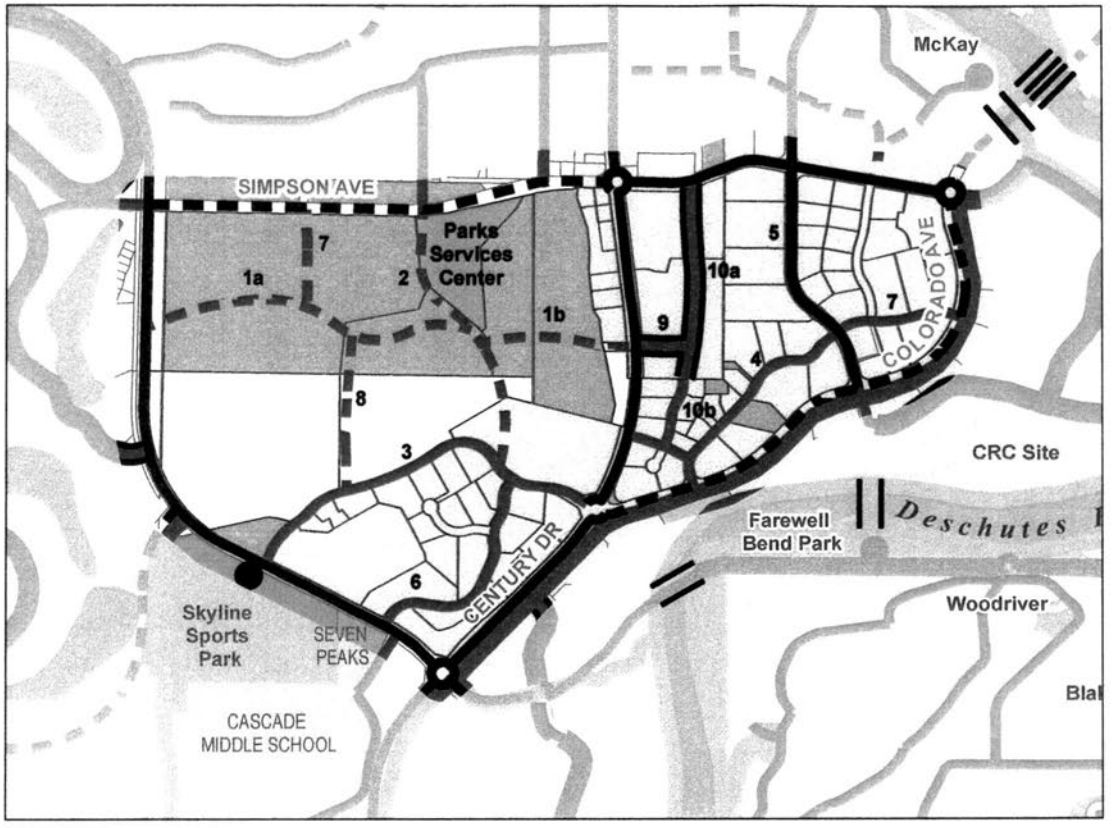
Opportunities:
Connection to the forest service trail system to the west. Convenient neighborhood connections to the regional park and middle school.

Constraints:
Gated community and private street system.

Deficiencies:
Lack of public street system.

Remedies:
New subdivisions are required to provide public accessway and trail easements.

N24
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 25

October 20, 2006

Neighborhood: **N25**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a	X	1850		X								X		3	$83		$154,098	(future street)	Sidewalks
1	b	X	1050		X								X		3	$83		$87,461	(future street)	Sidewalks
2		X	2000		X								X		3	$83		$166,593	(future street)	Sidewalks
3			2250		X			X							0	$0			Chandler Ave.	
4			1700		X			X							0	$0			Emkay Dr	
5			1700		X			X							0	$0			Columbia Street	Bike Lanes on Local St
6			1500		X			X							0	$0			Yates	
7			650		X										0	$0			Emkay Dr	
8		X	1200		X								X		3	$83		$99,956	(future street)	Sidewalks
9			300		X				X						0	$0			Unamed St	
10	a		1100		X				X						0	$0			(future street)	Sidewalks
10	b		750		X			X							0	$0			13th St	

Total Length of Neighborhood System =	**16,050 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$508,107**
Neighborhood Total All =	**$508,107**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Parks Service Center (Maintenance Yard Facility)
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-Along the west edge of the area
Schools:	None
Land Uses:	
Commercial	
Neighborhood	Mixed use and commercially zoned area.
Regional	None
Industrial	Light industrial/professional office in area
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:

This area is defined by Simpson Avenue to the north, Mt. Washington Drive to the west, Century Drive to the south and east. The area is composed of a mix of industrial and commercial areas. The neighborhood commercial area associated with 14th Street is within this area.

Opportunities:

The (now closed) county dump site offers a potential residential area development site recovery that would be very close to employment opportunities.

Constraints:

Large industrial development areas do not provide for a comprehensive system of local streets. Old quarry site may take years to redevelop.

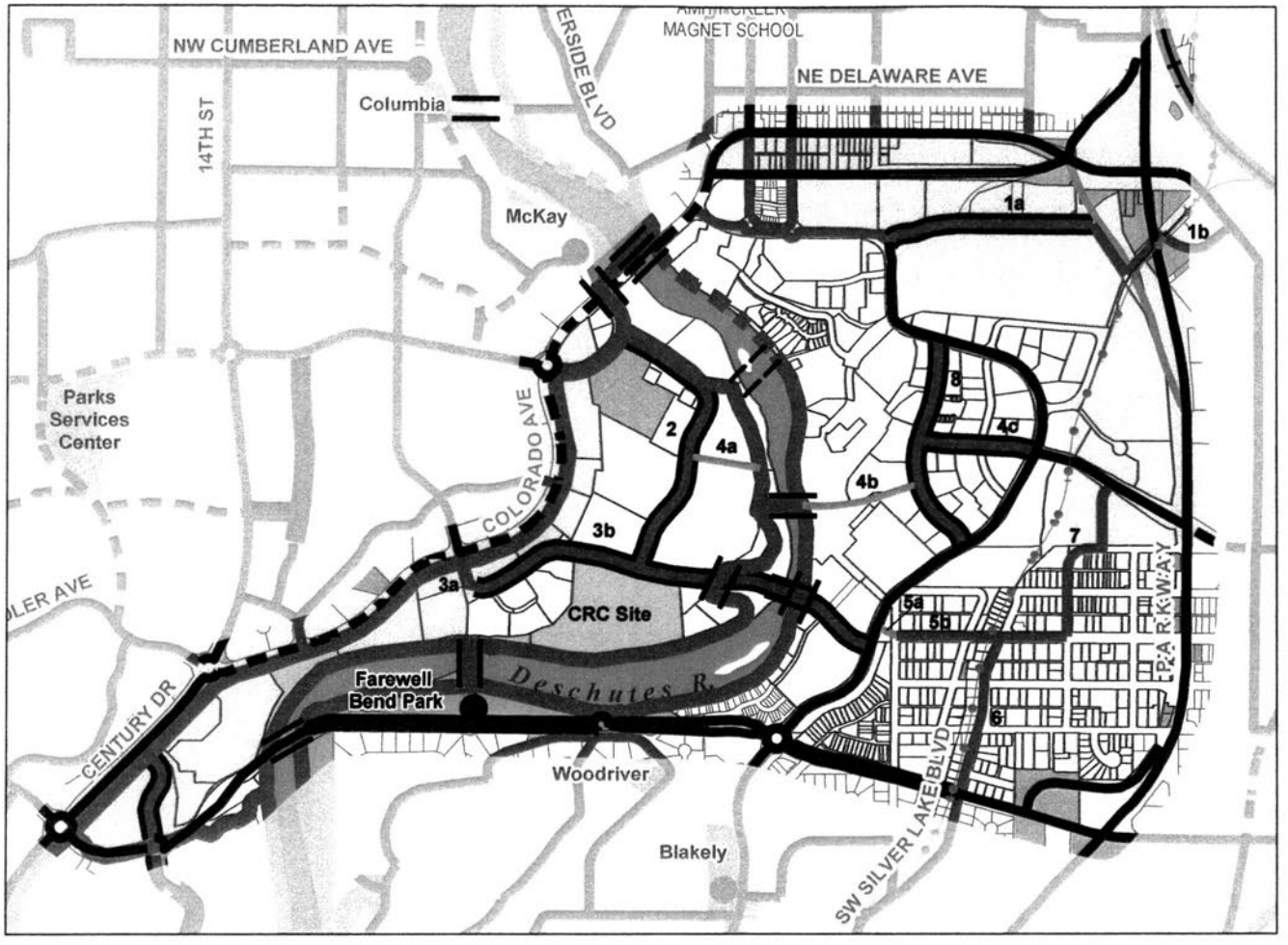
Deficiencies:

Large blocks of land don't provide opportunities for non automobile travel.

Remedies:

Longer-term redevelopment of properties may offer opportunities to enhance the local street grid and/or to develop accessways.

N25
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 26

October 20, 2006

Neighborhood: **N26**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1450		X				X						0	$0			Industrial Way	
1	b		1300		X				X						0	$0			Division/Aune	
2			2500		X				X						0	$0			Shevlin-Hixon Drive	
3	a		300		X				X						0	$0			Columbia Street	
3	b		3000		X				X						0	$0			Columbia Street	
4	a		650			X				X					0	$0				Trail to amphitheater
4	b		850			X				X					0	$0				Trail E. of Old Mill Comm.
4	c		800		X				X						0	$0			Wilson Ave.	
5	a		250			X				X					0	$0			Trail to top of ridge	Existing gravel
5	b		1050		X			X							0	$0			Roosevelt Ave.	
6			1100		X			X							0	$0			Silverlake Blvd	
7			1400		X			X							0	$0			Hill Street	
8			1100		X				X						0	$0			Bluff Dr	

Total Length of Neighborhood System =	**15,750 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$0**
Neighborhood Total All =	**$0**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Farewell Bend
Undeveloped park facility	Riverbend Park & Community Recreation Center Site
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	Old Mill commercial / office center
Industrial	NE sector of the area
General	Outdoor Performing Arts Amphitheater

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

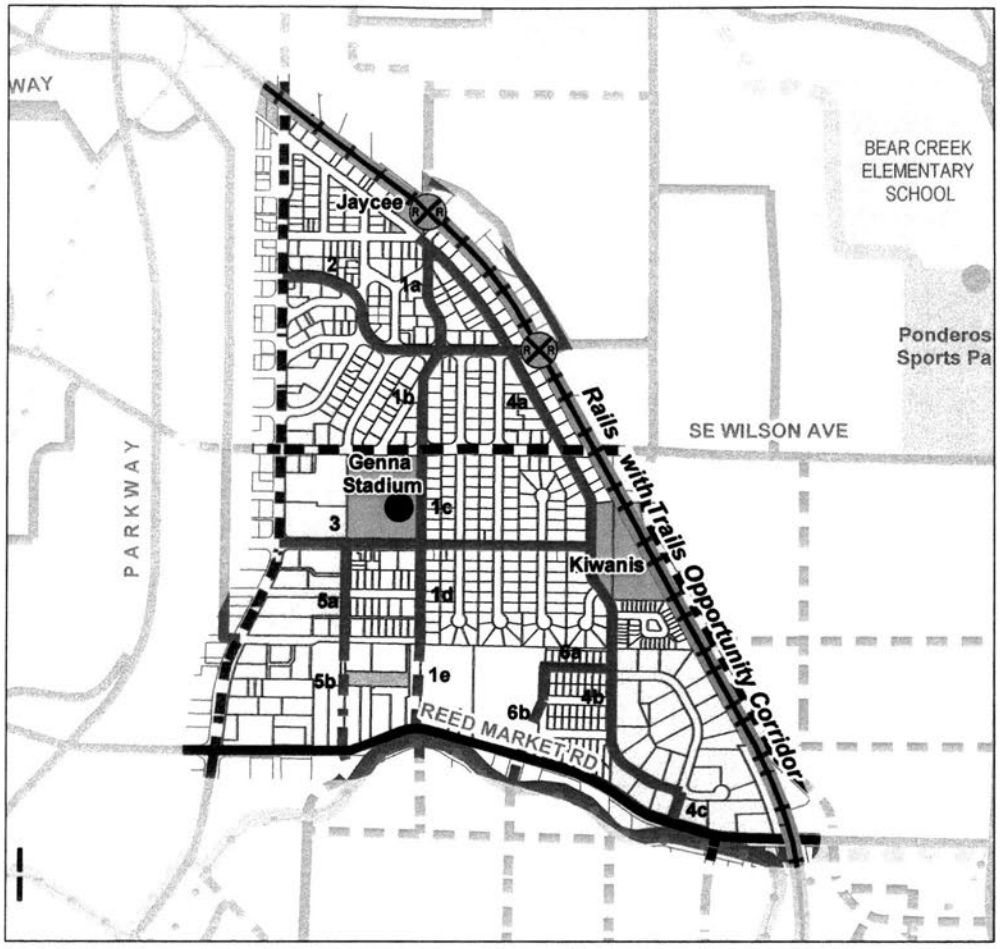
Description:
This area is defined Century Drive to the west, Reed Market Road to the south, the Parkway to the east and Colorado Avenue to the north. The dominant land use within this area is a recent regional mixed-use development that is bisected by the Deschutes River. A regional outdoor performing arts amphitheater also occurs in this area. This area also includes low and medium density residential area in the southeast sector and an industrial area in the northeast sectors.

Opportunities:
The developer has sought to optimize non automobile travel to access emerging mixed-use development; including retail, employment and residential areas.

Constraints:
River limits east-west movements

Deficiencies:
None specific to this neighborhood

Remedies:
Developer of the Old Mill is making significant effort to enhance bike-ped travel with trail enhancements, pathways, bridges and other facility enhancements.



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- RR Crossing Opportunity
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 27

October 20, 2006

Neighborhood: N27

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a		1100		X			X							0	$0			5th St	
1	b		650		X			X							0	$0			Edgewater/5th	
1	c		650		X			X							0	$0			5th St	
1	d		650		X			X							0	$0			5th St	
1	e	X	650		X								X		3	$83		$54,143	(future street)	
2			1850		X			X							0	$0			Woodland Blvd.	
3			2100		X			X							0	$0			Roosevelt	
4	a		1750		X			X							0	$0			Centennial St	
4	b		3050		X			X							0	$0			Centennial St	
4	c		200		X			X							0	$0			Centennial St	
5	a		650		X			X							0	$0			4th St	
5	b	X	750		X								X		3	$83		$62,472	4th St	
6	a		900		X			X							0	$0			Gleneden/Herald	
6	b	X	250		X								X		3	$83		$20,824	(future street)	Sidewalks

Total Length of Neighborhood System =		**15,200 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$137,439**	
Neighborhood Total All =	**$137,439**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Jaycee
	Kiwanis
	Genna Stadium
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	In west sector of the area along 3rd street
Industrial	SE sector of the area
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Medium density residential development is the dominant land use in this area. The western area is composed of commercial uses associated with 3rd Street. An industrial area occurs in the southeast corner of the area. This neighborhood area is defined by 3rd Street to the west, the railroad to the north and east and Reed Market Road to the south.

Opportunities:
Good proximity to central commercial corridor on the west and industrial zoned employment areas to the east.

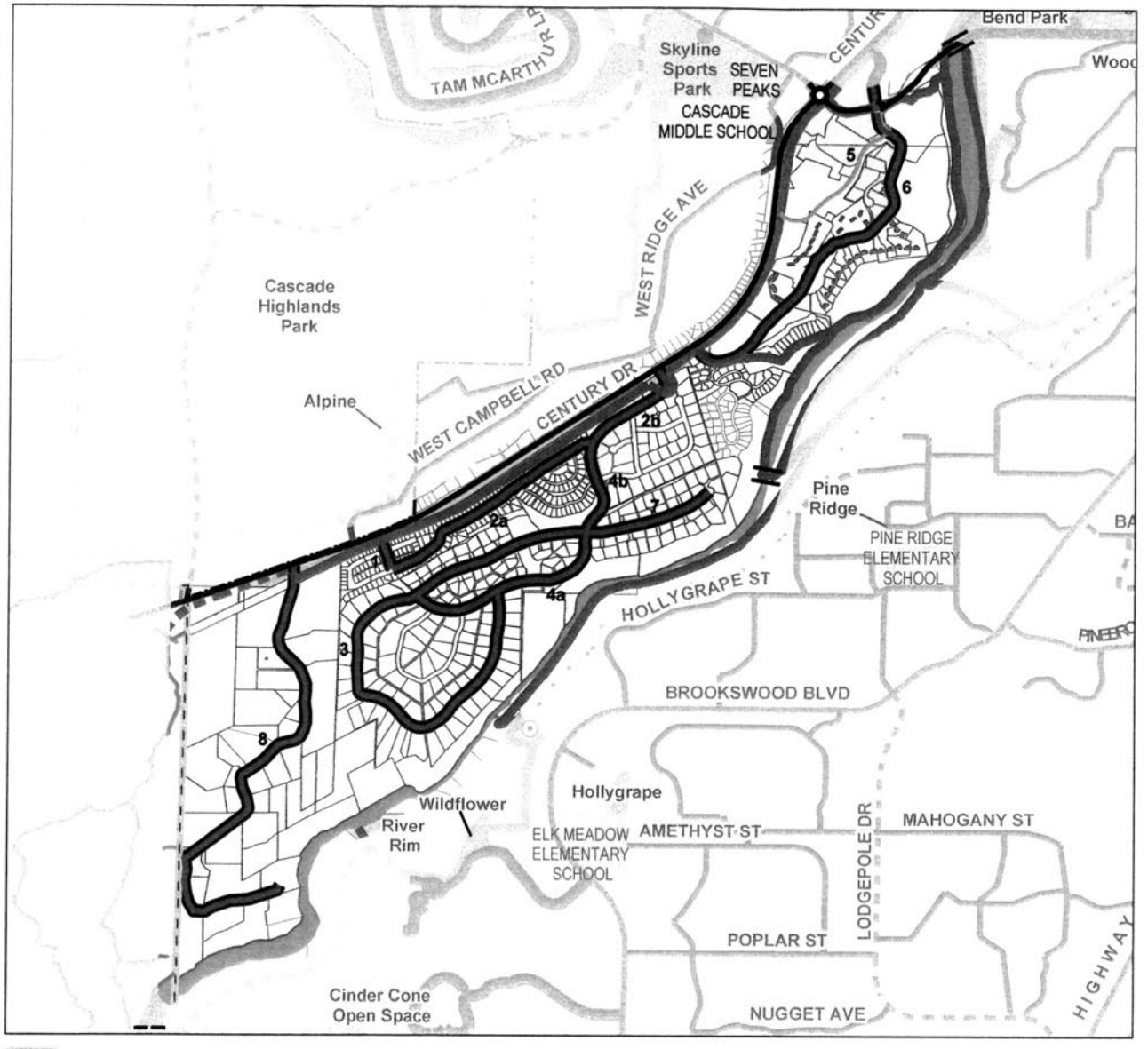
Constraints:
Neighborhood bounded on the east by the railroad

Deficiencies:
Limited street connections to the south and bridging the railroad barrier that diagonals through the neighborhood

Remedies:

Development of the local street grid to the south as new development comes on line also improved, formal railroad crossings to the east (see also N-20).

N27
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 28

October 20, 2006

Neighborhood: **N28**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			400		X				X						0	$0			Braeburn St.	
2	a		2800		X				X						0	$0			Brookside	
2	b		1100		X				X						0	$0			Mammoth Drive	
3			6550		X				X						0	$0			Sunshine Way	
4	a		2650		X				X						0	$0			Mammoth Drive	
4	b		1050		X				X						0	$0			Mammoth Drive	
5		X	1950			X				X		X			5	$1.15	$2,243			Trail to Mt. Bach. Village
6			4000		X				X						0	$0			Mt Bachelor Dr	
7			1550		X				X						0	$0			Sunshine N. of Mammoth	
8			6050		X				X						0	$0			Bachelor View Road	

Total Length of Neighborhood System =	**28,100 L.F.**
Neighborhood Total Public Cost Estimate =	**$2,243**
Neighborhood Total Private Cost Estimate =	**$0**
Neighborhood Total All =	**$2,243**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River
Schools:	None
Land Uses:	
Commercial	
Neighborhood	Mt. Bachelor Village
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

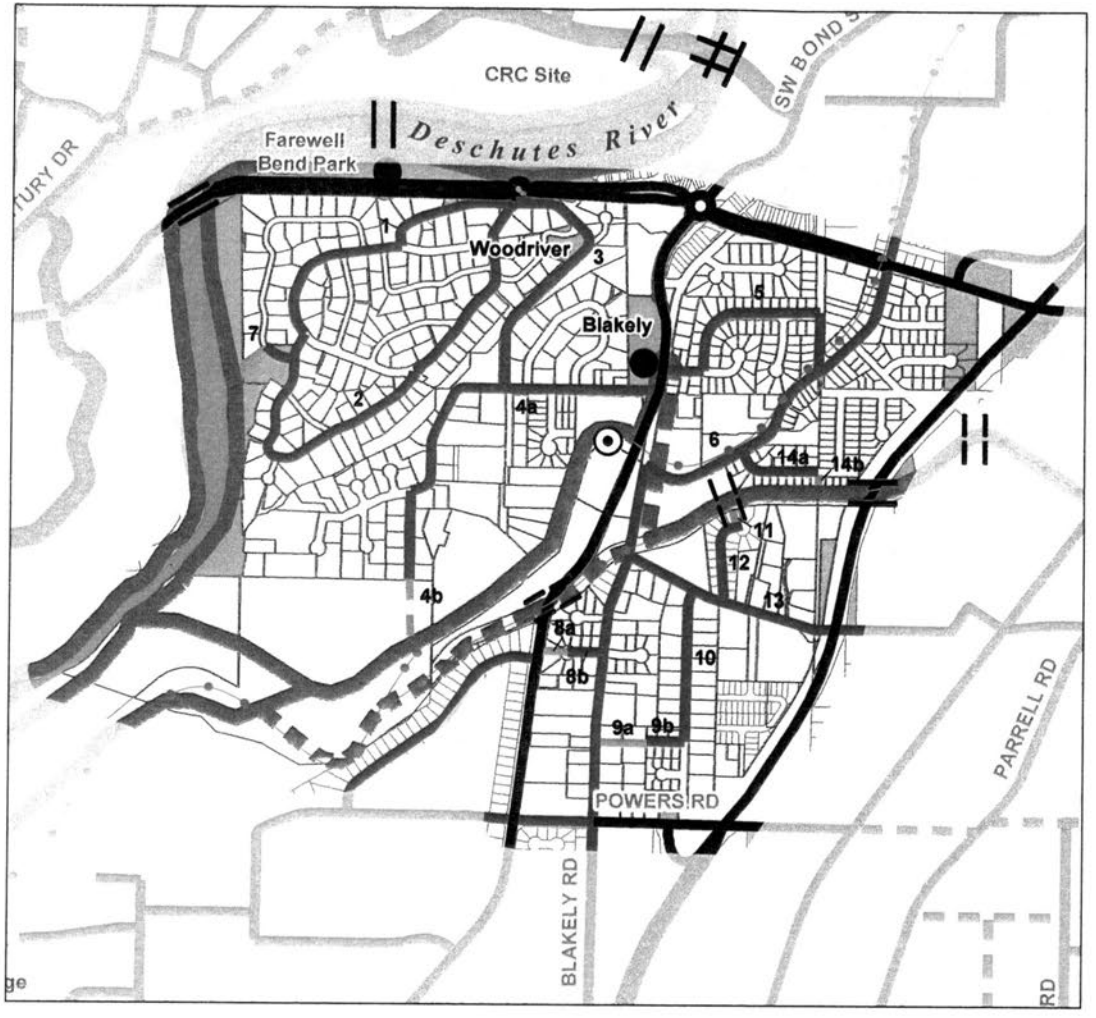
Description:
This area is defined by Century Drive to the north, the UGB to the west, the Deschutes River to the east and Reed Market Road to the north. This area is composed of low-density residential developments. US Forest Service land occurs to the west of this neighborhood area.

Opportunities:
Area is largely already developed - mostly with private roadway system. Large commercially zoned area, yet undeveloped is situated within the center of neighborhood

Constraints:
Century Drive Hwy on west and river canyon on the east

Deficiencies:
Lack of connections to adjoining neighborhoods

Remedies:
Many remedy opportunities to improve non automobile travel are now blocked by existing development. There are two private common areas that could improve neighborhood access to the river trail system.



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 29

October 20, 2006

Neighborhood: **N29**

• Segment:		• Proposed:	• Length: (Feet)	•Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			2650		X				X						0	$0			Alderwood Circle	
2			2650		X				X						0	$0			Ashwood Drive	
3			1850		X				X						0	$0			Woodriver Drive	
4	a		2650		X			X							0	$0			McClellan Road/Milo Ave.	
4	b	X	400			X		X					X		8	$16		$6,511		Future Trail
5			700		X			X							0	$0			Forest Grove Drive	
6			2500		X			X							0	$0			Silver Lake Blvd.	
7			300			X		X							0	$0				Trail between str & park
8	a	X	100			X		X				X			4	$0.13	$13		Brookswood to "12b"	Existing Trail
8	b		250		X			X							0	$0			Old Rock House Road	
9	a	X	350			X						X			5	$1.15	$403			Trail between streets
9	b		250		X										0	$0			Cumulus	
10			1050		X										0	$0			Duncan	
11		X	100			X						X			8	$16	$1,628			Trail to Canal
11		X	100			X						X			12	$1,271	$127,126			Canal **Bridge**
12			100		X										0	$0			Tall Tree	
13			1450		X										0	$0			Badger	
14	a		650		X			X							0	$0			Garfield	
14	b	X	100			X		X				X			9	$24	$2,378		Trail	Bet. Garfield & Canal Tr.

Total Length of Neighborhood System =	**18,200**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$131,546**	
Neighborhood Total Private Cost Estimate =	**$6,511**	
Neighborhood Total All =	**$138,058**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Woodriver, Farewell Bend
	Blakely Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Several parks are located in this neighborhood area. The area is defined by Reed Market Road to the north, the Deschutes River to the west, the Parkway to the east and Powers Road to the south. The dominant land use in the area is low-density residential with an area of medium density residential located in the eastern sector of the area.

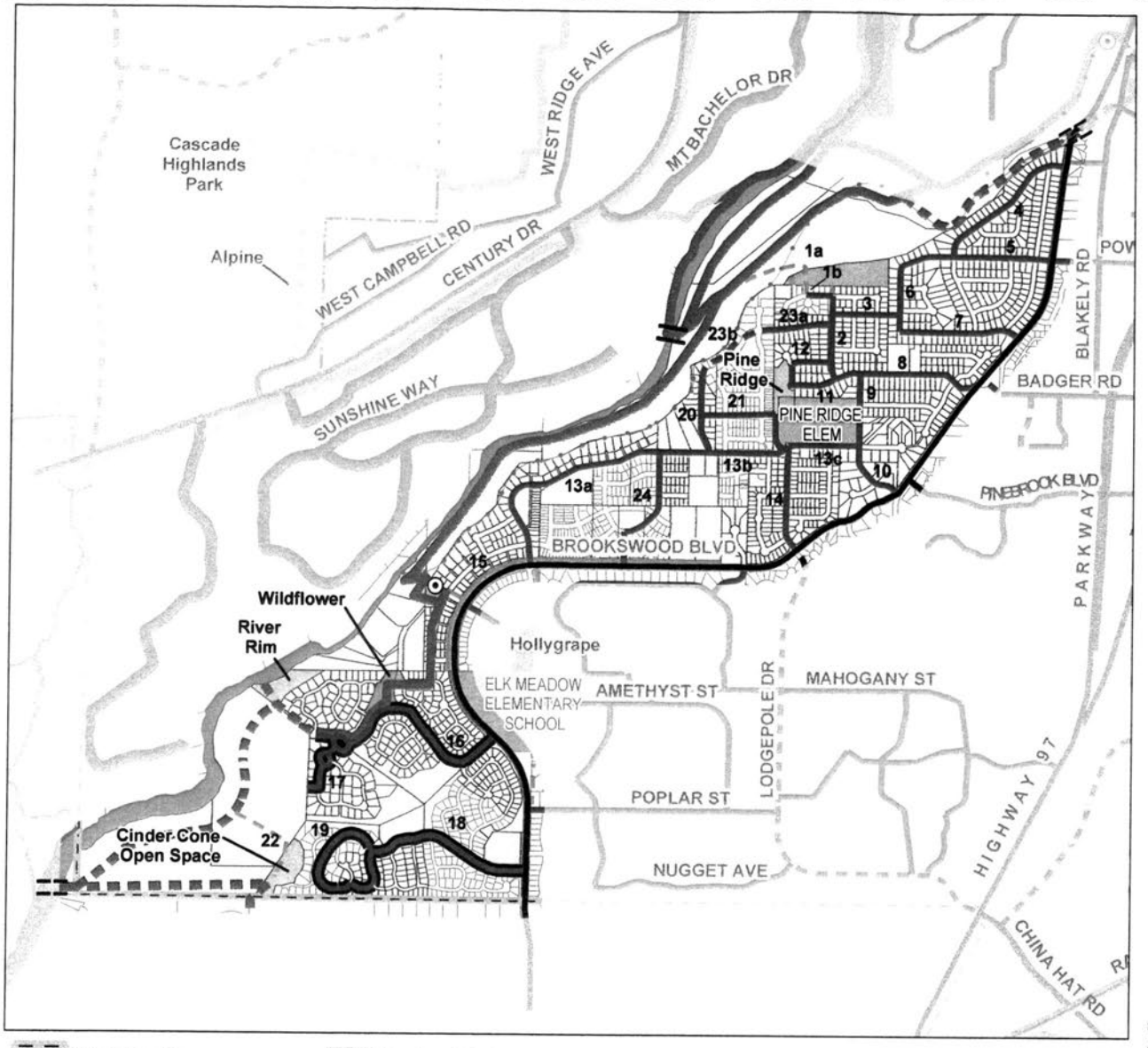
Opportunities:
New development providing opportunities to complete the local roadway grid.

Constraints:
River canyon on the west and the Parkway on the east.

Deficiencies:
Large blocks of land are undeveloped and limit non automobile travel

Remedies:
Completion of the local street and accessway system

N29
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 30

October 20, 2006

Neighborhood: **N30**

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1 a	X	950			X				X		X			9	$24	$22,589			Trail River to Rim
1 b	X	100			X		X				X			10	$55	$5,542			Trail street to river trail
2		1300		X			X							0	$0			Brianne/Columbine St.	Newly construct. w/ St. no s/w
3		650		X			X							0	$0			Quail Pine St.	Newly construct. w/ St. no s/w
4		1600		X			X							0	$0			Rock Bluff Lane	
5		1850		X			X							0	$0			Powers Rd W. of Brooks.	
6		800		X			X							0	$0			Powers Rd. N/S	
7		1300		X			X							0	$0			Cliff Rose Drive	
8		1300		X			X							0	$0			Porcupine Drive	
9		850		X			X							0	$0			Larkwood Drive	
10		650		X			X							0	$0			Larkwood Drive	
11		800		X			X							0	$0			Porcupine Drive	
12		650		X			X							0	$0			Linfield/Villano	
13 a		2650		X			X							0	$0			Hollygrape	
13 b		1300		X			X							0	$0			Hollygrape	
13 c		1200		X			X							0	$0			Hollygrape	
14		1600		X			X							0	$0			Lodgepole	
15		4000		X			X							0	$0			Brookswood Blvd.	Paved trail on N&W. side
16		2200		X			X							0	$0			River Rim	

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
17		950		X			X							0	$0			River Rim/Golden Mdw	
18		1900		X			X							0	$0			Amber Mdw Dr	
19		2300		X			X							0	$0			Goldenwood	
20		1050		X			X							0	$0			Gorge View	
21		950		X			X							0	$0			Dry Canyon	
22	X	1450			X				X		X			8	$16	$23,603		Cinder Cone Access Trail	Trail between River & Cone
23 a		650		X			X							0	$0			Gorge View	
23 b		1300		X			X							0	$0			Gorge View	
24		1500		X			X							0	$0			Princeton/Aspen Rim	

Total Length of Neighborhood System =	**37,800**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$51,734**	
Neighborhood Total Private Cost Estimate =	**$0**	
Neighborhood Total All =	**$51,734**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Wildflower
Undeveloped park facility	Pine Ridge, River Rim
Potential park facility	Cinder Cone Open Space
Other Open Space:	
Golf course	None
Deschutes River:	Yes
ASI*	Yes-Along the Deschutes River
Schools:	Pine Ridge Elementary School
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
This area is defined by the Deschutes River to the west, Brookswood Boulevard to the east the UGB to the south and Powers Road to the north. The area is composed of single-family residential land uses.

Opportunities:
The new elementary school provides opportunity to provide walk-to-school characteristics for this neighborhood

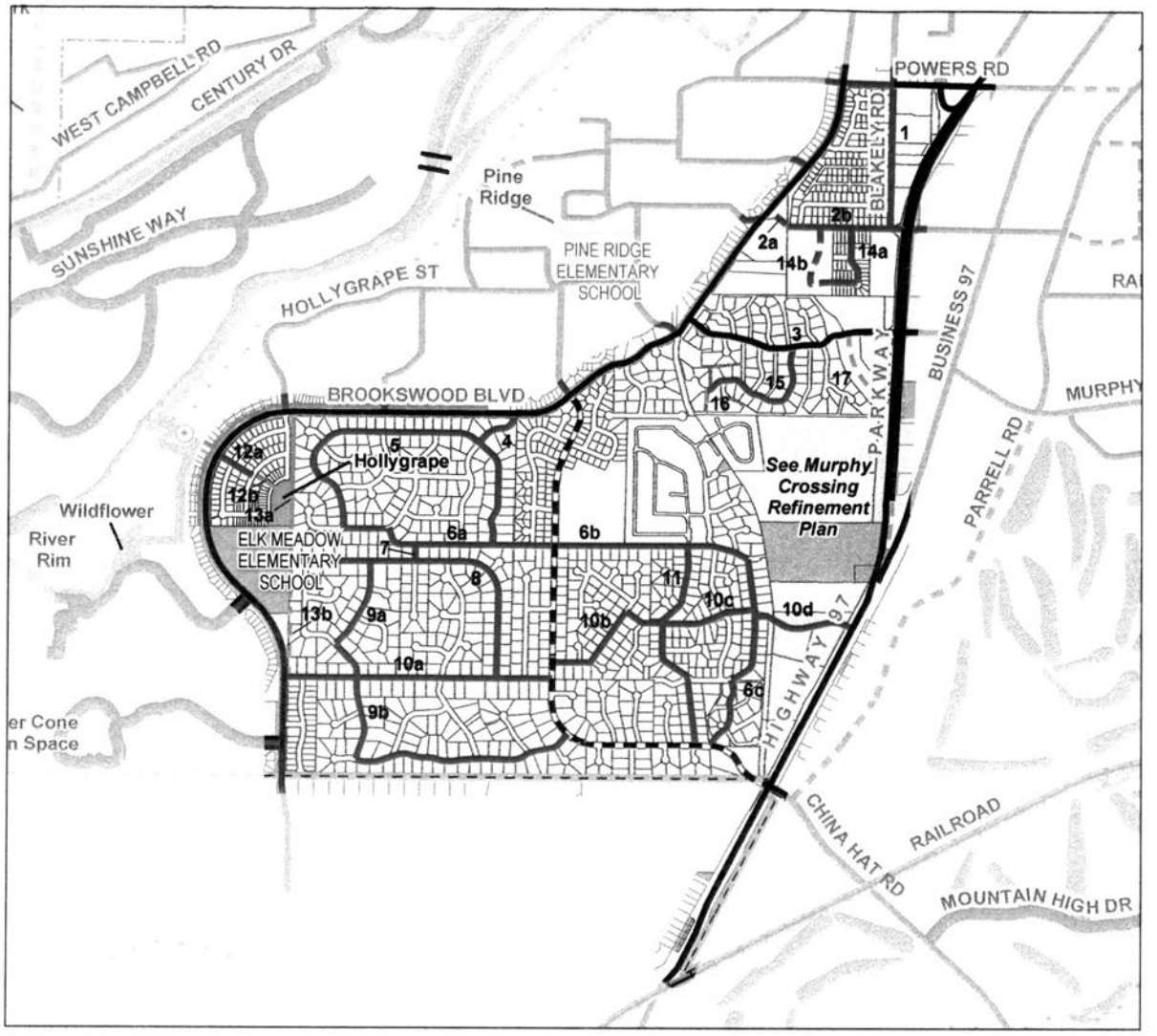
Constraints:

River canyon on the west. Brookswood Blvd has limited street connections

Deficiencies:
Many gaps in the sidewalk system along Brookswood.

Remedies:
Newer street system will provide opportunity to develop a true street grid and to provide completion of the sidewalk system on Brookswood.

N30
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

N W E S

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 31

October 20, 2006

Neighborhood: **N31**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		X	1600		X			X				X			3	$83	$133,274		Blakely Road	Needs sidewalks
2	a	X	1100		X								X		3	$83		$91,626	Future Street	
2	b		250		X			X							0	$0			Badger Road	
3			3050		X			X							0	$0			Pinebrook Blvd	Section w/bike lanes
4			550		X			X							0	$0			Springcrest Drive	
5			4900		X			X							0	$0			Chuckanut/Targee drives	
6	a		850		X			X							0	$0			Mahogany St.	
6	b		2250		X			X							0	$0			Mahogany St.	
6	c		2000		X			X							0	$0			Ridge Drive	
7			150		X			X							0	$0			Garnet Street	
8			3050		X			X							0	$0			Amethyst Street	
9	a		1300		X			X							0	$0			Platinum/Zircon drives	
9	b		3150		X			X							0	$0			Diamond Rd/Nugget Ave.	
10	a		2900		X			X							0	$0			Poplar Street	
10	b		1300		X			X							0	$0			Alpine Dr/Cinder Ln	
10	c		1450		X			X							0	$0			Cinder Lane	
10	d	X	1100		X			X					X		3	$83		$91,626	Romaine Village Way	
11			2300		X			X							0	$0			Granite Drive	
12	a		500		X			X							0	$0			Sweetbrier	
12	b		200			X									0	$0				Trail to Hollygrape park
13	a		1600			X									0	$0				Trail to Hollygrape park
13	b	X	850			X						X			10	$55	$47,108			Trail to Hollygrape park
14	a		900		X			X							0	$0			Brite Bush/Sorrento	
14	b	X	900		X								X		3	$83		$74,967	(new street)	Sidewalks

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
15		1550		X			X							0	$0			Deer Valley	
16	X	250			X						X			7	$7	$1,726		Trail Connection	To (future) Murphy Rd
17	X	900			X						X			7	$7	$6,212		Trail Connection	Pinebrook - Murphy

Total Length of Neighborhood System =		**40,900 L.F.**
Neighborhood Total Public Cost Estimate =	**$188,320**	
Neighborhood Total Private Cost Estimate =	**$258,218**	
Neighborhood Total All =	**$446,539**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Hollowgrape
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	Elk Meadow Elementary School
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
Brookswood defines this area to the west, the UGB to the south, the Parkway to the east and Powers Road to the north. Single-Family residential areas are the dominant land use in the area. A school and developed park occur in this area.

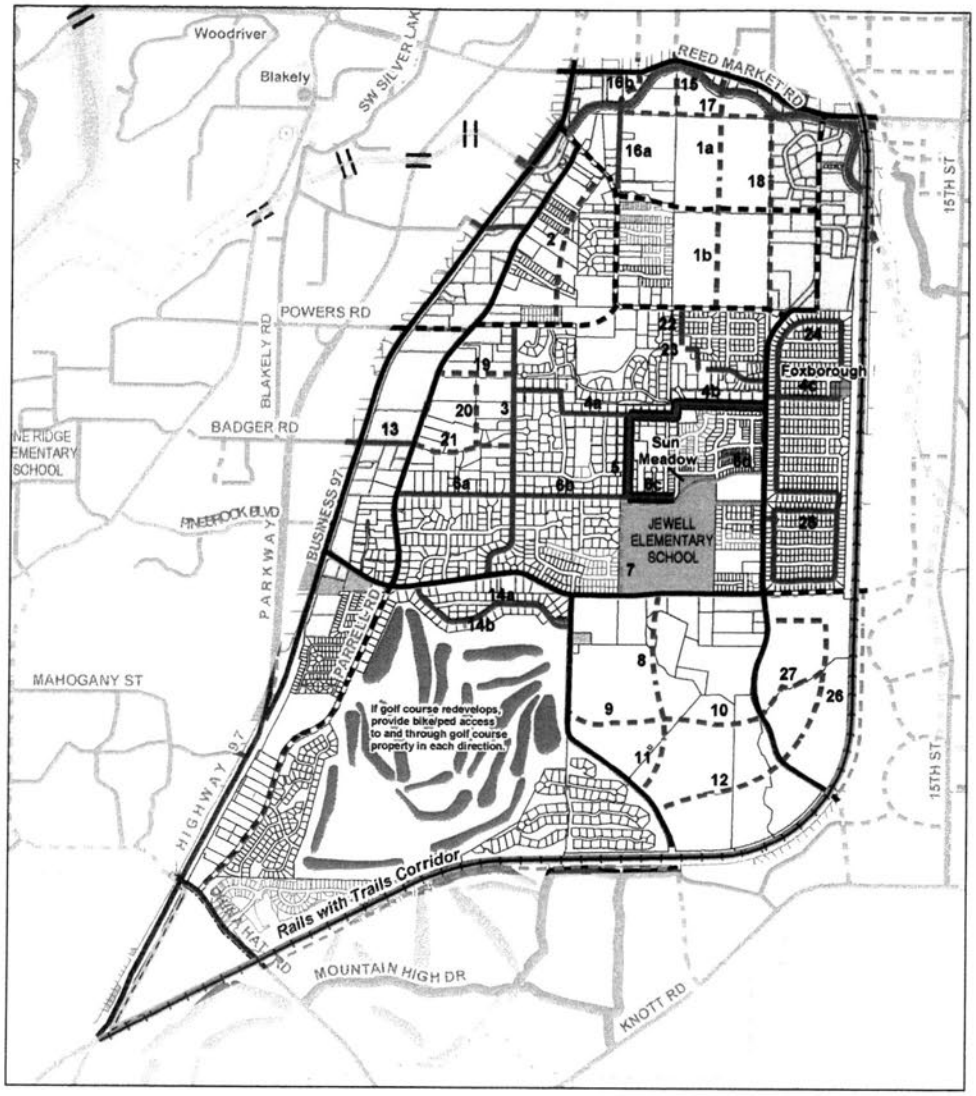
Opportunities:
Newer school provides opportunity to provide walk-to-school characteristics for this older neighborhood (good accessway connections to older area)

Constraints:
Lack of street and accessway connections, to the west (to Brookswood), and the Parkway, to the east.

Deficiencies:
Lack of local street grid system. Many gaps in the sidewalk system along Brookswood.

Remedies:
Older street system does not provide opportunity to fully develop an accessway system or true street grid.

N31
8/15/2006



Urban Area Reserve
City Boundary
River
Canals
Schools
Commercial / Industrial Zoning
Public Ownership
Golf course

Developed Parks
Undeveloped Parks
Potential / Future Parks
Existing trailhead
Proposed trailhead
Railroad
Proposed Rails with Trails
Existing Bridge / Grade Separation
Proposed Bridge / Grade Separation

Existing bicycle lane
Future bicycle lane
Existing shared roadway
Future shared roadway
Existing multi-use path, Primary
Future multi-use path, Primary
Existing multi-use path, Connector
Future multi-use path, Connector
Forest Service Trails
Private Road

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Miles

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 32

October 20, 2006

Neighborhood: **N32**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a	X	1700		X								X		3	$83		$141,604	(future street)	Sidewalks
1	b	X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
2		X	2250		X								X		3	$83		$187,417	(future street)	Sidewalks
3			3450		X			X							0	$0			Benham Road	
4	a		3950		X				X						0	$0			Klahani Dr/Mowitch/Ahha	
4	b		1200		X				X						0	$0			Klahani Dr	
4	c		1200		X			X							0	$0			Foxborough Lane	
5			1050		X				X						0	$0			Paulina Lane	
6	a		1600		X			X							0	$0			Rae Road	
6	b		1600		X				X						0	$0			Rae Road	
6	c	X	550		X				X			X			10	$55	$30,482		Rae Road	
6	d		800			X									0	$0				Trail: Street to Jewell E.S.
7			2100		X			X							0	$0			School Driveway	to Jewell Elementary School
8		X	1700		X								X		3	$83		$141,604	(future street)	Sidewalks
9		X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
10		X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
11		X	900		X								X		3	$83		$74,967	(future street)	Sidewalks
12		X	1850		X								X		3	$83		$154,098	(future street)	Sidewalks
13		X	700		X								X		3	$83		$58,307	Badger Road	Needs sidewalks
14	a		2500		X			X							0	$0			Fairway/Parr	
14	b		100			X		X							0	$0				Trail between st & G.C.
15		X	700		X								X		3	$83		$58,307	(future street)	Sidewalks
16	a		1100		X			X							0	$0			Alstrup	
16	b	X	800		X								X		3	$83		$66,637	(future street)	Sidewalks
17		X	2050		X								X		3	$83		$170,757	(future street)	Sidewalks

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
18	X	2600		X			X					X		3	$83		$216,570	(future street)	Sidewalks
19	X	900		X								X		3	$83		$74,967	(future street)	Sidewalks
20	X	1050		X								X		3	$83		$87,461	(future street)	Sidewalks
21	X	1400		X								X		3	$83		$116,615	(future street)	Sidewalks
22		1300		X			X							0	$0			Kobe/Dylan/Connifer	
23	X	600		X								X		3	$83		$49,978	(future streets)	Sidewalks
24		4650		X			X							0	$0			Fairfield/White Dove	
25		4050		X			X							0	$0			Larkspur Loop/Brookhollow	
26	X	3400		X								X		3	$83		$283,207	(future street)	Sidewalks
27	X	900		X								X		3	$83		$74,967	(future street)	Sidewalks

Total Length of Neighborhood System =	**58,600**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$30,482**	
Neighborhood Total Private Cost Estimate =	**$2,282,317**	
Neighborhood Total All =	**$2,312,799**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	Foxborough, Sun Meadow Park
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	Bend Golf and Country Club
Deschutes River:	None
ASI*	Yes-In the north sector and SE corner of the area
Schools:	Jewell Elementary School
Land Uses:	
Commercial	
Neighborhood	None
Regional	East side of 3rd Street
Industrial	The Northeast corner of the neighborhood
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
The majority of this area is composed of lower density and single-family residential areas. Medium density residential and industrial land uses occur in the northern sector of the area and regional commercial uses occurring along 3rd Street. The area is defined by 3rd Street to the west, the railroad to the south and east and Reed Market Road to the north. An elementary school and golf course occur in the area.

Opportunities:

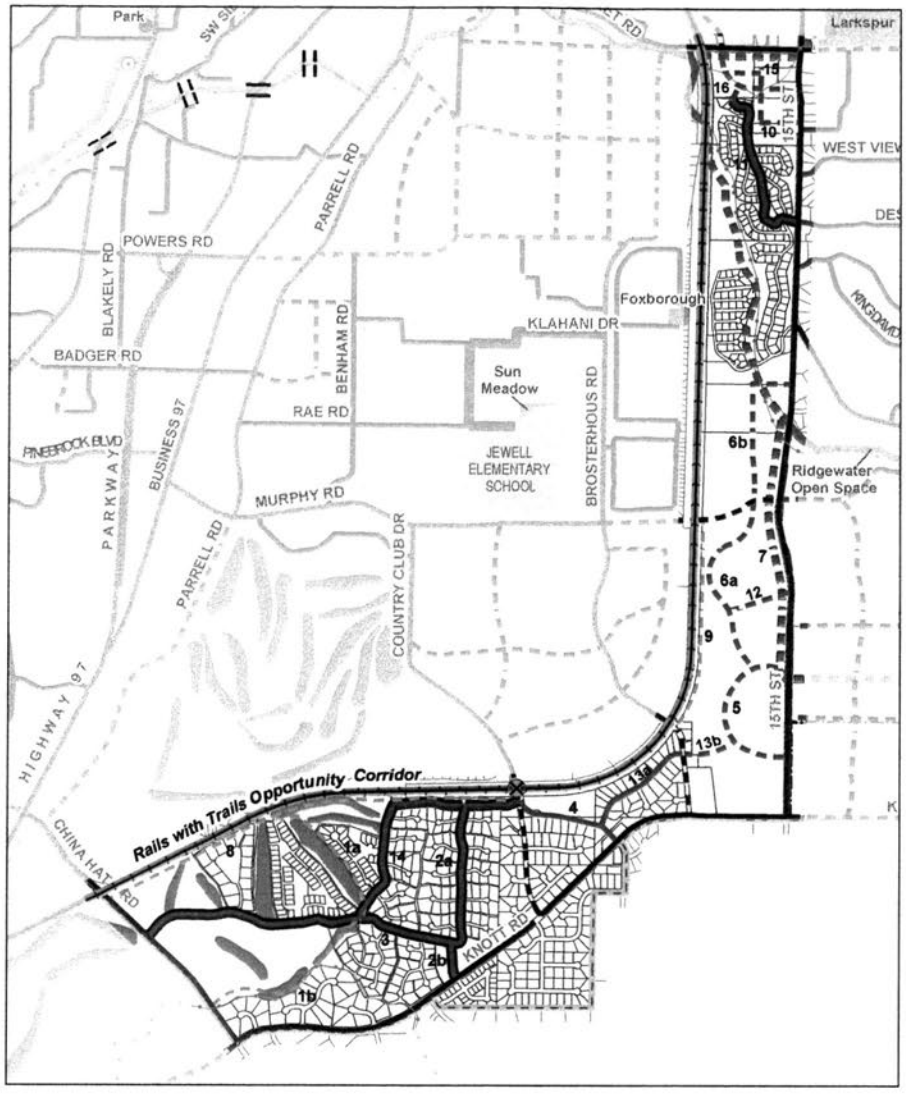
Large undeveloped areas or there are areas that are prime for redevelopment

Constraints:
Hwy 97 commercial strip (and access control) create a barrier to access, to the west, railroad provides a barrier along the south and east boundary of the neighborhood.

Deficiencies:
Lack of local street grid.

Remedies:
Completion of the local street and accessway system

N32
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- RR Crossing Opportunity
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 33

October 20, 2006

Neighborhood: **N33**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a	X	1800			X							X		8	$16		$29,300	Future Dev.of Golf Course?	Plan for trails through dev.
1	b	X	2650			X							X		8	$16		$43,136	Future Dev.of Golf Course?	Plan for trails through dev.
2	a		2650		X				X						0	$0			Mountain High Loop	
2	b		450		X				X						0	$0			Mountain High Drive	
3			1200		X				X						0	$0			Mountain High Loop	
4			1400		X				X						0	$0			Woodside	
5		X	2450		X								X		3	$83		$204,076	(future street)	Sidewalks
6	a	X	2550		X								X		3	$83		$212,405	(future street)	Sidewalks
6	b	X	1850		X								X		3	$83		$154,098	(future street)	Sidewalks
7																			***[See Primary Trails]***	
8		X	5900		X								X		9	$24		$140,289		Trail along RR ROW
8		X	1			X						X			16	$3,808	$3,808		Future RR Crossing	
9		X	2850			X							X		8	$16		$46,392		Trail along RR ROW
10		X	550		X								X		3	$83		$45,813	(future street)	Sidewalks
11			2150		X				X						0	$0			Friar Tuck/Little John	
12		X	850		X			X					X		3	$83		$70,802	(future street)	Sidewalks
13	a		1550		X				X						0	$0			Windsor Dr	
13	b	X	750		X			X					X		3	$83		$62,472	(future street)	Sidewalks
14			2700		X				X						0	$0			Mountain High Loop	
15		X	1400		X			X					X		3	$83		$116,615	(future street)	Sidewalks
16		X	1200		X			X					X		3	$83		$99,956	(future street)	Sidewalks

Total Length of Neighborhood System =	**36,901 L.F.**
Neighborhood Total Public Cost Estimate =	**$3,808**
Neighborhood Total Private Cost Estimate =	**$1,225,353**
Neighborhood Total All =	**$1,229,160**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	Mountain High
Deschutes River:	None
ASI*	Yes, west of 15th Street near the Murphy Road extension
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Single-family residential land use is the major land use within this area. The area is defined by the railroad to the north and west, and Knott Road to the south and east. A golf course is located in this area.

Opportunities:
Development of the large vacant parcels will provide an excellent opportunity to develop a good street grid pattern that will blend with the existing street system.

Constraints:

The railroad provides a barrier throughout the middle of the neighborhood both as a linear barrier and as a physical barrier (RR is built on a fill through most of the neighborhood). Neighborhood developed during an era of excessive cul-de-sac development limiting street connectivity.

Deficiencies:
Limited street system connectivity

Remedies:
Completion of the local street and accessway system in new areas will complete a system of interconnected streets and accessways existing areas are complicated by existing platting.

N33
8/15/2006

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 34

October 20, 2006

Neighborhood: **N34**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			1600		X			X							0	$0			Admiral Way	
2	a		1600		X			X							0	$0			Westview Drive	
2	b		2000		X			X							0	$0			Westview Drive	
3			4500		X			X							0	$0			Fargo Lane	
4			1700		X			X							0	$0			Hillridge Rd/Greenmont	
5	a		2550		X			X							0	$0			Desert Woods Drive	
5	b		1050		X			X							0	$0			Desert Woods Drive	
6	a	X	2400		X								X		3	$83		$199,911	Replacement St. in G.C.	
6	b	X	250			X							X		8	$16		$4,069		Trail between streets
7			2450		X			X							0	$0			King David Avenue	
8	a		2050		X			X							0	$0			King Solomon Lane	
8	b		1250		X			X							0	$0			King Solomon Lane	
9	a		1200		X			X							0	$0			Sarah Dr	
9	b	X	450		X			X					X		3	$83		$37,483	Sarah Dr	
9	c		2400		X			X							0	$0			Wilderness Way	
10			1600		X			X							0	$0			Newberry/Twin lakes	
11			1300		X			X							0	$0			King Jehu Way	
12			2750		X			X							0	$0			King Hezakiah Way	
13		X	3000		X								X		3	$83		$249,889	(new street)	
14		X	350			X							X		8	$16		$5,697		Trail connection to canal
14		X	100			X						X			12	$1,271	$127,126			Trail **Bridge** over canal
15			1800		X			X							0	$0			Steens Mtn. Loop	
16			3450		X			X							0	$0			Victory/Vista	

Total Length of Neighborhood System =	**41,800**	**L.F.**
Neighborhood Total Public Cost Estimate =	**$127,126**	
Neighborhood Total Private Cost Estimate =	**$497,050**	
Neighborhood Total All =	**$624,176**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	Orion Greens now closed redeveloping into a subdivision
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Land Uses:	
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Low-density residential land use dominates this area. The area is defined by 15th Street to the west 27th Street to the east, Reed Market Road to the north and Ferguson Road to the south.

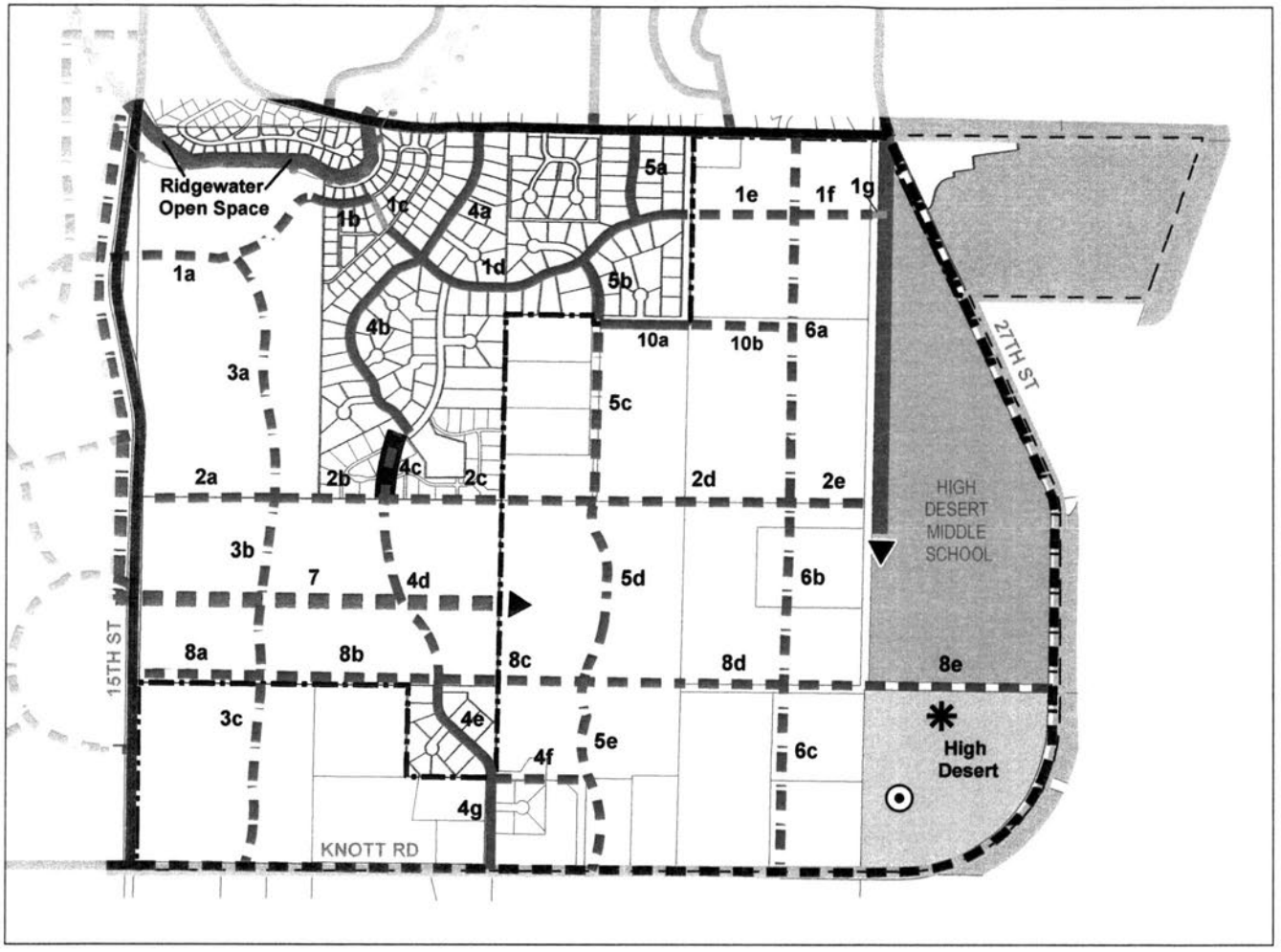
Opportunities:
Area is nearly fully developed with residential land uses.

Constraints:
Main canal through the eastern edge of neighborhood limits connections east. Canal frontage is individual ownership with canal company granted easement across properties - acquisition of trail use of ditch-rider road may be difficult. Existing platting pattern limits short easy connections through the neighborhood for non automobile travel.

Deficiencies:
Neighborhood is missing a good local street grid.

Remedies:
There are few opportunities to improve local street grid. Ther are some limited opportunities to improve neighborhood connections to the canal trail system but require property acquisitions.

N34
8/15/2006



Neighborhood 35 Legend

- Connection Point
- Destination

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood 35

October 20, 2006

Neighborhood: N-35

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	a	X	1500		X								X		3	$83		$124,944	(future street)	Sidewalks
1	b		350		X				X						0	$0			Sage Creek	
1	c		250			X				X					0	$0				Trail between streets
1	d		2650		X			X							0	$0			Via Sandia	
1	e	X	800		X								X		3	$83		$66,637	(future street)	Sidewalks
1	f	X	500		X								X		3	$83		$41,648	(future street)	Sidewalks
1	g	X	100			X							X		8	$16		$1,628		Trail connection to sch trail
2	a	X	700		X								X		3	$83		$58,307	(future street)	Sidewalks
2	b	X	700		X								X		3	$83		$58,307	(future street)	Sidewalks
2	c	X	1850		X								X		3	$83		$154,098	(future street)	Sidewalks
2	d	X	1400		X								X		3	$83		$116,615	(future street)	Sidewalks
2	e	X	550		X								X		3	$83		$45,813	(future street)	Sidewalks
3	a	X	2250		X								X		3	$83		$187,417	(future street)	Sidewalks
3	b	X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
3	c	X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
4	a		1000		X			X							0	$0			Ladera	
4	b		1600		X			X							0	$0			Ladera	
4	c		750		X				X						0	$0			Sky Harbor	
4	d	X	1600		X								X		3	$83		$133,274	(future street)	Sidewalks
4	e		800		X			X							0	$0			Raintree	
4	f	X	700		X								X		3	$83		$58,307	(future street)	Sidewalks
4	g		600		X			X							0	$0			Raintree	

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
5	a		600		X			X							0	$0			Cottonwood	
5	b		400		X			X							0	$0			Cabin Lane	
5	c	X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
5	d	X	1350		X								X		3	$83		$112,450	(future street)	Sidewalks
5	e	X	1250		X								X		3	$83		$104,120	(future street)	Sidewalks
6	a	X	2600		X								X		3	$83		$216,570	(future street)	Sidewalks
6	b	X	1300		X								X		3	$83		$108,285	(future street)	Sidewalks
6	c	X	1350		X								X		3	$83		$112,450	(future street)	Sidewalks
7																		***(See: Primary Trail List - Trail #19 - B)***		
8	a	X	850		X								X		3	$83		$70,802	(future street)	Sidewalks
8	b	X	1350		X								X		3	$83		$112,450	(future street)	Sidewalks
8	c	X	1100		X								X		3	$83		$91,626	(future street)	Sidewalks
8	d	X	1350		X								X		3	$83		$112,450	(future street)	Sidewalks
8	e	X	1950		X								X		3	$83		$162,428	(future street)	Sidewalks
9																		***(See: Primary Trail List - Trail #19 - C)***		
10	a		650		X			X							0	$0			Hearthstone	
10	b	X	750		X								X		3	$83		$62,472	(future street)	Sidewalks

Total Length of Neighborhood System =	**41,400 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$2,637,954**
Neighborhood Total All =	**$2,637,954**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	High Desert Park
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	Yes-In the west sector of the area
Schools:	High Desert Middle School
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
15th Street to the west, Knott Road to the south, 27th Street to the east and Ferguson Road to the north define this area. Low-density residential developments compose the dominant land use in the area. The High desert Middle School and an undeveloped park sports park are on the eastern boundary of the area. An Urban Reserve Area is within the southeast corner of the area.

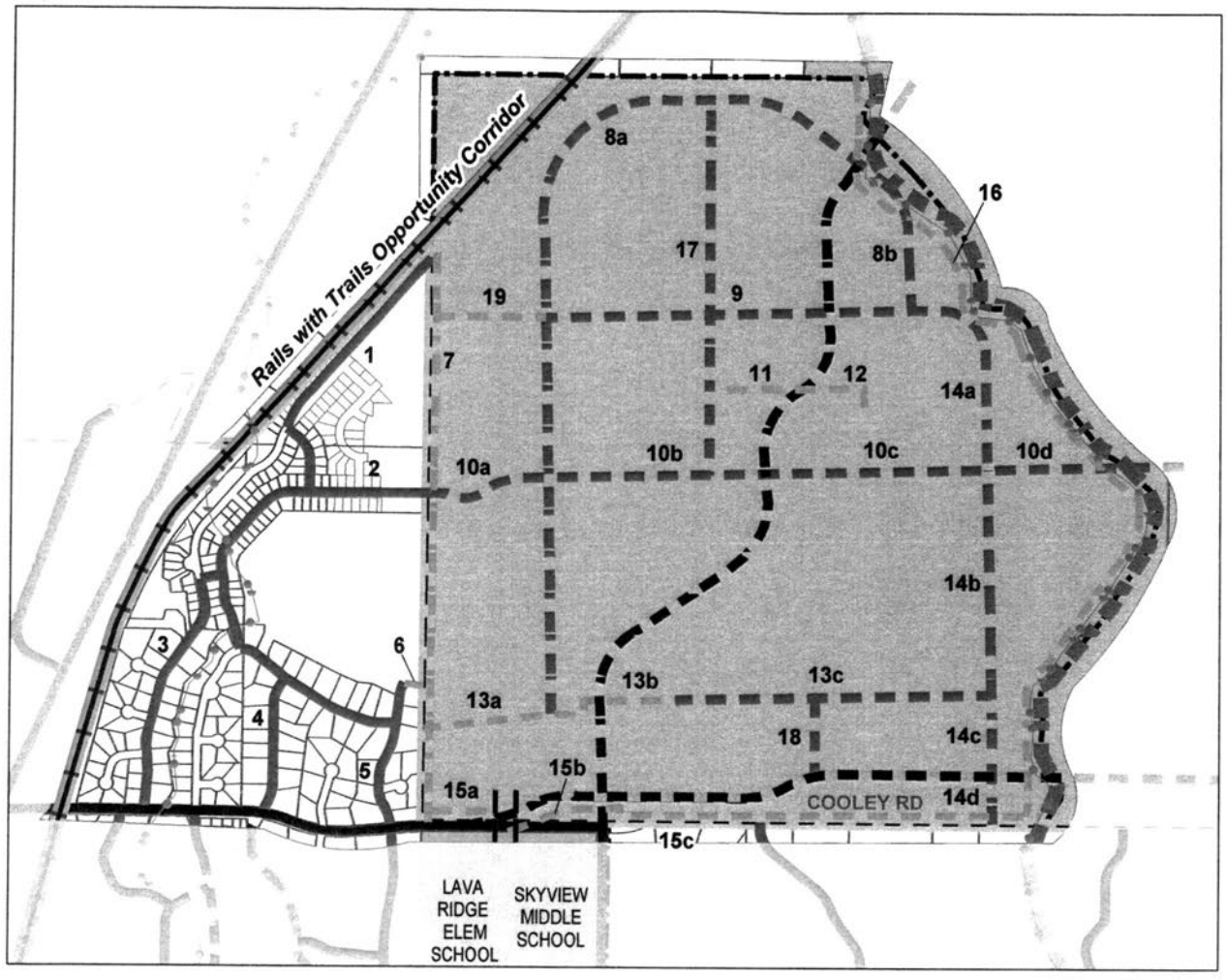
Opportunities:
Development of the large vacant parcels will provide an excellent opportunity to develop a good street grid pattern that will blend with the existing street system. Very good bike-ped access could be improved from the west to the middle school as the area develops.

Constraints:
There are few area constraints, the existing developed areas have several accessway or street stub connection opportunities. Most of the area is undeveloped or lies outside of the UGB.

Deficiencies:
Large vacant parcels don't provide good non automobile circulation through the neighborhood

Remedies:

Completion of the local street and accessway system as the area develops.



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Cooley North

October 20, 2006

Neighborhood: **Cooley - North**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			2000		X			X							0	$0			Hunter's Circle	
2			3750		X			X							0	$0			Beaumont	
3			1850		X			X							0	$0			Hunter's Circle	
4			1000		X			X							0	$0			Boyd Acres Road	
5			1050		X			X							0	$0			Ranch Village Ln	
6		X	200			X							X		10	$55		$11,084		Trail
7		X	3950			X							X		10	$55		$218,914		Trail
8	a	X	5150		X								X		3	$83		$428,976	(future street)	Sidewalks
8	b	X	2000		X								X		3	$83		$166,593	(future street)	Sidewalks
9		X	3000		X								X		3	$83		$249,889	(future street)	Sidewalks
10	a	X	850		X								X		3	$83		$70,802	(future street)	Sidewalks
10	b	X	1500		X								X		3	$83		$124,944	(future street)	Sidewalks
10	c	X	2000		X								X		3	$83		$166,593	(future street)	Sidewalks
10	d	X	1000		X								X		3	$83		$83,296	(future street)	Sidewalks
11		X	1100			X							X		10	$55		$60,963		Trail
12		X	150			X							X		10	$55		$8,313		Trail
13	a	X	1250			X							X		3	$83		$104,120		Trail
13	b	X	550			X							X		3	$83		$45,813		Trail
13	c	X	2300		X								X		3	$83		$191,581	(future street)	Sidewalks
14	a	X	950		X								X		3	$83		$79,131	(future street)	Sidewalks
14	b	X	1600		X								X		3	$83		$133,274	(future street)	Sidewalks
14	c	X	600		X								X		3	$83		$49,978	(future street)	Sidewalks
14	d	X	300		X								X		3	$83		$24,989	(future street)	Sidewalks

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
15 a	X	600			X							X		10	$55		$33,253		Trail
15 b	X	650			X							X		10	$55		$36,024		Trail
15 c	X	2900			X							X		10	$55		$160,722		Trail
16	X	5550			X							X		10	$55		$307,588		Trail
17	X	2650		X								X		3	$83		$220,735	(future street)	Sidewalks
18	X	550		X								X		3	$83		$45,813	(future street)	Sidewalks
19	X	800			X							X		10	$55		$44,337		Trail

Total Length of Neighborhood System =		**51,800 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$3,067,724**	
Neighborhood Total All =	**$3,067,724**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	West Side of Juniper Ridge Area (?)
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	Some commercial areas planned within the JR Area
Regional	None
Industrial	Futue Juniper Ridge Industrial area - most of this area
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

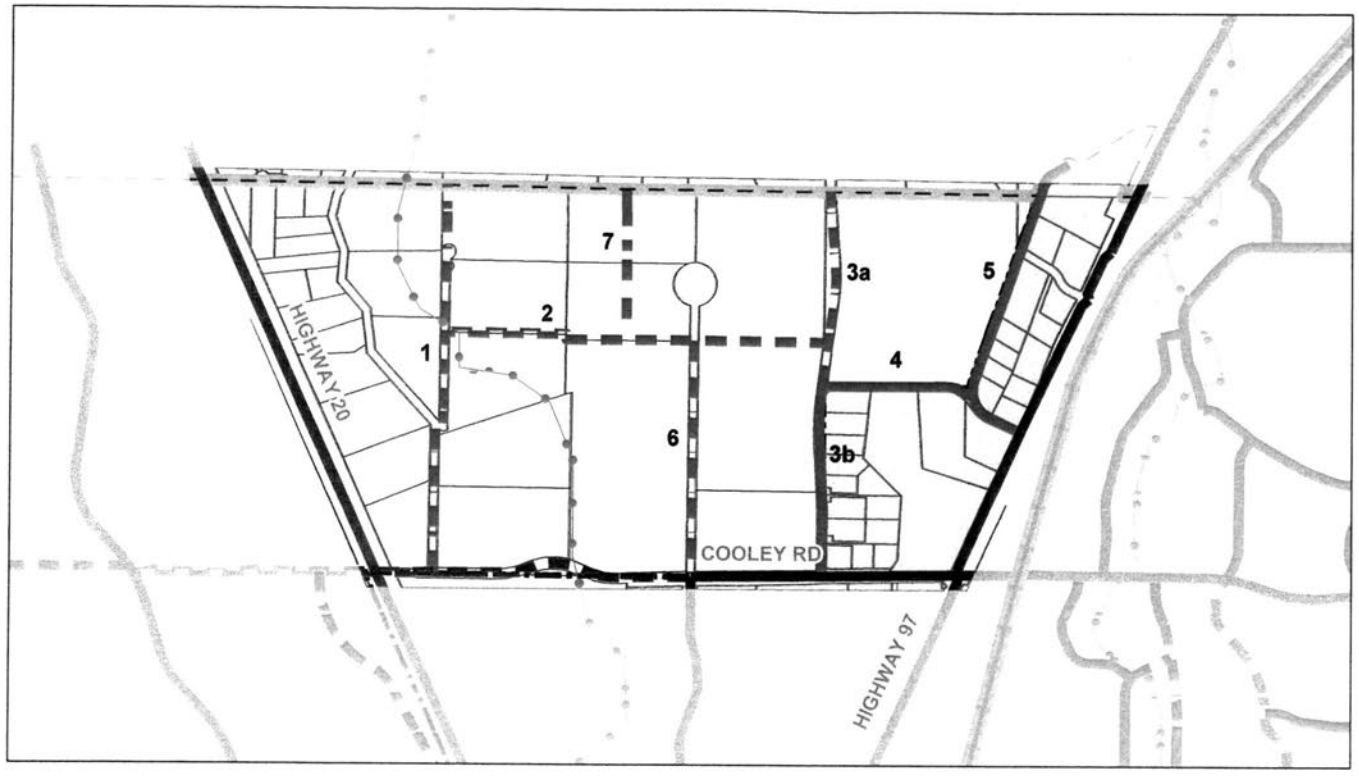
Description:
Single-Family residential land dominates the western edge of this area but most of the vacant land area - to the east of the residential area, is planned for the future Juniper Ridge Industrial area (approximately 500 Acres). Regional commercial and industrial land uses occur along the west side of Highway 97. The area is defined by Highway 97 to the west, the UGB to the notth and the canal to the east. A future sports park is located immediatelv to the southeast of the area.

Opportunities:
Development of the Juniper Ridge area will provide good street connectivity and convenient access to jobs for the residential areaa south of Cooley Road.

Constraints:
Railroad along the western edge of neighborhood. Cooley Road is a minor arterial that could form a significant barrier as traffic volumes grow over time.

Deficiencies:
Limited Street connectivity opportunities between the existing residential area and the planned industrial area.

Remedies:
Provision of local street and accessway system with new development



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D. Quinlan / neigh_hun_n.mxd

- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Hunnel North

October 20, 2006

Neighborhood: **Hunnel - North**

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	X	2650		X			X					X		3	$83		$220,735	Scenic Dr/Crooked Rocks	
2	X	2650		X								X		3	$83		$220,735	(future street)	Sidewalks
3 a	X	1300		X								X		3	$83		$108,285	(future street)	Future: Hunnel Road - N?
3 b		1250		X			X							0	$0			Berg Lane	Future: Hunnel Road - N?
4		950		X			X							0	$0			Loco	
5		2000		X			X							0	$0			Clausen	
6	X	1600		X								X		3	$83		$133,274	(future street)	Sidewalks
7	X	1000		X								X		3	$83		$83,296	(future street)	Sidewalks

Total Length of Neighborhood System =		**13,400 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**	
Neighborhood Total Private Cost Estimate =	**$766,326**	
Neighborhood Total All =	**$766,326**	

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	Major Regional Commercil uses to the South of Cooley Road
	and along the west side of Hwy 97
Industrial	None
General	

**ASI = Area of Special Interest*

NEIGHBORHOOD ANALYSIS

Description:
The area is bounded by Hwy 20 on the west, Hwy 97 on the east, Cooley Road on the south and the Urban Area Reserve on the north

Opportunities:
Most of the area is outside of the UGB and is largely vacant. As the area comes into the UGB there is an opportunity to develop a good grid street system

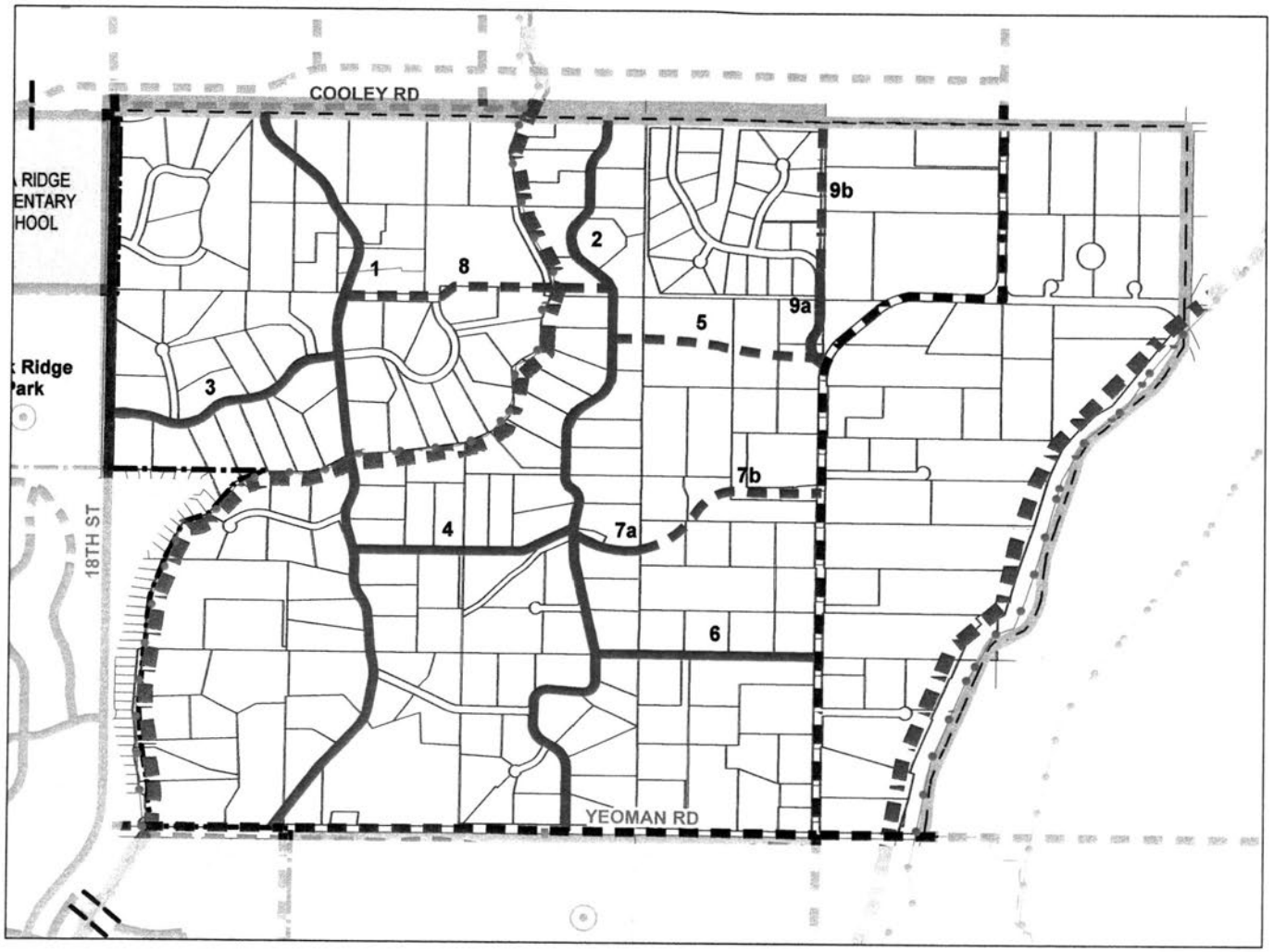
Constraints:
No constraints exist.

Deficiencies:

No development so there is not a good system of streets to serve the area.

Remedies:
Most of the area is outside of the UGB and is largely vacant. As the area comes into the UGB there is an opportunity to develop a good grid street system

Hunnel-N
8/15/2006



- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course

- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation

- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

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DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Lava Ridge East

October 20, 2006

Neighborhood: **Lava Ridge - East**

• Segment:		• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1			5300		X			X							0	$0			Old Deschutes Road	
2			5800		X			X							0	$0			Overtree	
3			2000		X			X							0	$0			Scottsdale	
4			1700		X			X							0	$0			Ann Margarette Dr	
5		X	1450		X				X				X		3	$83		$120,780	(future street)	Sidewalks
6			1650		X			X							0	$0			Garcia	
7	a		300		X			X							0	$0			Ann Margarette/(future St)	
7	b	X	1700		X				X				X		3	$83		$141,604	(future street)	Sidewalks
8		X	1850		X				X				X		3	$83		$154,098	(future street)	Sidewalks
9	a	X	800		X			X					X		3	$83		$66,637	(future street)	Sidewalks
9	b	X	950		X				X				X		3	$83		$79,131	(future street)	Sidewalks

Total Length of Neighborhood System =	**23,500 L.F.**
Neighborhood Total Public Cost Estimate =	**$0**
Neighborhood Total Private Cost Estimate =	**$562,250**
Neighborhood Total All =	**$562,250**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Other Open Space:	
Golf course	None
Deschutes River:	None
Deschutes River:	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	None
Industrial	None
General	

****ASI = Area of Special Interest***

NEIGHBORHOOD ANALYSIS

Description:
The area is bounded by 18th St. on the west, Deschutes Market Road on the east, Yeoman Road on the south and (the future) Cooley Road extension on the north.

Opportunities:

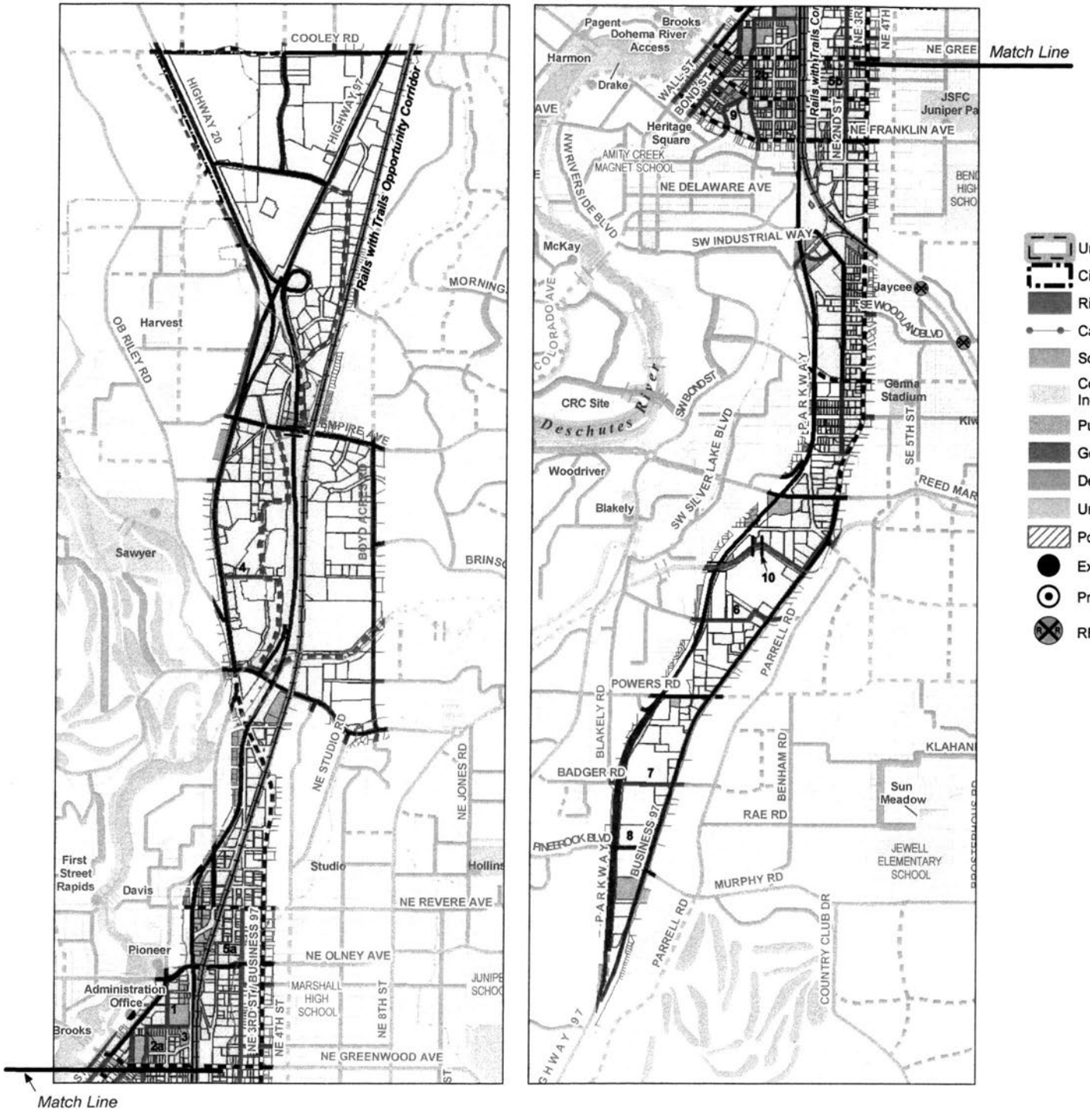
Most of the area is outside of the UGB and is largely currently developed with large lot subdivisions. As the area comes into the UGB there and develops there is an opportunity to develop a better grid street system

Constraints:
Existing large lot residential develop patterns limit street connectivity options

Deficiencies:
Limited existing street connectivity serving the entire area.

Remedies:
The area is outside of the UGB and is either developed with large residential lots. As the area comes into the UGB there is an opportunity to develop a good grid street system.

Lava Ridge-E
8/15/2006



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- Urban Area Reserve
- City Boundary
- River
- Canals
- Schools
- Commercial / Industrial Zoning
- Public Ownership
- Golf course
- Developed Parks
- Undeveloped Parks
- Potential / Future Parks
- Existing trailhead
- Proposed trailhead
- RR Crossing Opportunity
- Railroad
- Proposed Rails with Trails
- Existing Bridge / Grade Separation
- Proposed Bridge / Grade Separation
- Existing bicycle lane
- Future bicycle lane
- Existing shared roadway
- Future shared roadway
- Existing multi-use path, Primary
- Future multi-use path, Primary
- Existing multi-use path, Connector
- Future multi-use path, Connector
- Forest Service Trails
- Private Road

DESCHUTES GEOgraphics

J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Neighborhood CC

October 20, 2006

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Neighborhood: **CC** **Commercial Corridor**

• Segment:	• Proposed:	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need:	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1		650		X			X							0	$0			Hill Street	
2 a		650		X			X							0	$0			Harriman Street	
2 b		1500		X			X							0	$0			Harriman Street	
3		850		X			X							0	$0			Kearney	
4		750		X			X							0	$0			Bend River Mall Av	
5 a		6200		X			X							0	$0			NE 2nd Street	
5 b		1450		X			X							0	$0			NE 2nd Street	
6		1650		X			X							0	$0			Reed Lane	
7		1600		X			X							0	$0			Badger Road	
8		1300		X			X							0	$0			Pinebrook Blvd.*	
9		1000		X			X							0	$0			Lava Road	
10	X	100			X		X				X			12	$1,271	$127,126		Primary Trail to Fred Meyers	New Canal Bridge

** NOTE: Roadway section currently has Bike Lanes*

Total Length of Neighborhood System =	**17,700 L.F.**
Neighborhood Total Public Cost Estimate =	**$127,126**
Neighborhood Total Private Cost Estimate =	**$0**
Neighborhood Total All =	**$127,126**

DESTINATIONS

Neighborhood Parks:	
Developed park facility	None
Undeveloped park facility	None
Potential park facility	None
Undeveloped park facility	None
Other Open Space:	
Golf course	None
Golf course	None
Golf course	None
Deschutes River:	None
ASI*	None
Schools:	None
Land Uses:	
Commercial	
Neighborhood	None
Regional	Commercial uses along 3rd Street and downtown Bend
Industrial	Industrial uses along the Parkway and 3rd Street
General	

ASI = Area of Special Interest

NEIGHBORHOOD ANALYSIS

Description:
Regional highway commercial uses dominate this area. This area forms a central spine that passes through Bend from the south UGB to the north UGB. Regional commercial and industrial land use comprise most of this area.

Opportunities:
Few opportunities to add to the accessway system due largely to the existing commercial development and access control along the major roadway system. Although there is good system of parallel local roads that provide excellent alternative corridors for north-south travel.

Constraints:
Major north-south corridors of the Parkway, Third Street and the railroad limit connections east and west. Also large blocks of committed commercial strips along Third Street limit accessway connections.

Deficiencies:
Access across the major barriers is limited to the major roadway system of east-west arterial streets.

Remedies:
Construct Bridge over the Canal to Fred Meyers Parking Lot

CC
8/15/2006

Table A - 1
Facility Inventory
(Distances)

District		Proposed		Existing		
		Road	Trail	Road	Trail	TOTALS
N	1	7,250	0	9,250	0	16,500
N	2	5,600	2,500	35,050	1,900	45,050
N	3	23,600	250	29,600	100	53,550
N	4	4,050	14,620	1,700	0	20,370
N	5	2,400	3,200	19,700	200	25,500
N	6	8,300	10,100	84,800	5,250	108,450
N	7	0	0	5,500	0	5,500
N	8	850	550	6,800	1,300	9,500
N	9	3,950	3,900	52,600	350	60,800
N	10	42,240	2,950	25,600	1,150	71,940
N	11	1,600	700	1,700	2,100	6,100
N	12	9,300	350	18,750	0	28,400
N	13	0	0	12,300	0	12,300
N	14	0	2,100	10,600	1,900	14,600
N	15	2,800	2,250	14,250	2,200	21,500
N	16	6,250	4,400	12,550	0	23,200
N	17	400	650	19,150	4,550	24,750
N	18	6,950	0	17,450	1,250	25,650
N	19	0	0	9,400	0	9,400
N	20	7,800	2	12,150	0	19,952
N	21	5,750	1,050	5,350	400	12,550
N	22	9,050	450	22,550	0	32,050
N	23	5,050	0	6,450	0	11,500
N	24	200	18,550	30,350	6,100	55,200
N	25	6,100	0	9,950	0	16,050
N	26	0	0	14,000	1,750	15,750
N	27	1,650	0	13,550	0	15,200
N	28	0	1,950	26,150	0	28,100
N	29	0	1,150	16,750	300	18,200
N	30	0	2,500	35,300	0	37,800
N	31	4,700	2,000	32,400	1,800	40,900
N	32	27,950	0	29,750	900	58,600
N	33	17,501	7,300	12,100	0	36,901
N	34	5,850	700	35,250	0	41,800
N	35	31,650	100	9,400	250	41,400
N	C-N	24,450	17,700	9,650	0	51,800
N	H-N	9,200	0	4,200	0	13,400
N	LR-E	6,750	0	16,750	0	23,500
N	CC	0	100	17,600	0	17,700
	LF =	**289,191**	**102,072**	**746,400**	**33,750**	***1,171,413***
	MI =	**54.8**	**19.3**	**141.4**	**6.4**	***221.9***

Note:

1. Single digit(s) in length totals represent(s) a "RR Xing" - NOT a length

Table A - 2
Opinion of Probable Accessway Costs
By Neighborhood

District		DISTANCE (L.F.)	COSTS		
			Public	Private	TOTALS
N	1	16,500	$120,780	$447,770	$568,550
N	2	45,050	$30,531	$520,748	$551,279
N	3	53,550	$252,837	$1,046,133	$1,298,971
N	4	20,370	$806,344	$262,314	$1,068,659
N	5	25,500	$565,611	$200,946	$766,557
N	6	108,450	$381,650	$62,566	$444,216
N	7	5,500	$0	$0	$0
N	8	9,500	$22,941	$70,802	$93,743
N	9	60,800	$26,921	$329,020	$355,941
N	10	71,940	$1,251,596	$2,362,498	$3,614,094
N	11	6,100	$0	$138,106	$138,106
N	12	28,400	$8,322	$774,655	$782,977
N	13	12,300	$0	$0	$0
N	14	14,600	$49,933	$0	$49,933
N	15	21,500	$38,619	$236,485	$275,104
N	16	23,200	$3,256	$588,968	$592,224
N	17	24,750	$0	$48,774	$48,774
N	18	25,650	$164,651	$320,691	$485,341
N	19	9,400	$0	$0	$0
N	20	19,952	$10,548	$437,305	$447,853
N	21	12,550	$7,248	$478,953	$486,201
N	22	27,800	$9,020	$751,199	$760,219
N	23	11,500	$0	$420,646	$420,646
N	24	55,200	$11,852	$308,031	$319,883
N	25	16,050	$0	$508,107	$508,107
N	26	15,750	$0	$0	$0
N	27	15,200	$0	$137,439	$137,439
N	28	28,100	$2,243	$0	$2,243
N	29	18,200	$131,546	$6,511	$138,058
N	30	37,800	$51,734	$0	$51,734
N	31	40,900	$188,320	$258,218	$446,539
N	32	58,600	$30,482	$2,282,317	$2,312,799
N	33	36,901	$3,808	$1,225,353	$1,229,160
N	34	41,800	$127,126	$497,050	$624,176
N	35	41,400	$0	$2,637,954	$2,637,954
N	C-N	51,800	$0	$3,067,724	$3,067,724
N	H-N	13,400	$0	$766,326	$766,326
N	LR-E	23,500	$0	$562,250	$562,250
N	CC	17,700	$127,126	$0	$127,126
		1,167,163	**$4,425,044**	**$21,755,861**	**$26,180,904**
			17%	***83%***	***100%***

1. Single digit(s) in length totals represent(s) a "RR Xing" - NOT a length

Table A - 3

"Non Sidewalk" Accessway Costs *

District		COSTS		
		Public	Private	TOTALS
N	1	$0	$0	$0
N	2	$5,542	$29,300	$34,842
N	3	$194,443	$19,397	$213,840
N	4	$806,344	$66,506	$872,850
N	5	$565,611	$1,035	$566,646
N	6	$75,315	$0	$75,315
N	7	$0	$0	$0
N	8	$0	$0	$0
N	9	$26,921	$0	$26,921
N	10	$7,150	$5,177	$12,327
N	11	$0	$4,832	$4,832
N	12	$8,322	$0	$8,322
N	13	$0	$0	$0
N	14	$49,933	$0	$49,933
N	15	$38,619	$3,256	$41,875
N	16	$3,256	$68,367	$71,622
N	17	$0	$15,456	$15,456
N	18	$164,651	$320,691	$485,341
N	19	$0	$0	$0
N	20	$10,548	$0	$10,548
N	21	$7,248	$0	$7,248
N	22	$690	$5,697	$6,387
N	23	$0	$0	$0
N	24	$9,767	$291,372	$301,138
N	25	$0	$0	$0
N	26	$0	$0	$0
N	27	$0	$0	$0
N	28	$2,243	$0	$2,243
N	29	$131,546	$6,511	$138,058
N	30	$28,131	$0	$28,131
N	31	$55,046	$0	$55,046
N	32	$30,482	$0	$30,482
N	33	$3,808	$259,116	$262,924
N	34	$127,126	$9,767	$136,893
N	35	$0	$1,628	$1,628
N	C-N	$0	$881,198	$881,198
N	H-N	$0	$0	$0
N	LR-E	$0	$0	$0
N	CC	$127,126	$0	$127,126
		$2,479,866	**$1,989,304**	**$4,469,170**
		55%	***45%***	***100%***

Notes:

1. * Costs = Opinion of Probable Accessway Costs

"Sidewalk" Accessway Costs *

District		COSTS		
		Public	Private	TOTALS
N	1	$120,780	$447,770	$568,550
N	2	$24,989	$491,448	$516,437
N	3	$58,395	$1,026,736	$1,085,131
N	4	$0	$195,809	$195,809
N	5	$0	$199,911	$199,911
N	6	$306,336	$62,566	$368,902
N	7	$0	$0	$0
N	8	$22,941	$70,802	$93,743
N	9	$0	$329,020	$329,020
N	10	$1,244,446	$2,357,321	$3,601,767
N	11	$0	$133,274	$133,274
N	12	$0	$774,655	$774,655
N	13	$0	$0	$0
N	14	$0	$0	$0
N	15	$0	$233,230	$233,230
N	16	$0	$520,602	$520,602
N	17	$0	$33,319	$33,319
N	18	$0	$0	$0
N	19	$0	$0	$0
N	20	$0	$437,305	$437,305
N	21	$0	$478,953	$478,953
N	22	$8,330	$745,501	$753,831
N	23	$0	$420,646	$420,646
N	24	$2,086	$16,659	$18,745
N	25	$0	$508,107	$508,107
N	26	$0	$0	$0
N	27	$0	$137,439	$137,439
N	28	$0	$0	$0
N	29	$0	$0	$0
N	30	$23,603	$0	$23,603
N	31	$133,274	$258,218	$391,492
N	32	$0	$2,282,317	$2,282,317
N	33	$0	$966,237	$966,237
N	34	$0	$487,283	$487,283
N	35	$0	$2,636,326	$2,636,326
N	C-N	$0	$2,186,527	$2,186,527
N	H-N	$0	$766,326	$766,326
N	LR-E	$0	$562,250	$562,250
N	CC	$0	$0	$0
		$1,945,178	**$19,766,556**	**$21,711,734**
		9%	***91%***	***100%***

Notes:

1. * Costs = Opinion of Probable Accessway Costs

TABLE A - 4 Accessway Improvement - Opinion of Probable Costs

Trail Type	Accessway Description	2006 Total cost / Linear feet	Width	Signage $0.10 LF	Street Signage $0.10 LF	Clear & Grub **$0.25** SF	Subbase **4" deep $0.74** SF	Drainage $0.16 SF	Earthwork Flat $1.00 SF	Earthwork Sloped $2.00 SF	Concrete **$4.50** SF	Trail Paving **$2.25** SF	Bollards $0.10 LF	Bridges <100 lf **$125** SF	Bridges >100 lf **$139** SF	Railroad Crossing $150 SF	Bike Lane Striping $1 LF	Contingency 25%
0	Do nothing	**$0.00**	0															-
1	Directional signage only	**$0.13**	0	$0.10														0.03
2	New concrete Sidewalk: 1 side of street	**$41.71**	5	$0.10		$1.25	$3.72	$0.80	$5.00		$22.50							8.34
3	New concrete Sidewalk: both sides of street	**$83.30**	10	$0.10		$2.50	$7.44	$1.60	$10.00		$45.00							16.66
4	Existing single track trail	**$0.13**	2	$0.10														0.03
5	New single track trail - flat	**$1.15**	2	$0.10		$0.50		$0.32										0.23
6	New single track trail on side slope	**$6.15**	2	$0.10		$0.50		$0.32		$4.00								1.23
7	Exist. Alignment, new crushed rock trail	**$6.90**	6	$0.10			$4.46	$0.96										1.38
7.1	Exist. Ditch-Rider Road, new crushed rock trail	**$23.92**	10	$0.10			$7.44	$1.60	$10.00									4.78
8	New crushed rock trail	**$16.28**	6	$0.10		$1.50	$4.46	$0.96	$6.00									3.26
9	New crushed rock trail on side slope	**$23.78**	6	$0.10		$1.50	$4.46	$0.96		$12.00								4.76
10	New asphalt paved trail	**$55.42**	10	$0.10	$0.10	$2.50	$7.44	$1.60	$10.00			$22.50	$0.10					11.08
11	New asphalt paved trail on side slope	**$67.92**	10	$0.10	$0.10	$2.50	$7.44	$1.60		$20.00		$22.50	$0.10					13.58
12	Bridge: 8' wide less than 100 feet in length	**$1,271.26**	8	$0.10	$0.10	$0.50	$1.49	$0.32		$16.00			$0.10	$998				254.25
13	Bridge: 8' wide greater than 100 feet in length	**$1,414.26**	8	$0.10	$0.10	$0.50	$1.49	$0.32		$16.00			$0.10		$1,113			282.85
14	Bridge: 12' wide less than 100 feet in length	**$1,906.70**	12	$0.10	$0.10	$0.75	$2.23	$0.48		$24.00			$0.10	$1,498				381.34
15	Bridge: 12' wide greater than 100 feet in length	**$2,121.20**	12	$0.10	$0.10	$0.75	$2.23	$0.48		$24.00			$0.10		$1,669			424.24
16	Railroad crossings*	**$3,807.59**	20	$0.10	$0.10	$1.25	$3.72	$0.80		$40.00			$0.10			$3,000.00		761.52
17	New asphalt bike lanes (both sides of street)	**$51.98**	6		$0.10	$1.50	$8.92	$0.96		$12.00		$12.00	$0.10				$6.00	10.40
17.1	Stripe Bike Lanes (both sides of street)	**$7.50**	6														$6.00	1.50

Notes:

1. Figures include a 25% contingency.
2. Figures DO NOT include survey, design, engineering, permits, inspection and other like related costs.
3. Figures are for construction costs ONLY - they DO NOT include right-of-way or right-of-way acquisition costs.
4. These cost figures represent conversion of typical construction cost elements to a linear foot multiplier. They account for typical costs associated with these types of facilities. Actual costs should be determined by a refined design or engineered plan for each individual project.
5. As time passes, material costs, site conditions or design philosophies may change that affect certain accessways, as a result, improvement designs or cost figures may need to be modified.
6. Costs DO NOT include improvements for major street/pathway crossings - if special treatments are required.

* The figures given for "railroad crossings" are for trail crossing improvements ONLY and DO NOT include the cost of crossing signals or other improvements that may be required by the affected Railroad Company and/or the State P.U.C.

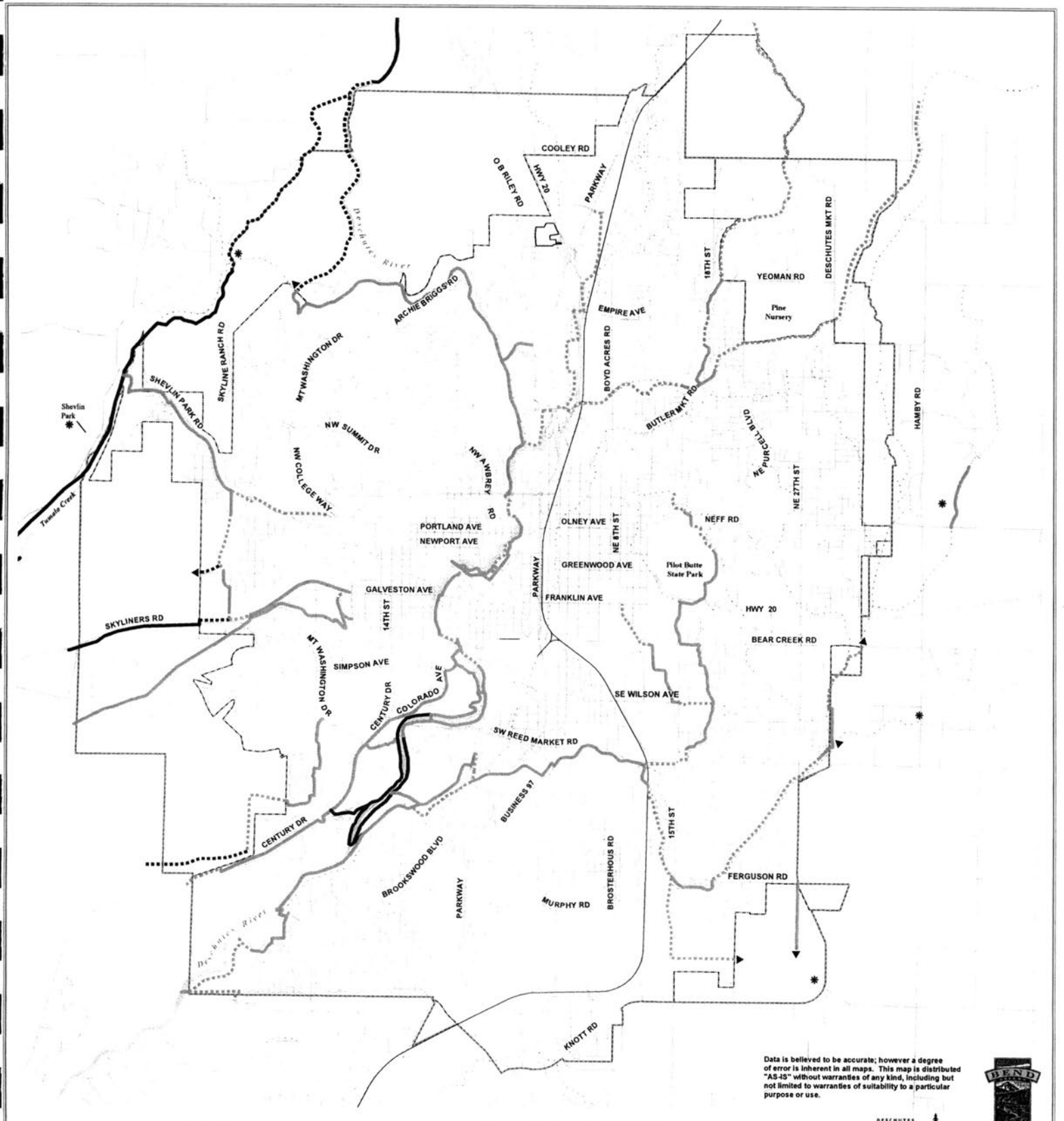
Appendix B

Primary Trail System Details

Primary Trail System Map

Primary Trail System INDEX Map

Primary Trail System Matrix



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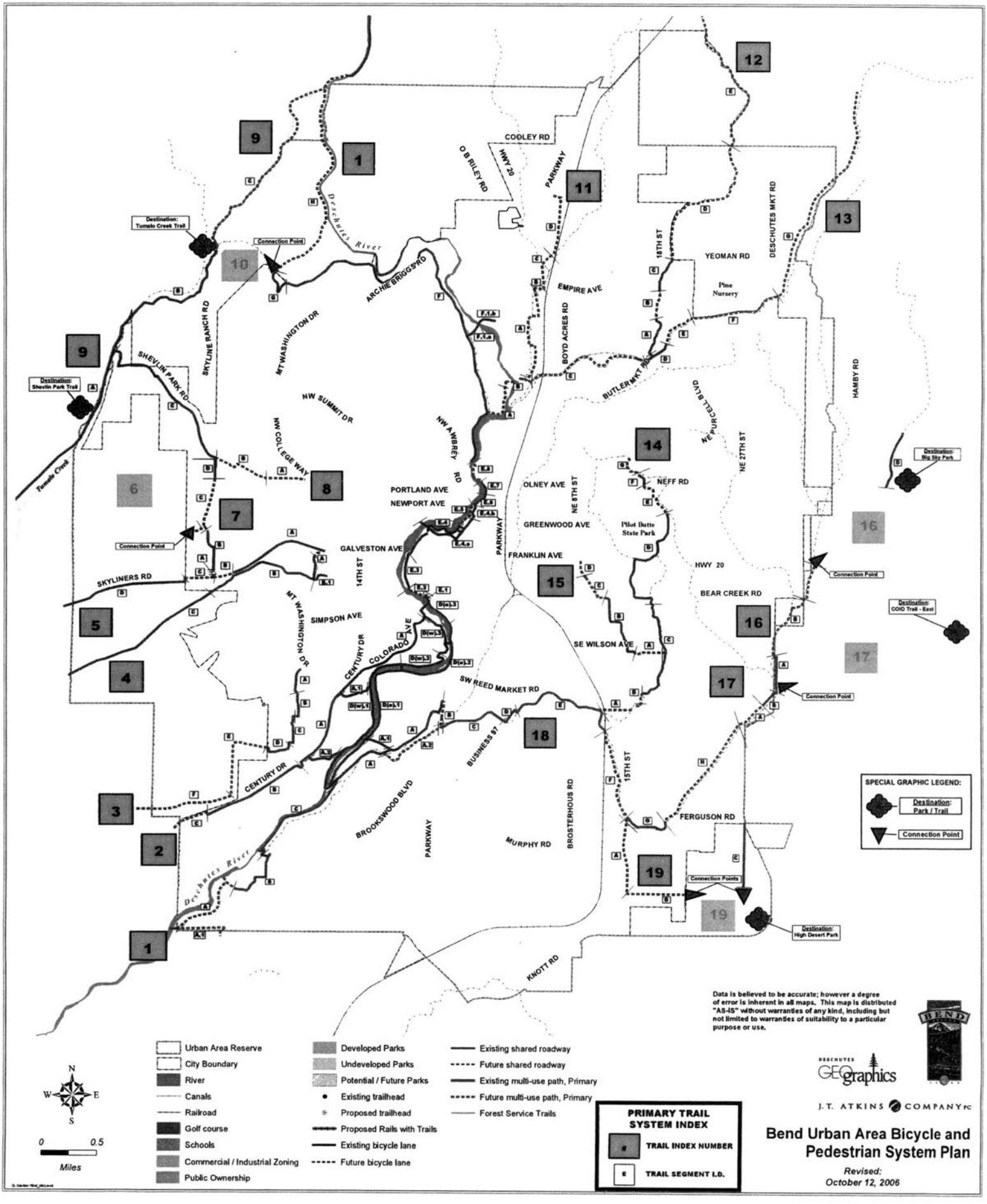
Bend Urban Area Bicycle and Pedestrian System Plan

October 20, 2006



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J.T. ATKINS COMPANY PC

Bend Urban Area Bicycle and Pedestrian System Plan

Revised: October 12, 2006

Primary Trails *1 of 4*

PrimaryTrails **P**

	• Primary Trail:	• Segment	• Proposed	• Length: (Feet)	• Type: Roadway	Trail	• R.O.W.: (Existing) Public	Private	Easement	• Improvement Need Public	Private	• Improvement Cost: Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
1	Deschutes River Trail	A	X	4,450		X		X		X	X	8	$16	$7,244	$65,192	South Reach of River Trail	10%:Public, 90%:Private
1	Deschutes River Trail	A B	X	300		X	X			X		13	$1,414	$424,278		River Xing @ South UGB	***New*** **Bridge across river**
1	Deschutes River Trail	A 1	X	2,100		X		X			X	8	$16		$34,183	South Reach of River Trail	Cinder Cone Spur & S. UGB
1	Deschutes River Trail	B		3,500		X		X	X				$0			Subdivision Street System	
1	Deschutes River Trail	C	X	5,400		X		X	X	X		7.1	$14	$73,875		COID Canal Ditch Rider Road	
1	Deschutes River Trail	D E 1		5,550		X	X	X	X				$0			South Canyon Trail	
1	Deschutes River Trail	D E 1 B		100		X		X	X				$0			River Xing @ South Canyon	Existing **Bridge** across river
1	Deschutes River Trail	D E 2		6,100		X	X	X	X				$0			Farewell Bend Pk/Old Mill	
1	Deschutes River Trail	D E 2 B		200		X	X	X	X				$0			River Xing @ Old Mill #1	Existing **Bridge** across river
1	Deschutes River Trail	D E 2 B		200		X		X	X				$0			River Xing @ Old Mill #2	Existing **Bridge** across river
1	Deschutes River Trail	D E 2 B	X	200		X		X	X		X	15	$2,121		$424,240	River Xing @ Old Mill #3	***New*** **Bridge across river**
1	Deschutes River Trail	D E 3	X	1,000		X		X			X	10	$55		$55,421	Old Mill District	
1	Deschutes River Trail	D W 1		7,650		X		X	X				$0			South Canyon Trail	
1	Deschutes River Trail	D W 2	X	2,500		X	X	X	X		X	10	$55		$138,553	Old Mill District	
1	Deschutes River Trail	D W 3		3,500		X	X	X	X				$0			Old Mill District	
1	Deschutes River Trail	D W 3 B		200		X	X						$0			River Xing @ Colorado	Existing **Bridge** across river
1	Deschutes River Trail	E 1		500		X		X	X				$0			N. of Colorado	Existing Connection to Carlon
1	Deschutes River Trail	E 2	X	850		X		X			X	10	$55		$47,108	N. of Colorado - Riverfront	
1	Deschutes River Trail	E 3		1,800		X	X						$0			Riverfront - Drake Park	
1	Deschutes River Trail	E 3 B		100		X	X						$0			River Xing @ Gilchrist	Existing **Bridge** across river
1	Deschutes River Trail	E 4		3,300		X	X						$0			Newport Br. - Pacific Park	
1	Deschutes River Trail	E 4 a		3,000		X	X						$0			Harmon - Brooks Alley	via Park/Riverside/Brooks Alley
1	Deschutes River Trail	E 4 B		200		X	X						$0			River Xing @ Nashville	Existing **Bridge** across river
1	Deschutes River Trail	E 4 b	X	1,000		X	X				X	10	$55	$55,421		Newport Br to Pacific Park	via Alley Route
1	Deschutes River Trail	E 5	X	1,100		X	X	X			X	10	$55	$60,963		Newport Br to Pacific Park	via River Trail Route
1	Deschutes River Trail	E 6		850		X	X						$0			Pacific Park	
1	Deschutes River Trail	E 7	X	650		X	X				X	10	$55	$36,024		Pioneer Park	
1	Deschutes River Trail	E 8	X	1,000		X	X	X			X	10	$55	$55,421		Pioneer Pk - 1st St. Rapids	
1	Deschutes River Trail	E 8 B	X	200		X	X	X			X	15	$2,121	$424,240		River Xing @ 1st St. Rapids	***New*** **Bridge across river**
1	Deschutes River Trail	F	X	18,550		X		X	X		X	7.1	$14	$253,773		River Run Trail	Along Tumalo Irrigation Line
1	Deschutes River Trail	F 1 a	X	700		X	X				X	7.1	$14	$9,576		Sawyer Park Spur	"West" of River
1	Deschutes River Trail	F 1 a B		100		X	X						$0			River Xing @ Sawyer Park	Existing **Bridge** across river
1	Deschutes River Trail	F 1 b		800		X	X						$0			Sawyer Park Spur	"East" of River
1	Deschutes River Trail	G		1,900		X	X						$0			Kirkaldy Ct - Awbrey Mdws	Along street system
1	Deschutes River Trail	H	X	7,300		X		X			X	6	$6		$44,895	N. of Awbrey Meadows	To North URB
		1 :		**86,850** ft.		**16.4** mi.											
2	Century Drive Trail	A		9,750		X	X						$0			Simpson, Colordo & Century	Shevlin Hixon - Mamouth Dr
2	Century Drive Trail	A 1		1,400		X		X	X				$0			Reed Mkt. Road	Century Dr. - River Trail
2	Century Drive Trail	A 2		1,800		X		X	X				$0			Mt. Bacholar Village	Century Dr. - River Trail
2	Century Drive Trail	B	X	5,100		X	X			X		7.1	$14	$69,771		Century Drive	Mamouth Dr. - Bachelor View
2	Century Drive Trail	C	X	1,600		X	X	X	X	X		8	$16	$26,044		Century Drive	Bachelor View to UGB
		2 :		**19,650** ft.		**3.72** mi.											

Primary Trails *2 of 4*

	• Primary Trail:	• Segment	• Proposed	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
3	Broken Top - South	A		1,400			X			X	X						$0			Metolius Drive	Mt. Washington Dr - Skyline Pk
3	Broken Top - South	B	X	1,400			X		X				X			8	$16	$22,789		Trail	West side of Cascade M.S.
3	Broken Top - South	C		1,400			X			X	X						$0			Subdivision Streets	
3	Broken Top - South	D	X	1,350			X			X	X		X			7	$7	$9,319		Trail	
3	Broken Top - South	E	X	3,750			X			X				X		8	$16		$61,042	Trail	Access to Alpine Pk/USFS Trail
3	Broken Top - South	F	X	3,750			X			X				X		9	$24		$89,167	Trail	Access to Alpine Pk/USFS Trail
		3 :		**13,050** ft.			**2.47** mi.														
4	Broken Top - North	A	X	500			X			X			X			- - -	- - -	Easement*		Overturf Reservoir Road	
4	Broken Top - North	B		6,800			X		X								$0			Overturf Butte Trail	to west of Mt. Washington Dr.
4	Broken Top - North	B 1		700			X		X	X	X						$0			East side of Butte	Trail Access from 17th St.
4	Broken Top - North	C		7,500			X			X	X						$0			Trail	from City limits to UAR
		4 :		**15,500** ft.			**2.94** mi.														
5	Skyliners Road Trail	A		4,850			X		X								$0			N. side of Skyliners Rd.	Existing paved trail
5	Skyliners Road Trail	B	X	900			X			X				X		10	$55		$49,879	N. side of Skyliners Rd.	West of Mt. Wash. Drive
5	Skyliners Road Trail	C	X	1,400			X			X				X		8	$16		$22,789	S. side of Sklyiners Rd.	West of Mt. Wash. Drive
5	Skyliners Road Trail	D		5,550			X			X	X						$0			S. side of Sklyiners Rd.	West of Mt. Wash. Drive
		5 :		**12,700** ft.			**2.41** mi.														
6	West Bend Trail	A	X	1,000			X			X				X		8	$16		$16,278	West Bend	Trail: Summit HS Trail to W. UGB
6	***West Bend Trail***		*X*	*9,000*			*X*			*X*				*X*		8	*$16*		*$146,500*	***West Trail location TBD***	***Trail: West UGB to Shevlin Pk***
		6 :		**10,000** ft.			**1.89** mi.														
7	Summit H.S. Trail	A	X	300			X			X				X		10	$55		$16,626	Trail	Skyliners to H.S.
7	Summit H.S. Trail	B		2,100			X		X								$0			Trail	East side of H.S.
7	Summit H.S. Trail	C	X	2,250			X			X				X		10	$55		$124,698	Trail	NW Crossing Drive to north
7	Summit H.S. Trail	D		1,100			X			X	X						$0			Trail connect. to Shev. Pk. Rd.	West Side of COCC property
		7 :		**5,750** ft.			**1.09** mi.														
8	COCC - Shevlin Park	A	X	1,800			X			X	X		X	X		9	$24	$38,520	$4,280	S. side of COCC	N side of Shev.Pk Rd/Trail (E)
8	COCC - Shevlin Park	B	X	2,800			X		X				X			3	$83	$233,230		Trail	College Way - Trail #7
8	COCC - Shevlin Park	C		7,900			X		X	X	X						$0			S. side of Shev.Pk Road	From #7 - Shevlin Park
8	COCC - Shevlin Park	C **B**		50			X		X								$0			Creek Xing @ Shevlin Park	Existing **Bridge** over creek
		8 :		**12,550** ft.			**2.38** mi.														
9	Tumalo CreekTrail	A		4,650			X		X								$0.00			Shevlin Park Trail	In park
9	Tumalo CreekTrail	B	X	7,700			X		X				X	X		4	$0.13	$963	$963	Shevlin Park Trail	In and out of park
9	Tumalo CreekTrail	C	X	6,350			X			X			X			6	$6.15	$39,053		Tumalo Ck. To URB	
		9 :		**18,700** ft.			**3.54** mi.														
10	***Buck Drive Trail***		*X*	*4,000*			*X*			*X*				*X*		10	*$55*		*$221,685*	***Buck Dr.Trail Location TBD***	***Putnam Rd to Buck Drive***
10	Buck Drive Trail	**B**	X	200			X			X			X			13	$1,414	$282,852		Creek Xing @ Buck Drive	***New*** **Bridge across Tumalo Creek**
		10 :		**4,200** ft.			**0.8** mi.														
11	North Parkway Trail	A	X	5,000			X			X	X		X	X		10	$55	$277,106	$277,106	West side of Parkway	Butler Mkt to Empire
11	North Parkway Trail	B	X	500			X		X				X			3	$83	$41,648		Parkway Crossing	Empire Avenue St. frontage
11	North Parkway Trail	C	X	1,900			X		X				X			10	$55	$105,300		East side of Parkway	Empire to Nels Anderson Rd.
11	North Parkway Trail	D		2,900		X			X								$0			Nels Anderson Rd.	From end of trail to H97
		11 :		**10,300** ft.			**2.0** mi.														

Primary Trails *3 of 4*

	• Primary Trail:	• Segment	• Proposed	• Length: (Feet)	•Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
12	Old Pilot Butte Canal	A	X	1,900			X			X	X		X			7.1	$14	$25,993		Canal ditch rider road	Tr #13 - N. edge of Basalt Bus Pk
12	Old Pilot Butte Canal	B	X	1,200			X			X			X			7.1	$14	$16,417		Canal ditch rider road	Basalt Bus. Pk. - Empire
12	Old Pilot Butte Canal	C	X	1,800			X			X	X		X			7.1	$14	$24,625		Canal ditch rider road	Empire - Yeoman
12	Old Pilot Butte Canal	D	X	6,950			X			X			X			7.1	$14	$95,079		Canal ditch rider road	Yeoman - Juniper Ridge
12	Old Pilot Butte Canal	E	X	6,000			X		X				X			7.1	$14	$82,083		Canal ditch rider road	Through Juniper Ridge Phase I.
		12 :		**17,850** ft.			**3.38** mi.														
13	North Unit Canal	A	X	1,200			X			X				X		10	$55		$66,506	River's Edge - River Frontage	Section Along G.C. & Conv Cntr
13	North Unit Canal	A B	X	1,000			X			X				X		12	$1,271		$1,271,259	River's Edge - River Frontage	**Boardwalk** Section Along G.C.
13	North Unit Canal	B	X	1,800			X		X	X	X		X	X		11	$68	$122,258	$122,258	Mt Wash./Butler Mkt to RR	10' - S/W along roadway
13	North Unit Canal	C	X	5,150			X			X	X		X			7.1	$14	$70,455		Canal ditch rider road	RR to West of Brinson
13	North Unit Canal	D	X	1,900			X			X	X		X			7.1	$14	$25,993		Canal ditch rider road	W. of Brinson - E. of Brinson
13	North Unit Canal	E	X	1,600			X			X			X			7.1	$14	$21,889		Canal ditch rider road	E. of Brinson - W. of Purcell
13	North Unit Canal	F	X	3,200			X		X				X			7.1	$14	$43,778		Canal ditch rider road	Pine Nursery Frontage
13	North Unit Canal	G	X	7,150			X			X			X			7.1	$14	$97,816		Canal ditch rider road	Desch. Mkt Rd. to North East
		13 :		**23,000** ft.			**4.36** mi.														
14	Larkspur Trail	A	X	1,800			X		X				X			3	$83	$149,933		Reed Mkt. Road	S/W. fr W.of RR to Larkspur Pk
14	Larkspur Trail	B	X	500			X		X				X			10	$55	$27,711		Larkspur Park	W. side of Senior Center
14	Larkspur Trail	C	X	4,950			X			X	X		X			10	$55	$274,335		Larkspur Trail	Larkspur Park to Bear Crk Rd.
14	Larkspur Trail	D		5,800			X		X								$0			Br Ck Rd & 15th Street	Trail S. of Br. Ck - Pilot Butte Pk
14	Larkspur Trail	E	X	1,800			X			X			X			10	$55	$99,758		Pilot Butte M. S.	Pilot Butte Pk - Neff Road
14	Larkspur Trail	F		500		X			X								$0			Eastwood Drive	Neff Road - Shepard Road
14	Larkspur Trail	G	X	1,300			X			X			X			8	$16	$21,161		Trail along Lateral Corridor	Shepard Road - Hollinghead Pk
		14 :		**16,650** ft.			**3.15** mi.														
15	Coyner Trail	A	X	1,400			X			X				X		10	$55		$77,590	East of 15th Street	Pinewood Park - 15th Street
15	Coyner Trail	B	X	3,500			X		X				X			10	$55	$193,974		W.of 15th St/N. of Wilson	Ponderosa Pk/Bear Crk School
15	Coyner Trail	C	X	1,600			X			X	X		X			10	$55	$88,674		East of 9th	Franklin Ave - Bear Crk School
15	Coyner Trail	D		700			X		X								$0			East of 9th	Franklin Ave - Bear Crk School
		15 :		**7,200** ft.			**1.36** mi.														
16	Big Sky ParkTrail	A	X	1,800			X			X	X		X			7.1	$14	$24,625		Canal ditch rider road	East Canal Trail to Big Sky Park
16	Big Sky ParkTrail	B	X	4,450			X			X				X		7.1	$14		$60,878	Canal ditch rider road	East Canal Trail to Big Sky Park
16	***Big Sky ParkTrail***		*X*	*5,000*			*X*			*X*				X		7.1	*$14*		$68,403	***Trail location TBD***	***East side trail to Big Sky Park***
16	Big Sky ParkTrail	D		2,800			X		X								$0			Canal ditch rider road	East Canal Trail to Big Sky Park
		16 :		**14,050** ft.			**2.7** mi.														
17	East Bend Canal Trail	A	X	1,400			X			X				X		7.1	$14		$19,153	Canal ditch rider road	Trail East of 27th Street
17	East Bend Canal Trail	B		850			X			X	X						$0			Canal ditch rider road	Trail East of 27th Street
17	***East Bend Canal Trail***		*X*	*(undefined)*			*X*			*X*	*X*		?	?		7.1	*$14*			***Trail location TBD***	***Trail heading east of Bend***
		17 :		**2,250** ft.			**0.43** mi.														
18	COID Canal - South	A	X	7,650			X			X	X		X			7.1	$13.68	$104,656		Canal ditch rider road	Deschutes River - Brookswood
18	COID Canal - South	A 1	X	1,250			X			X	X		X			7.1	$13.68	$17,101		Canal ditch rider road	Deschutes R. Spur to Power Hse
18	COID Canal - South	A 2	X	3,400			X			X	X		X			7.1	$13.68	$46,514		Canal ditch rider road	Trail #18.a - Brookswood
18	COID Canal - South	B	X	1,250			X		X				X			3	$83	$104,120		Blakely Road	10' S/W along old Blakely Road

Primary Trails *4 of 4*

	• Primary Trail:	• Segment	• Proposed	• Length: (Feet)	• Type:	Roadway	Trail	• R.O.W.: (Existing)	Public	Private	Easement	• Improvement Need	Public	Private	• Improvement Cost:	Segment Type	Unit Cost per LF	Public Cost	Private Cost	• Location:	• Other Comments:
18	COID Canal - South	C	X	3,200			X			X	X		X			7.1	$13.68	$43,778		Canal ditch rider road	Blakely Rd. - 3rd Street
18	COID Canal - South	D	X	1,050			X		X				X			2	$41.71	$43,796		Third Street/Brosterhous	COID Canal - COID Canal
18	COID Canal - South	E	X	5,800			X			X	X		X			7.1	$13.68	$79,347		Canal ditch rider road	Brosterhous - RR
18	COID Canal - South	F	X	4,050			X			X			X			7.1	$13.68	$55,406		Canal ditch rider road	RR - 15th Street
18	COID Canal - South	G	X	2,100			X		X				X			7.1	$13.68	$28,729		Canal ditch rider road	15th Street - Ferguson
18	COID Canal - South	H	X	5,800			X			X			X			7.1	$13.68	$79,347		COID Canal: Ferguson-27th	
		18	:	**35,550**	ft.		**6.73**	mi.													
19	High Desert Pk Trail	A	X	3,600			X			X				X		10	$55		$199,517	Trail	To High Desert Park
19	High Desert Pk Trail	B	X	2,650			X			X				X		10	$55		$146,866	Trail	To High Desert Park
19	High Desert Pk Trail	C		3,000			X		X								$0			Trail	To High Desert Park
19	***High Desert Pk Trail***	*(E-W)*	*X*	*2,650*			*X*		*X*					*X*		10	*$55*		*$146,866*	***Trail location TBD***	***To High Desert Park***
19	***High Desert Pk Trail***	*(N-S)*	*X*	*2,200*			*X*		*X*				*X*			10	*$55*	*$121,927*		***Trail location TBD***	***To High Desert Park***
		19	:	**14,100**	ft.		**2.67**	mi.													

NOTES: 1. ***Italic*** distances used for rough estimating purposes only. Actual approved alignment distances may differ. *2. **TBD** = To Be Determined*

Total All Regional Trails = 64 mi.

**** Cost of Securing a Public Use Easement Not Included***

E = River East
W = River West
B = Bridge
B = Boardwalk

Total Length of Regional Trail System (miles) =	**64**	**miles**
Regional Total Public Cost Estimate =	**$4,778,685**	***54%***
Regional Total Private Cost Estimate =	**$4,019,900**	***46%***
Regional Total All =	**$8,798,586**	***100%***

Brown Text **= Trail Alignments to be determined by subsequent 'Master Planning' for the affected areas when they are annexed into the Urban Growth Boundary area.**

Surface Type	
	: Native (blue)
	: Alternative (orange)
	: Hard (pink)

Improvement Type Code:

0	Do nothing
1	Directional signage only
2	New concrete Sidewalk: 1 side of street
3	New concrete Sidewalk: both sides of street
4	Existing single track trail
5	New single track trail - flat
6	New single track trail on side slope
7	Exist. Alignment, new crushed rock trail
7.1	Exist. Ditch-Rider Road, new crushed rock trail
8	New crushed rock trail
9	New crushed rock trail on side slope
10	New asphalt paved trail
11	New asphalt paved trail on side slope
12	Bridge: 8' wide less than 100 feet in length**
13	Bridge: 8' wide greater than 100 feet in length**
14	Bridge: 12' wide less than 100 feet in length**
15	Bridge: 12' wide greater than 100 feet in length**
16	Railroad crossings*
17	New asphalt bike lanes (both sides of street)
17.1	Stripe Bike Lanes (both sides of street)

Lookup Table

Type #	*Cost per LF*
0	$0.00
1	$0.13
2	$42
3	$83
4	$0.13
5	$1.15
6	$6
7	$7
7.1	$14
8	$16
9	$24
10	$55
11	$68
12	$1,271
13	$1,414
14	$1,907
15	$2,121
16	$3,808
17	$52
17.1	$8

Appendix C

Proposed Amendments
To the Bend Urban Area –
Transportation System Plan

Proposed Replacement Maps

TSP Index - Revision Recommendations

Table of Contents

(*Revise the Table of Contents, per the following NEW recommended sections of the TSP*)

List of Figures and Illustrations

(*Revise the list to include Figure 24 b, per the following revision to Section 6.3.1.3*)

List of Resource Documents

(Add five documents to the list of Resource Documents:

- A.11 City of Bend – BMPRD Resolution No. 228 / Intergovernmental Agreement (IGA), 2003
- A.12 Bend City Council - Transportation Implementation Plan (TIP), 2001
- B.2.1 Rails-With-Trails – Lessons Learned, U.S. Department of Transportation, 2002
- B.2.2 BMPRD – Deschutes River Trail – Action Plan, 2002
- B.2.3 City of Bend – Assessment of Bicycle and Pedestrian System Needs, August 2006

Map Exhibits

- **Replace** the existing Map A – *Bend Urban Area Bicycle and Primary Trail System Plan* with the new plan map; ***Bend Urban Area - Bicycle and Pedestrian System Plan*** *[also, switch the order of the maps, so the Roadway System Map is now "A" and* ***the Replacement Map is now "B"***]. Included in this mapping detail are the corresponding revisions to the Primary Trail System Plan (including trail realignments, deletions and additions). **Correct** all references in the TSP document to be consistent with these modifications.

- **Replace** the existing Map C - (and RENAME:) ***Bend Urban Area Primary Trail Surface Type*** *Map*, with a revised map that illustrates the revised Primary Trail System and the respective surface treatments.

TSP Text - Revision Recommendations

Chapter 4

(Add a new section: 4.2.2.4 Neighborhood Accessway System Needs:)

TSP Section 4.2.2.4 Neighborhood Accessway System Needs

Accessway Deficiencies: There may be some areas of the City where mobility for non automobile modes of travel is hampered by a lack of good system connectivity or there are certain physical or psychological barriers, such as the combination of the Parkway, the Railroad and Third Street that limit route alternatives for east-west travel across the center of town. There are no specific locations or areas that have demonstrated a bicycling or walking crash record or a degree of user difficulty that warrants urgent remedial action. And, there are undeveloped areas of the community that will need to follow a grid street pattern to ensure that an adequate system of accessways is achieved. It is anticipated that a complete accessway system will develop as other public infrastructure is constructed. As such, it is difficult to prioritize any particular accessway deficiency as a near-, intermediate- or far-term need for the community. Addressing the timing of any accessway deficiency remediation is also problematic given either the existing lack of, or limitation of, funding for these types of improvements.

Chapter 5

TSP Section 5.5.4 Bicycle and Pedestrian Facilities

(Following the first paragraph of this section, add new paragraphs, per the following:)

In August 2006, a report, prepared as a part of a DLCD grant, provided an assessment of Bend's neighborhood bicycle and pedestrian needs. The study concluded that an accessway plan for a system of neighborhood bicycle and pedestrian facilities should be included within the plan that will further augment the year 2000 TSP contemplated Primary Trail system. This report, *Assessment of Bicycle and Pedestrian System Needs* Resource Document B.2.3, is included in the TSP as a Resource Document. A new plan map; *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B) recommended by the report includes a system of accessways, primary trails and on-street bike lanes, and replaced the preexisting, 2001, Map Exhibit A, *Bend Urban Area - Bicycle and Primary Trail System Plan* Map. The referenced report and

appendices, shall serve as the plan for guiding decisions of where future accessways, primary trails and bike lanes should be located.

Generally, new *local streets* and *sidewalks* will complete the system of accessways if a regular grid street pattern is developed. However, effort should be made to complete *connector trails* where they may be identified on the plan or others that may be determined needed. Development of these accessways should maintain the criteria of being safe, feasible and practical. Primary trail, sidewalk and bike lane priorities are depicted in TSP Figures 16 a, b and c. Any new accessways that are delineated in the accessway report (Appendix "A") shall be considered as a supplement to the list of projects delineated in TSP Figures 16 a, b and c. The City should consider these priorities, or modifications thereof, during yearly capital improvement project construction planning/ budgeting.

Chapter 6

TSP Section 6.0 TRANSPORTATION SYSTEM PLAN

(The first paragraph of this section should be preceded by a new paragraph, per the following:)

The improvement components of the Bend Urban Area Transportation System Plan shall be as articulated in TSP Section 5.5 Recommended Alternative.

TSP Section 6.3 PEDESTRIAN AND BICYCLE SYSTEM

(Following the first paragraph of this section, add new paragraphs, per the following:)

In 2002, a consultant for the Bend Metropolitan Park and Recreation District prepared an implementation strategy called the *Deschutes River Trail - Action Plan.* Resource Document B.2.2. This plan provided the District with important detail to assist in guiding the development of future Capital Improvement Project planning for the river trail system and as an important background document for seeking supplemental funding resources including grants, donations and in-kind contributions.

The planned network for this system shall also include the elements defined by the August 2006, *Assessment of Bicycle and Pedestrian System Needs* Report for accessway and Primary Trail improvement recommendations. Improvement recommendations of this report shall have priority where (and if) conflicts exist between the 2000 TSP and the

2006 TSP amendments, unless otherwise stipulated in the TSP or directed by the Bend City Council.

TSP Section 6.3.1.3 Multi-Use Trails

(Add new sections of text to the end of Multi-Use Trails, per the following:)

Neighborhood Accessways: As indicated in Chapter 5 of the TSP, an August, 2006, report, provided an assessment of Bend's neighborhood accessways. The neighborhood accessway system is comprised of a wide range of facilities that include; a variety of trail types and on-street facilities, that are collectively referred to as "accessways". *[Note: The City Development Code (2006) also calls for "accessways" and/or "access corridors" – that are defined as separate travel ways for pedestrians and bicyclists that may either be within specific dedicated right-of-ways or easements for that purpose.]* The purpose of these facilities is; to minimize travel distances within and between residential areas and commercial centers, major employment areas, transit stops, or within and between nearby neighborhood activity centers such as schools and parks. The greater system of proposed accessways will provide transportation and recreation mobility opportunities for non-automobile travel through out the community. This accessway plan for the City generally uses a geographic spacing for accessways on an interval of approximately every ***quarter-mile***.

The Primary Trail plan is delineated on the *Bend Urban Area - Bicycle and Pedestrian System Plan – Map Exhibit B.* The alignments depicted as proposed should be considered general in nature. Flexibility should be permitted during the development and design of private lands to locate these planned primary trails to fit the context of the natural terrain, to minimize trail grade, to consider street crossings and other safety issues, to account for the pattern and design of the development, or consider any other topographic or geographic barriers or issues, etc. Also, while it may be suitable to locate a trail next to a street due to existing difficult to resolve issues for trail location, it is the intent of the plan to locate trails - *as much as possible* - away from streets to minimize conflicts with other types of conflicting traffic. It is also the intent of the trail system (both connector and primary) to provide direct and convenient walking and bicycling connections to parks, schools, open spaces, employment areas, shopping destinations, and the like. Balancing these trail design criteria may require a concerted coordination effort between the City, the Park District and the new development to satisfactorily locate these trails to ensure that the intent of the plan will be fulfilled.

Railroad Right-of-way Trails: There has been a growing interest nationwide in developing both "abandoned" and "active" railroad right-of-ways as part of local trail systems. One recent study examined these special trail corridors in detail; *Rails-with-Trails - Lessons Learned* Resource Document B.2.1, 2002. This report was prepared for the U.S. Department of Transportation and provides a comprehensive analysis and evaluation of current *rails with trails* (RWT) development practices. The report illustrates how trails can be successfully developed along railroad right-of-ways and provides valuable guidance concerning trail design and development that help to address important issues such as safety, liability and aesthetics.

The Springwater Trail in the Portland area (Figure 24b) is an excellent example of this type of trail development that is located along an active railroad right-of-way within the State of Oregon.

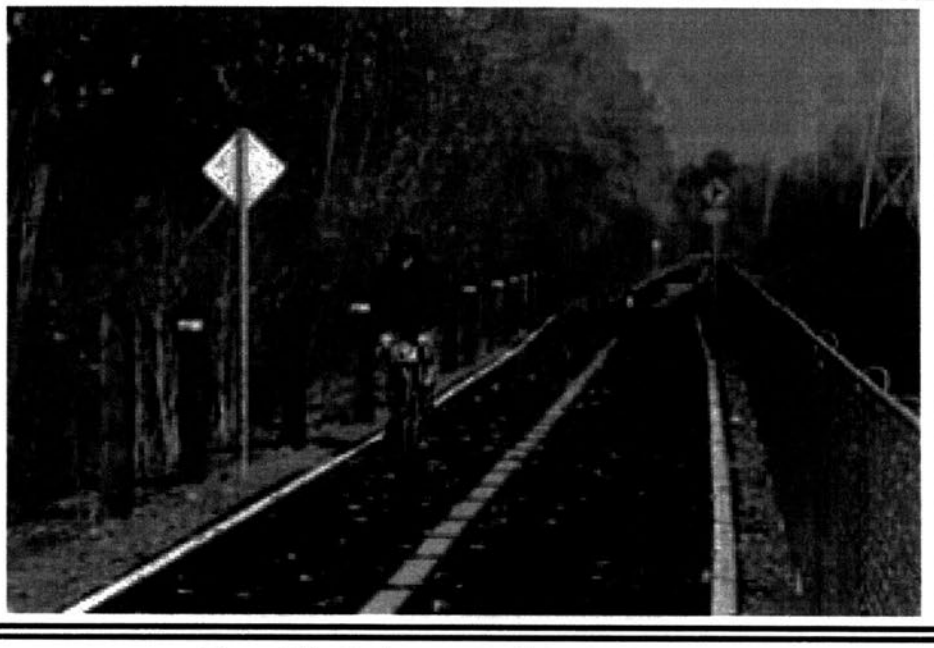


Figure 24 b. Springwater Trail, Portland, Oregon
Photo by: City of Portland

A trail within/parallel to the Burlington Northern-Santa Fe Railroad corridor in the Bend area could provide a substantial enhancement of the Primary Trail system. The *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B) illustrates the alignment of this "Rails-with-Trails" concept. It should be acknowledged that, due to site specific railroad operational requirements, alternative parallel accessway/roadway corridors may be more suitable for avoiding problematic sections of this rail-trail corridor. Also, grade-separated roadway crossings may be difficult to retrofit or may be operationally

unsuitable for joint trail and rail operation and parallel alternative routes should be considered. Typically, these alternative routes, if used, should not deviate physically too far from the intended corridor alignment (i.e., follow the nearest parallel alternative corridor). Further planning and discussion with the railroad representatives, adjacent property owners and field investigations are required to determine the feasibility of this concept.

TSP Section 6.5.1.7 Residential Local Streets

(Modify the fourth paragraph per the following underlined text and strike-out text)

The ~~Subdivision Ordinance update will~~ Bend Development Code also advocates flexibility in street design while accommodating emergency service access. It has been recognized that skinnier streets may reduce traffic speeds and thereby improve livability. The State (DLCD) has ~~been working on~~ developed guidelines that also ~~seek~~ strive to improve livability through the use of narrower streets. The City's ~~Subdivision Ordinance~~ Development Code is consistent with that objective. ~~however t~~The City will continue to explore ~~methods to~~ local street designs that balance this goal with the unique public safety characteristics of the Bend urban area ~~public safety needs and addressing the unique characteristics of the Bend urban area~~.

(Add a new section to the end of the fifth paragraph, per the following)

The *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B) provides plan guidance on where and how frequent local roadways should be developed. While this plan only depicts a grid on roughly a quarter-mile interval of the *main* local streets, further coordination should occur between the City and new development to satisfactorily locate other intervening local streets. This coordination of the full local street network should consider local land use, existing abutting development street connections and patterns, and other topographic and/or geographic barriers or issues. This more complete local roadway system should fulfill the street grid and connectivity objectives of other City plans and ordinances.

TSP Section 6.9.1 TRANSPORTATION AND LAND USE

(add NEW policy, numbered 9)

9. As areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized, the city, property owners, developers and

all applicable service districts shall work cooperatively to develop appropriate plans for extensions and connections of the transportation system, including but not limited to; roads, sidewalks, trails and/or public transportation. The objective of this planning effort will be to ensure that the new areas promote and facilitate the development of urban land use densities and systems that will fulfill the goals and objectives of the Transportation System Plan – see also: 6.9.4, Policy 22.

TSP Section 6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS
Policy:

(modify Policy 2 per the following strike-out and underlined wording)

2. The City and Park District shall work together to acquire, develop and maintain the *primary* trails designated on the ~~Bend Urban Area - Bicycle and Primary Trail System Plan Map (Exhibit A)~~ *Bend Urban Area - Bicycle and Pedestrian System Plan – Map Exhibit B.* New development shall be required to construct and dedicate Primary Trails for public use according to this plan. The alignments depicted are general in nature and shall be located according to criteria defined in TSP Section 6.3.1.3. These trails, and future trail additions, shall support the need for non-motorized travel in the community.

(add a NEW policy, numbered 19.)

19. The City shall work with the Burlington Northern – Santa Fe (BNSF) Railroad to determine where, if possible, railroad right-of-ways could be used also as trail corridors. Provided this joint-use agreement can be reached with the Railroad company, the City shall evaluate the entire Rails with Trails Corridor in light of opportunities to augment the local primary trail system and future amendments to the TSP should be considered to establish those corridors as a part of the Transportation System Plan.

(add a NEW policy, numbered 20.)

20. There are expansion plans for the city domestic water storage and supply facilities on the Overturf Butte Reservoir site, therefore the existing "connector trails" *alignments* shown on the plan shall be considered temporary in nature. These trails shall be subject to relocation if conflicts arise relative to future plans to expand or alter the water storage facilities on the Butte. Relocation of these trails to alternative alignments shall not require a Transportation System Plan amendment. In the event that these trails cannot be relocated to an alternative location that serves the same trail function on the Butte and therefore the affected trail(s) must be closed to public use, this type of action *shall* require an amendment to the TSP.

(add a NEW policy, numbered 21.)

21. The city of Bend and Bend Metro Park and Recreation District shall develop a Memorandum of Understanding (MOU) to define respective agency roles and responsibilities relative to the network of trails on Overturf Butte.

(add a NEW policy, numbered 22.)

22. As land areas that are currently beyond Bend's existing Urban Growth Boundary (UGB) are urbanized and as it relates specifically to the Bend Primary Trail System, external destinations (beyond the UGB) and specific connection points (within the existing UGB) have been delineated on the Bend Urban Area Bicycle and Pedestrian System Plan [Map A] – see also: 6.9.1, Policy 9.

TSP Section 6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS
Implementation:

(*Existing Implementation Item 1 - modify the first sentence, per the underlined text:*)

1. The City shall implement the TSP trail policies in cooperation with the Bend Metro Parks and Recreation District (BMPRD) as described in the joint agency intergovernmental agreement [Resource Document A.11], ~~dated October 1997~~ 2003, and any subsequent amendments. The City and BMPRD shall meet to review the intergovernmental agreement and make appropriate amendments, as necessary, to allocate responsibility for trail construction and maintenance.

(Existing Implementation Item 3. - add a second sentence per the underlined text:)

3. New trails shall be built generally following the priority of trails listed in the *Bend Urban Trails Plan*, or subsequent updates. New *accessways* shall be built following the system defined by the *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B) *Assessment of Bicycle and Pedestrian Needs* Report [Resource Document 2.3], as much as practical.

(Existing Implementation Item 6. - modify the first sentence with the following underlined text and insert the subsequent sentence:)

6. New and existing trails and accessways shall be created and maintained following the design standards described in the State of Oregon Bicycle and Pedestrian Plan, the Bend Metro Park and Recreation District (BMPRD) Parks, Recreation and Green Spaces Comprehensive

Plan, the Bend Urban Trails Plan, the City of Bend Standards and Specifications or subsequent updates of those documents. Local design standards shall have precedence over state standards, where there are conflicts – The BMPRD standards shall apply to the Primary Trail System and the city of Bend Standards shall apply to all other non park, related public improvements.

(*Existing Implementation Item 8 - modify the first sentence, per the underlined text*:)

8. The City shall update inventories of existing bike lanes, accessways and sidewalks, and identify gaps and missing system segments, and, in conjunction with the Deschutes County Pedestrian and Bicycle Advisory Committee, prioritize these for ~~completion and~~ input into the annual City of Bend Capital Improvement Program planning process as indicated in the Council adopted Transportation Implementation Plan (TIP).

*(Implementation: ADD a new item **[#14]** at the end of the current list:)*

14. Work with private property owners to open-up existing, public accessway easements and make improvements to accommodate public use.

*(Implementation: ADD a new item **[#15]** at the end of the current list:)*

15. The City shall work with the BNSF Railroad to determine the feasibility of the "Rails-with-Trails" concept. If this trail corridor is feasible, then the City shall develop acceptable trail designs and details for implementation of this part of the primary trail system. The City should consider subsequent amendments to the TSP to incorporate those corridors as a part of the *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B).

TSP Section 6.9.6 STREET SYSTEM
Policy:

(Existing RESIDENTIAL STREETS Policy #14: modify per the following underlined text)

14. A grid-like pattern of residential local streets shall be developed whenever practical in order to increase street connectivity within a neighborhood. A system of local streets shall be developed within a framework that is defined by the *Bend Urban Area - Bicycle and Pedestrian System Plan* (Map Exhibit B), as much as practical.

Chapter 7

TSP Section 7.2.1 Transportation System Development Charges:

(Following the first paragraph of this section, add new paragraphs, per the following:)

In 2003, the City of Bend conducted a study of the methodology, including an evaluation of the inclusion of non-automobile system capacity projects in the list of eligible improvements, and fee revisions to the City's Transportation - System Development Charges (T-SDCs) system. The Bend City Council did include sidewalk capacity improvements but chose not to include *trails* as an eligible expenditure element of the city Transportation SDCs. However, the Bend Metro Park & Recreation District included improvements to portions of the *Primary Trail System* as eligible elements of the Park SDC system, in January 2003.

(*Add a new section: 7.4.0 Transportation Implementation Plan:)*

TSP Section 7.4.0 Transportation Implementation Plan

In 2001, the Bend City Council adopted the Transportation Implementation Plan (TIP) Resource Document A.12 in an effort to provide City staff with policy direction and design criteria for implementing the goals of the General Plan and the TSP. The TIP identified 12 topic areas of guidance; nine of the subjects dealt with the completing transportation infrastructure, two with transportation studies and one concerned public involvement. The fundamental premise of the TIP was "*to continue creating a transportation system, which maximizes the ability of vehicles to flow smoothly through the city streets while providing alternative transportation modes, protecting neighborhoods and enhancing the livability of the community.*"

(*Add a new section: 7.4.2.3 Neighborhood Accessway System:)*

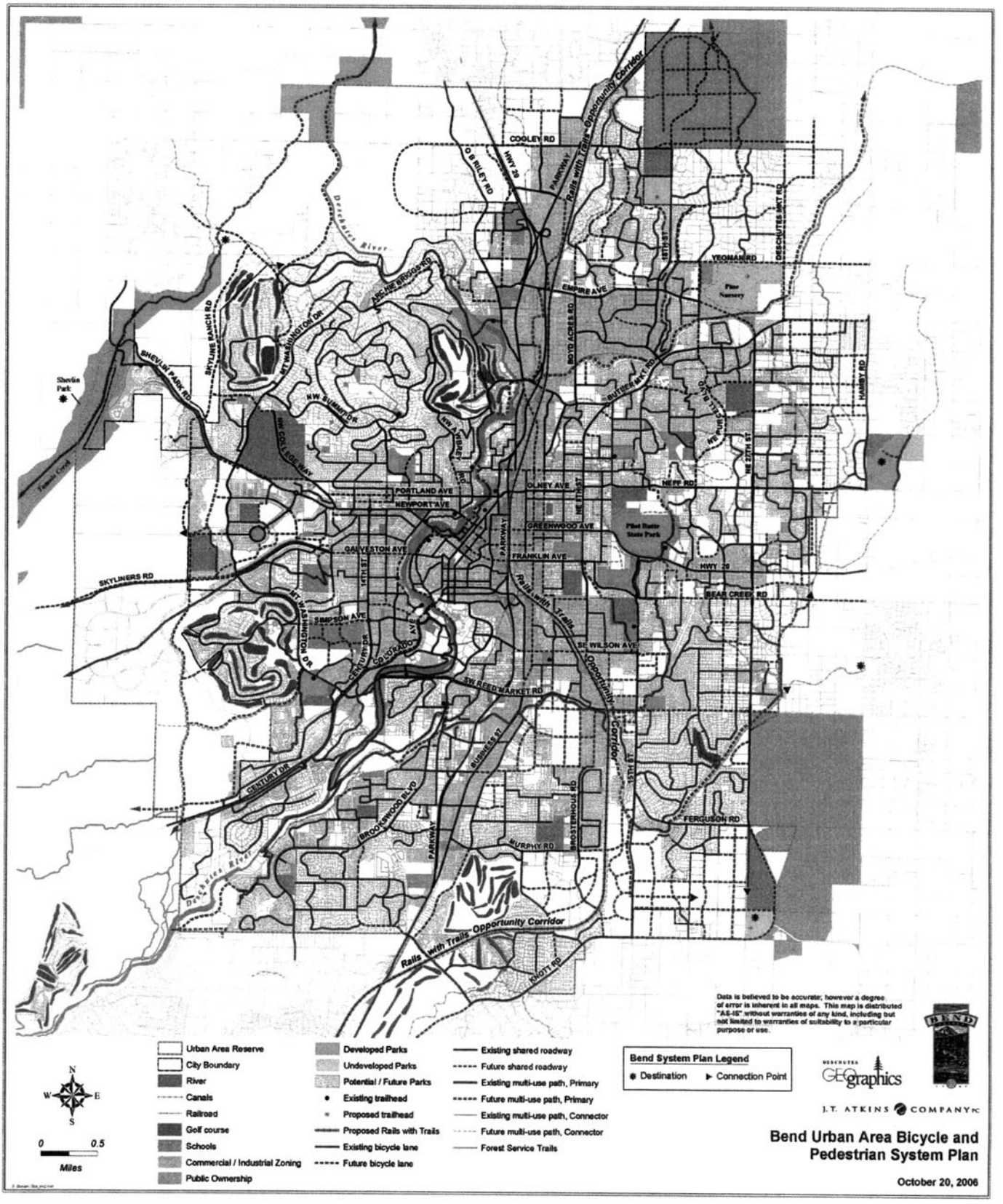
TSP Section 7.4.2.3 Neighborhood Accessway System

Completion of the neighborhood access system is anticipated to be completed by both private and public funding sources. A majority of the accessway improvements are anticipated to come through the private development process as new development materializes along the planned accessway system. The balance of the remaining accessway needs shall be completed on a prioritized schedule as public funding is identified to enable construction of the necessary improvements.

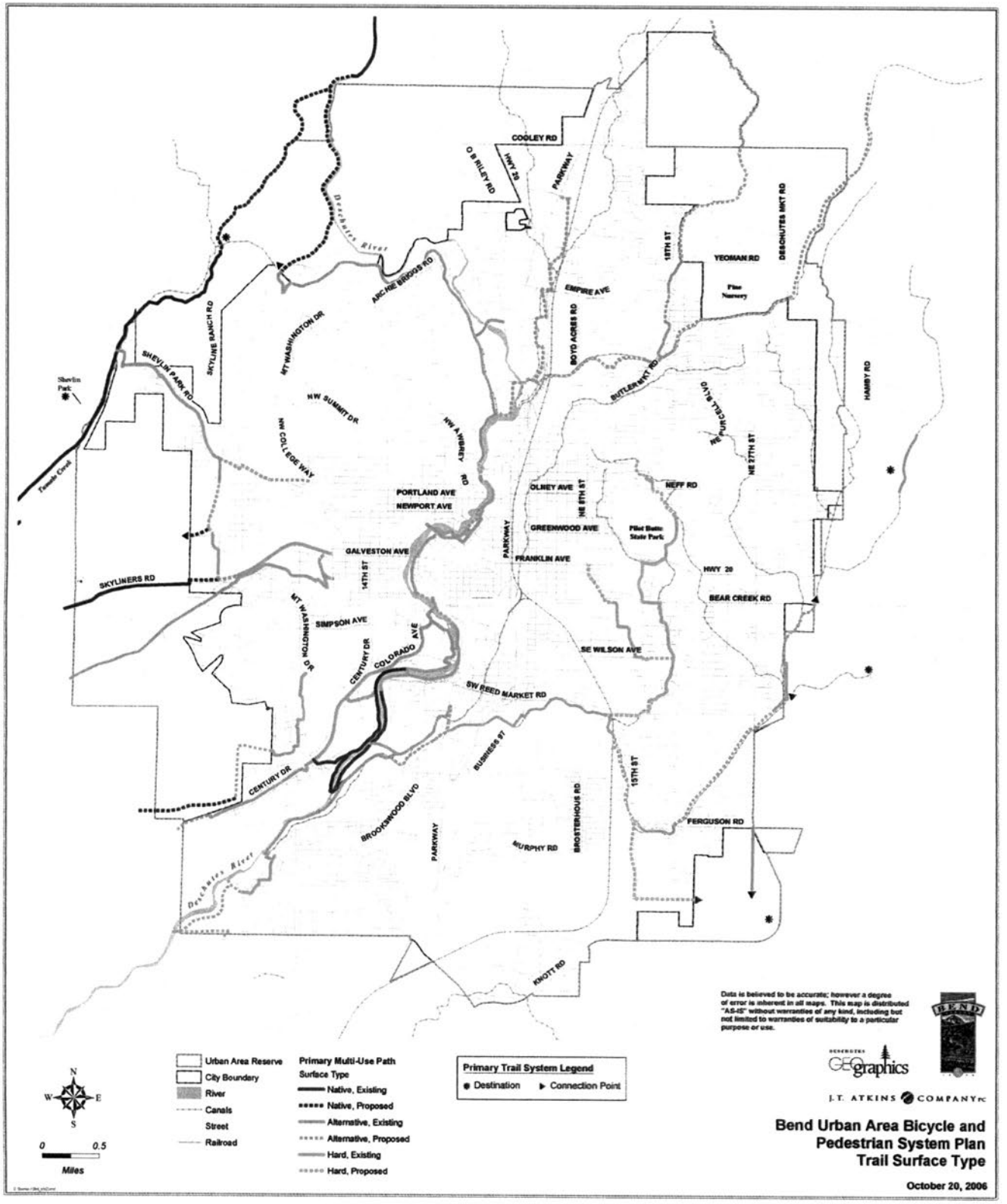
(*Add a new Policy to section 7.5, per the following:*)

8. Use the City Council adopted Transportation Implementation Program (TIP) as a guide to the development of all transportation projects in the Capital Improvement Program (CIP).

TSP – *new* Map B
(Replacement for *old* Map A)



TSP – *new* Map C
(Replacement for *old* Map C)



Appendix D

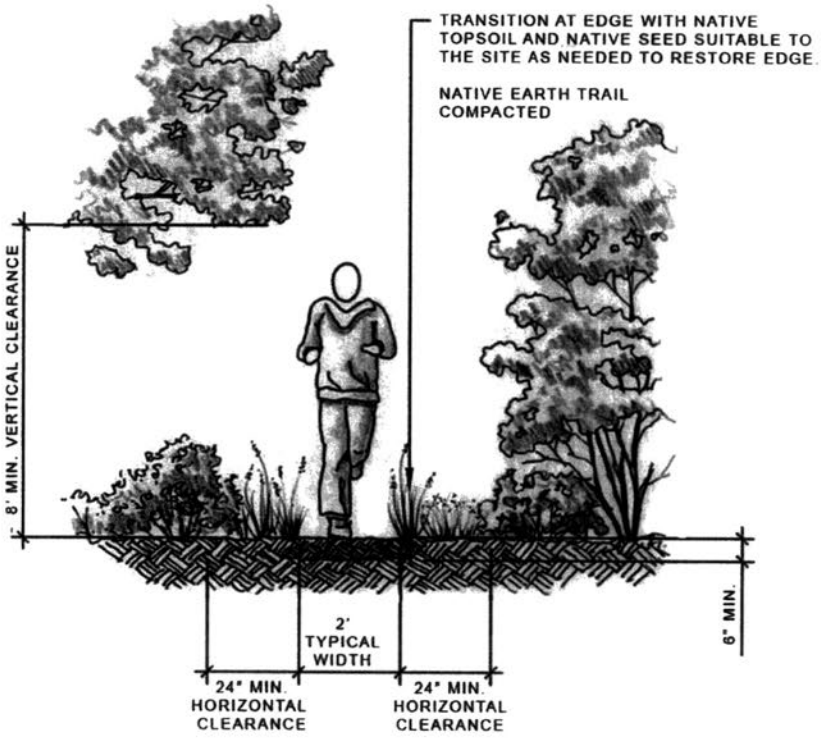
Trail Development
Standard Guidelines

Trail Development
Standard Guidelines

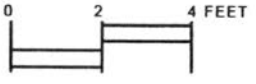
To the extent applicable, development of the City of Bend Bicycle and Pedestrian System shall comply with the construction standards and policies established by the *Oregon Bicycle and Pedestrian Plan*, 1995, or subsequent updates, unless otherwise stipulated by the Bend Metro Park and Recreation District for the "Primary" Trail system and/or the city of Bend Construction Standards for all other public improvements (streets or sidewalks).

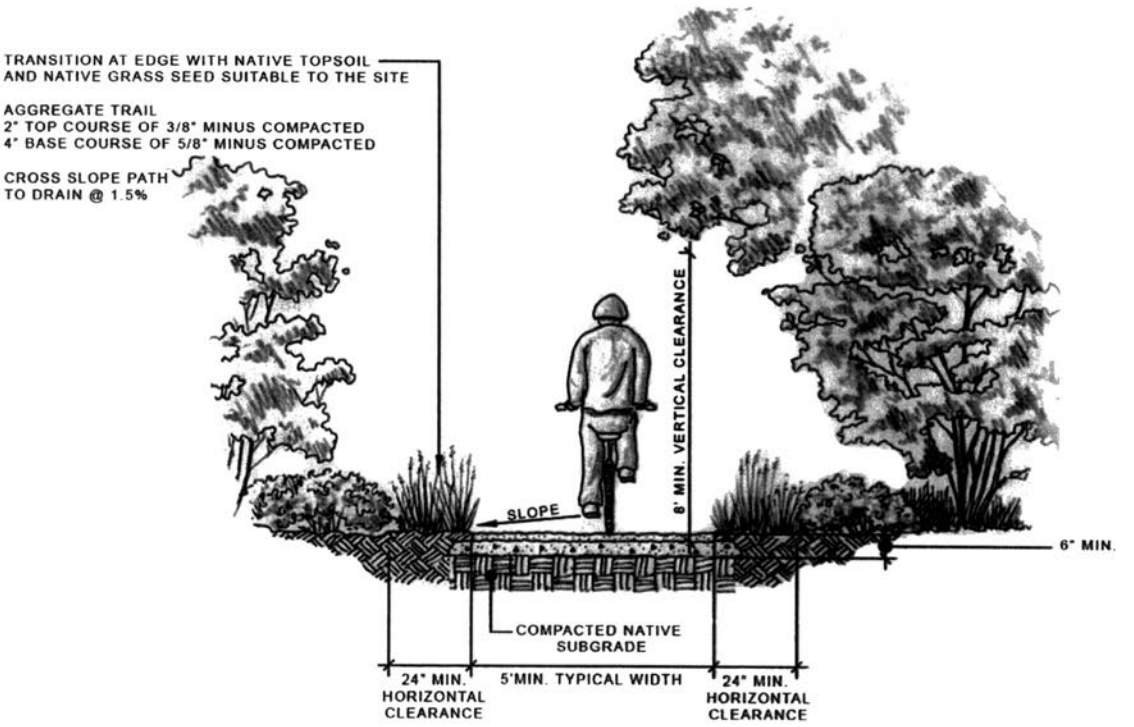
Add the following specific trail construction standard guideline drawings to the city of Bend Standards and Specifications:

- **Single Track Trail – Native Earth**
- **Connector Trail – Aggregate**
- **Connector Trail – Paved**
- **Primary Trail – Aggregate**
- **Primary Trail - Paved**

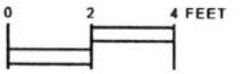


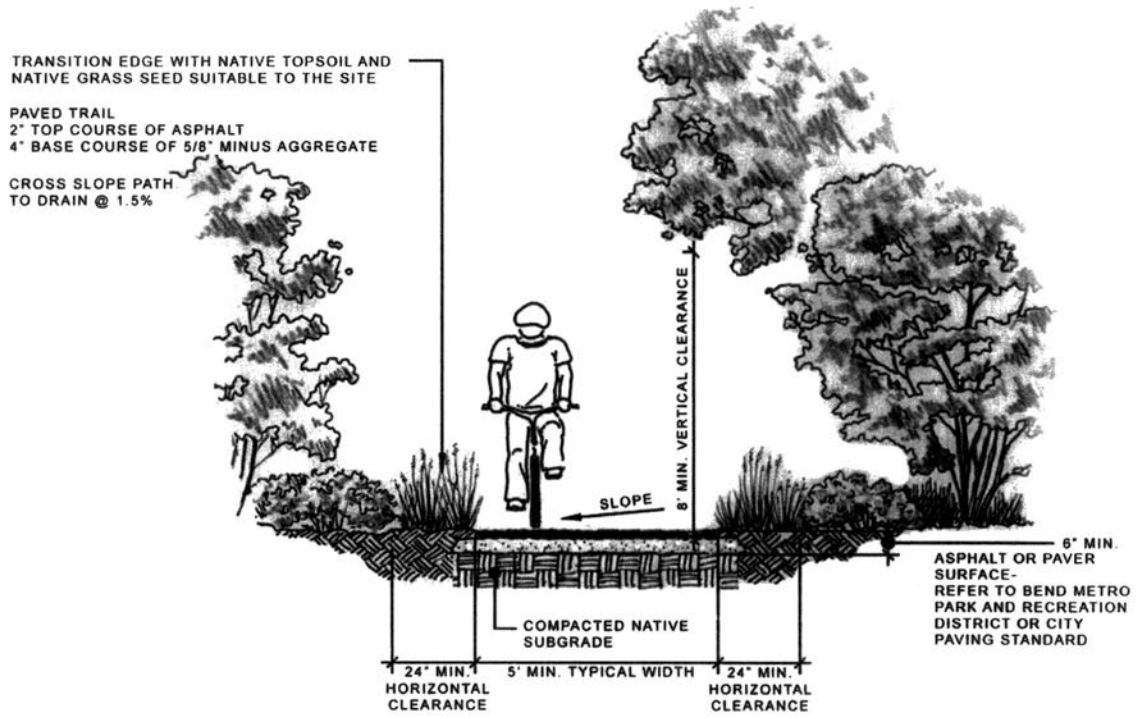
SINGLE TRACK TRAIL- NATIVE EARTH





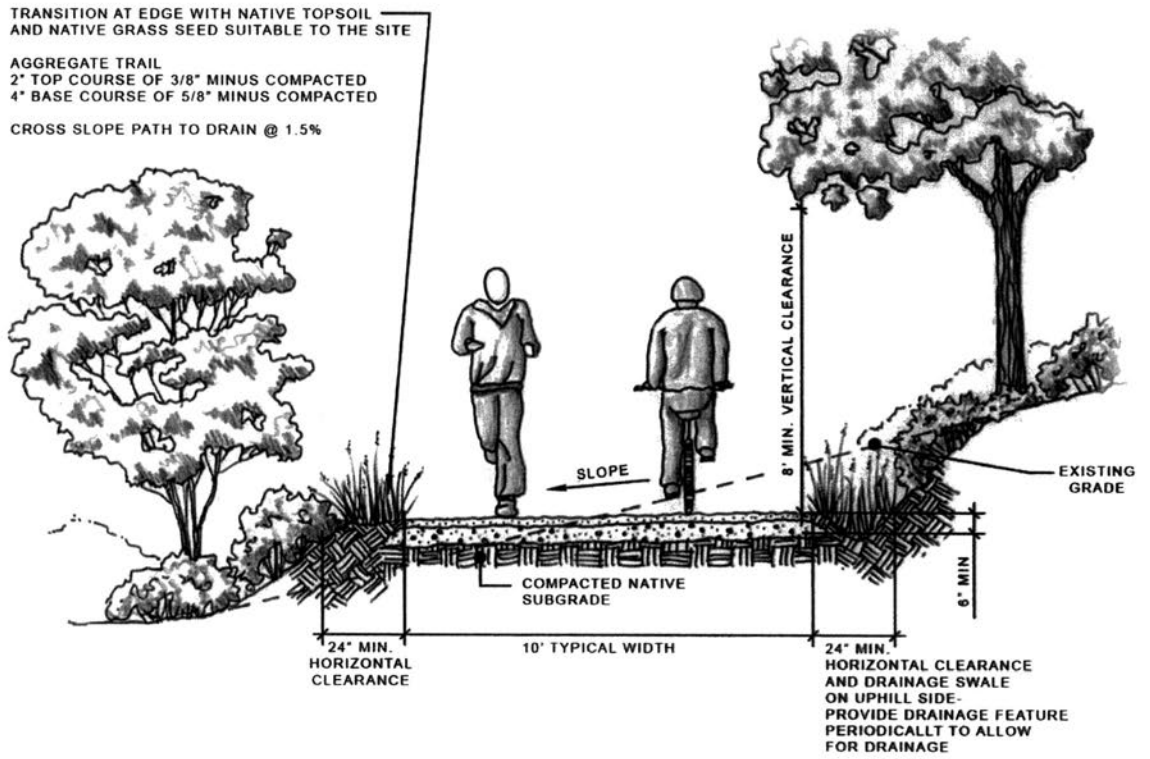
CONNECTOR TRAIL- AGGREGATE



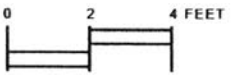


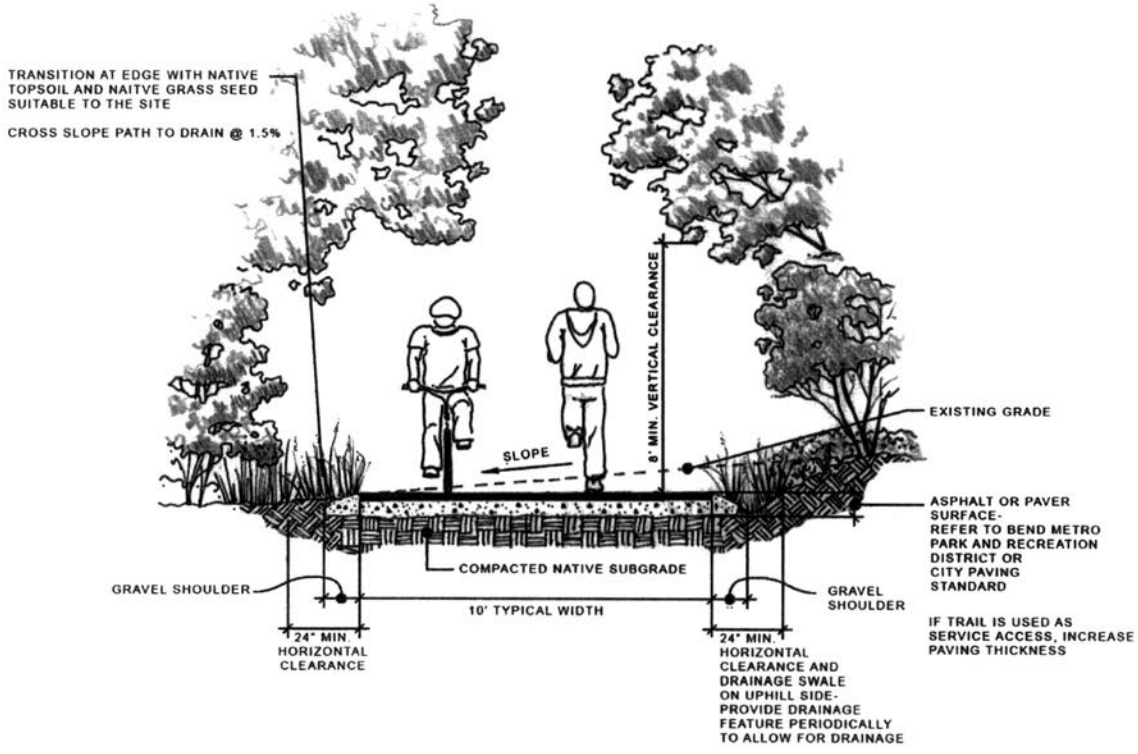
CONNECTOR TRAIL- PAVED

0 2 4 FEET



PRIMARY TRAIL- AGGREGATE





PRIMARY TRAIL- PAVED

0 2 4 FEET

Appendix E

DLCD - Bend TSP Remand Items:

Bicycle & Pedestrian Plan

Bicycle and Pedestrian Plan

1. **Conduct general assessment of bicycle and pedestrian facilities.**

2. **Conduct analysis and prepare findings regarding bicycle and pedestrian circulation in developed areas.**
   a) Divide the city into districts with similar characteristics and generally assess the status of bicycle and pedestrian facilities within each of these districts, focusing on areas near schools, shopping centers, and other destinations where pedestrian and bicycle usage is likely.
   b) Create a bicycle and pedestrian circulation plan that identifies and remedies deficiencies in the bicycle and pedestrian circulation system. The TPR requirements have not been satisfactorily addressed for *other developed portions* of the city where improvements to off-street facilities *may be necessary* to provide adequate bicycle and pedestrian circulation.

      In many cases, this plan may consist of retrofitting existing streets with adequate bicycle and pedestrian facilities and adopting land use regulations requiring adequate street connectivity and adequate bicycle and pedestrian facilities on new streets. In areas that are already developed with a well-connected street system, providing bicycle and pedestrian facilities on existing streets may be all that is necessary to comply with the TPR. However, in some developed areas that have poor local street connectivity or other off-street connections, pedestrian and bicycle circulation may be inadequate due to disconnected streets, large blocks creating out-of-direction travel, and commercial developments that do not provide adequate facilities between buildings or adjacent land uses. In these circumstances, off-street facilities such as accessways, walkways between adjacent uses or buildings, or walkways connecting cul-de-sacs to nearby destinations, may be necessary to provide adequate bicycle and pedestrian facilities.

   c) Local governments are required *to undertake a more detailed assessment* than that included in the Bend Urban Trails Plan.

      For example, the TPR states that specific measures to correct deficiencies could include "providing walkways between buildings, and providing direct access between adjacent uses." The Urban Trails Plan did not examine developed areas at this level of detail. Examples of deficiencies that should be identified include large blocks near an important destination where a pedestrian accessway would significantly reduce out-of-direction travel, or accessways between streets and buildings for large commercial developments that do not provide safe and convenient bicycle and pedestrian facilities.

3. **Prepare cost estimates for long-range sidewalk and bikeway facilities.**

4. **Modify chapters 6 and 7 to clearly identify planned improvements, costs, and phasing.**
   a) List the planned improvements on the tables or identified in Map Exhibits A-D in Chapter 6. Include in the financing program (Section 7.4 of the Transportation System Implementation chapter) these planned improvements. In particular, "long-term" projects (and cost estimates) for bicycle and pedestrian facilities.

5. **Adopt standards for bicycle and pedestrian facilities.**
   a) Adopt standards for off-street trails and accessways.

6. **Adopt implementing measures to remedy identified deficiencies.**
   a) Adopt implementing measures to remedy identified deficiencies.

Text in underlined typeface is added;
Text in ~~struckthrough~~ typeface is deleted.

ORDINANCE NO. NS-2027

AN ORDINANCE AMENDING ORDINANCE NO. NS-2019 (BEND CODE SECTION 7.875) TO CLARIFY LOAN CANCELLATION PROVISIONS AND DECLARING AN EMERGENCY

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. Bend Code Section 7.875 is amended to read as follows:

7.875 Cancellation of Payday Loan.

(a) A Payday Lender shall cancel a Payday Loan without any charge to the Borrower if, within ~~three~~ one business day~~s~~ of taking out the loan, the Borrower:

(1) Informs the Payday Lender in writing that the Borrow wishes to cancel the Payday Loan and any future payment obligations; and

(2) Returns to the Payday Lender the uncashed check or proceeds given to the Borrow by the Payday Lender or cash in an amount equal to the principal amount of the Payday Loan.

(b) A Payday Lender shall conspicuously disclose to each Borrower that the right to cancel a Payday Loan as described in this section is available to the Borrower. The Payday Lender shall disclose this requirement to the borrower in a minimum of bold 12 point type.

(c) For purposes of this section, a "business day" shall begin at the minute the Payday Lender tenders the loaned money to the Borrower and end at the same minute on the next day that the Payday Lender is regularly open for business.

Section 2.

This ordinance being necessary for the preservation of public safety and health, an emergency is declared to exist and this ordinance takes effective upon its passage.

Read for the first time the 18th day of October, 2006.

Read for the second time the 1st day of November, 2006.

Placed upon its passage the 1st day of November, 2006.

YES: 6 NO: 0 ABSTAIN: 0

Authenticated by the Mayor the 1st day of November, 2006.

Bruce Abernethy, Mayor Pro Tem

Attest:

Kim Meyers, Deputy City Recorder

ORDINANCE NO. NS-2028

AN ORDINANCE OF THE CITY OF BEND TO EXTEND THE EFFECTIVENESS OF ORDINANCE NO. 2010 KNOWN AS THE MOBILE HOME PARK CLOSURE ORDINANCE

WHEREAS, On July 7, 2006, when City Council adopted the Mobile Home Park Ordinance, Council included a sunset provision for the Ordinance to expire on December 7, 2006.

WHEREAS, the sunset provision was adopted to give mobile home park tenants the regulatory protection of the Ordinance and to begin a collaborative process of working with interested stakeholders including Park Owners to improve the Ordinance;

WHEREAS, while the collaborative process has made significant progress, additional time is needed to complete their work and develop amendments to the Ordinance:

NOW, THEREFORE, THE CITY OF BEND ORDAINS AS FOLLOWS:

SECTION ONE. Ordinance No. 2010 shall continue to be effective until March 8, 2007, when it will expire unless City Council adopts an ordinance to continue the effectiveness of the ordinance beyond that date.

Read for the first time the 18th day of October, 2006

Read for the second time the 1st day of November, 2006.

Placed upon its passage the 1st day of November, 2006.

YES 4 NO 2

Authenticated by the Mayor the 1st day of November, 2006.

Bruce Abernethy

Bruce Abernethy, Mayor Pro Tem

Attest:

Kim Meyers

Kim Meyers, Deputy City Recorder

ORDINANCE NO. NS-2029

AN ORDINANCE AMENDING THE CITY OF BEND ZONING ORDINANCE NO. NS-1178 (ZONING MAP), BY CHANGING THE ZONING DESIGNATION OF A PARCEL OF LAND AS SHOWN IN EXHIBIT "A" FROM RL, URBAN LOW DENSITY RESIDENTIAL, TO CC, CONVENIENCE COMMERCIAL.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Bend City Council has held a public hearing, considered the Hearings Officer's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Findings and Recommendation of the Hearings Officer dated September 12, 2006, file number PZ-06-281.

Section 2. Section 7(1) of Ordinance NS-1178 and the Zoning Map of the City of Bend are amended by changing the designation of the property described as Tax Lots 100, 200, 300, 301 and 400 on the Deschutes County Tax Assessor's Map 18-12-10AA described in Exhibit "A" and depicted in Exhibit "B". The change will be from Urban Low Density Residential (RL) to Convenience Commercial (CC).

Read for the first time the 18th day of October, 2006.

Read for the second time the 1st day of November, 2006.

Placed upon its passage the 1st day of November, 2006.

YES: 6 NO: 0

Authenticated by the Mayor the 1st day of November, 2006.

Bruce Abernethy

Bruce Abernethy, Mayor Pro Tem

ATTEST:

Kim Meyers

Kim Meyers, Deputy City Recorder

EXHIBIT A

STEELE PROPERTY
TL 181210 AA 00100, 00200, 00300, 00301 & 00400

PROPERTY DESCRIPTION

A parcel of land containing 3.46 acres, more or less, located in a portion of the Northeast One-Quarter of the Northeast One-Quarter (NE1/4 NE1/4) of Section 10, Township 18 South, Range 12 East, Willamette Meridian, City of Bend, Deschutes County, Oregon, being more particularly described as follows:

Commencing at the Northeast Corner of said Section 10; thence along the East line of said Section 10, South 00° 20' 50" West a distance of 400.00 feet; thence leaving said East Section line, North 89° 45' 25" West a distance of 40.00 feet to the "True Point Beginning" of this description, being the northeast corner of Lot 7, Block 3 of the plat of Vintage Faire on the westerly 40.00 foot right-of-way line of 27th Street; thence along said plat boundary line the following two courses:

North 89° 45' 25" West a distance of 431.50 feet;
North 00° 18' 48" East a distance of 350.00 feet to said southerly 50.00 foot right-of-way line of Reed Road;

thence along said southerly 50.00 foot right-of-way line, South 89° 45' 25" East a distance of 411.71 feet; thence leaving said southerly 50.00 foot right-of-way line, South 44° 42' 17" East a distance of 28.26 feet to said westerly 40.00 foot right-of-way line of said 27th Street; thence along said westerly 40.00 foot right-of-way line, South 00° 20' 50" West a distance of 330.00 feet to True Point of Beginning, the terminus of this description.

Subject to: All easements, restrictions and rights-of-way of record and those common and apparent on the land.

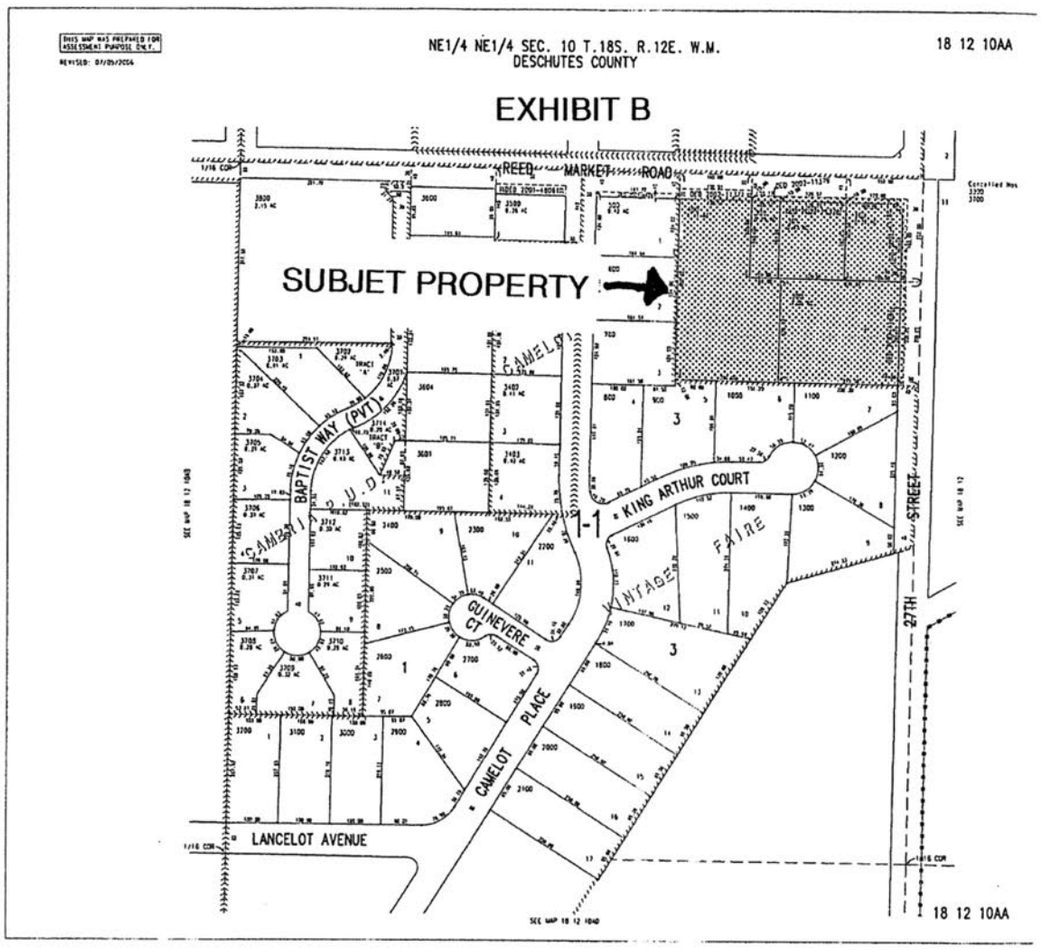
REGISTERED
PROFESSIONAL
LAND SURVEYOR

OREGON
JULY 19, 1994
DAVID R. WILLIAMS
2686

RENEWAL DATE: 06/30/06

5/2/06

S:\Land Projects\000104-REED MKT-27TH ST\documents\STEELE-PROP.doc
9/20/02


NE1/4 NE1/4 SEC. 10 T.18S. R.12E. W.M.
DESCHUTES COUNTY
18 12 10AA
EXHIBIT B
REED MARKET ROAD
SUBJET PROPERTY
CAMELOT
BAPTIST WAY (PVT)
KING ARTHUR COURT
VINTAGE FAIRE
27TH STREET
GUINEVERE CT
CAMELOT PLACE
LANCELOT AVENUE
18 12 10AA

Underlined text is added;
~~Struckthrough~~ text is deleted

ORDINANCE NO. NS-2030

AN ORDINANCE AMENDING BEND CODE SECTION 5.480 BY EXPANDING THE AREAS COVERED BY THE SAFE KID ZONE ORDINANCE, AND AMENDING BEND CODE SECTION 5.485 BY ADDING ADDITIONAL OFFESNSES AS GROUNDS FOR EXCLUSION

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1: **5.480 Purpose.**
(1) Safe Kid Zones are designated to insulate youth in those public places where youth congregate from those whose illegal conduct poses a threat to safety and welfare.
(2) Safe Kid Zones in the City are all public parks.
(3) Safe Kid Zones include, but are not limited to the following list of places:

Public Places:

The Breezeway between the western terminus of Minnesota Street to and through the Riverfront Plaza; and all publicly owned property from the eastern side of Brooks Alley to Drake Park between Franklin Avenue and Oregon Avenues.

Public Parks
Al Moody Park Site - Daggett Lane
Alpine Park Site - SW Swarens Ave./Century Drive
Awbrey Village Park - 3015 SW Merchant Way
Blakely Park - 1155 SW Blakely
Brandis Square
Brooks Park - 35 NW Drake Road
Columbia Park - 264 SW Columbia Street
Compass Park Site - NW Crossing Drive
Davis Park Site
Deschutes River Trail
Dohema River Access
Drake Park - 777 NW Riverside
Farewell Bend Park - Southern Crossing
First Street Rapids Park - NW First Street
Foxborough Park - 61308 Sunflower Lane
Genna Stadium
Harmon Park - 1100 NW Harmon Road
Harvest Park - 20220 Morgan Loop
Hillside Park - 2050 NW 12th Street/1116 NW Trenton Ave
Hixon Park Block - 125 SW Crowell Way
Hollinshead Park - 1235 NE Jones Road
Hollygrape Park - Hollygrape Street
Jaycee Park - 478 Railroad Street
Juniper Swim & Fitness Center
Juniper Park - 800 NE 6th
Kiwanis Park - 800 SE Centennial Street
Larkspur Park & Bend Senior Center - 1700 SE Reed Market Road
Larkspur Trail - 1700 SE Reed Market Road
Lewis & Clark Park - 2520 NW Lemhi Pass Drive
McKay Park - 166 SW Shevlin Hixon Drive
Mt. View Park - 1975 NE Providence Drive
Orchard Park Site - 4th Street/ Seward Avenue
Overturf Park Site - 17th Street
Pacific Park (Administration Office) - 200 NW Pacific Park Lane
Pageant Park - 691 Drake Road
Park Services Center - 1675 SW Simpson

Pine Nursery Park - East of Purcell Street at Empire Ave Intersection
Pine Ridge Park Site - Intersection of Columbine Lane and Porcupine Dr
Pine Tree Park Site - Intersection of Purcell Street and Empire Ave.
Pioneer Park - 1525 Hill Street
Ponderosa Park - 225 SE 15th Street
Providence Park - 1055 NE Providence Drive
Quail Park - Regency Street
Riverbend Park - Columbia Street and Shevlin Hixon Drive
River Canyon Natural Area

5.485 Civil Exclusion.
(1) A person is subject to exclusion for a period of 90 days from entering or remaining in the area within 500 feet of a Safe Kid Zone if that person has been cited to appear, arrested or otherwise taken into custody within a Safe Kid Zone for:
(a) Any Assault, as defined by ORS 163.160 - 185 and 163.208,
(b) Menacing, as defined by ORS 163.190,
(c) Harassment, as defined by ORS 166.025,
(d) Disorderly Conduct, as defined by ORS 166.025,
(e) Recklessly Endangering, as defined by ORS 163.195,
(f) Coercion, as defined by ORS 163.275,
(g) Any sexual offense, as defined by ORS 163.355 - 465,
(h) Endangering the Welfare of a Minor, as defined by ORS 163.575,
(i) Any offense under State law governing the possession, distribution, sale or manufacture of controlled substances,
(j) Any offense under State law governing the possession, distribution or sale of alcoholic beverages,
(k) Possession or using a weapon in violation of ORS 166.180, 166.190, 166.220, 166,240, 166.250 or 166.272 or City Ordinance NS-1361, Section 5.025,
(l) Being under the influence of intoxicating liquor or controlled substances, as defined by ORS 426,460,
(m) Any degree of criminal mischief, as defined by ORS 164.305 through 164.365.
(n) Possession of tobacco by a minor in violation of ORS 167.400.

(2) If a person excluded from a Safe Kid Zone is found within the perimeter of the Safe Kid Zone and its 500 foot protective buffer zone during the exclusion period, that person may be arrested for trespass in the second degree, as defined by ORS 164.245.

Read for the first time the 1st day of November, 2006.

Read for the second time the 15th day of November, 2006.

Placed upon its passage the 15th day of November, 2006.

YES: 6 NO: 0 ABSTAIN: 0

Authenticated by the Mayor the 15th day of November, 2006.

Bill Friedman, Mayor

Attest:

Patricia Stell, City Recorder

ORDINANCE NO. NS-2031

AN ORDINANCE AMENDING THE CITY OF BEND DEVELOPMENT CODE NS-2016 BY ADDING A REFINEMENT PLAN OVERLAY DISTRICT TO CHAPTER 2.7 AND AMENDING THE ZONING MAP, BY CHANGING THE DESIGNATION OF PROPERTY LOCATED WEST OF THE BEND PARKWAY, SOUTH OF PINEBROOK BLVD AND NORTH OF THE CITY'S URBAN GROWTH BOUNDARY.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Bend City Council has held a public hearing, considered the Planning Commission's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Findings and Recommendation dated August 28, 2006, regarding file PZ-05-547.

Section 2. The City of Bend Development Code NS-2016 is amended by adding Section 2.7.800; Murphy Crossing Refinement Plan as described in "Exhibit E".

Section 3. The City of Bend Zoning Map is amended by changing the designation of the property shown in "Exhibit A" from Residential Urban Low Density (RL) and General Commercial (CG) to Residential Urban Standard Density (RS), Residential Urban Medium Density (RM), Public Facilities (PF), Mixed Employment (ME) and General Commercial (CG).

Read for the first time the 1st day of November, 2006.

Read for the second time the 15th day of November, 2006.

Placed upon its passage the 15th day of November, 2006.

YES: 6 NO: 0

Authenticated by the Mayor the 15th day of November, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City of Bend Recorder

Exhibit E

2.7.800 Murphy Crossing Refinement Plan

Sections:

2.7.810 Purpose.

The purpose of the Murphy Crossing Refinement Plan is to implement the Murphy Crossing Master Development Plan and the Bend Urban Area General Plan policies regarding the Murphy Crossing property, and to create overlay development standards for the residential, commercial and mixed use districts and designated open space within the plan boundaries. The overlay development standards will:

- Provide a variety of employment opportunities and housing types;
- Locate residential uses adjacent to the existing neighborhoods west of the site;
- Create opportunities for large-scale retail uses as well as community commercial and small scale businesses in selected locations to foster a mixed-use district;
- Promote pedestrian and other multi-modal transportation options;
- Ensure compatibility of uses within the development and within the surrounding area;
- Create an interconnected system of streets with standards appropriate to the intensity and type of adjacent use; and
- Create safe and attractive streetscapes that will meet emergency access requirements and enhance pedestrian and bicycle access.

2.7.820 Districts.

A. Applicablility. The standards provided for the Murphy Crossing Refinement Plan area by this section shall supercede the otherwise applicable standards of this Development Code, except where those other standards expressly state they are to supercede the standards of this section.

B. District Location. The location of the zoning overlay districts are depicted on the adopted Murphy Crossing Master Development Plan map and as described below.

Table 2.7.820B

Zoning Overlay District (Zone)	Location and Characteristics
Park / Open Space (PF)	This area is centrally located within the Refinement Plan area and is intended for Park development by the Bend Metro Park and Recreation District as a neighborhood park.
Park Open Space (RL)	These open space areas serve as a special buffer between more intense development and / or new roadway alignments. The open space area can provide passive pedestrian connections linking existing residential development with the new Murphy Crossing commercial center.
Single Family Residential (RS)	Located along the western boundary of the refinement plan area and predominately north of Romaine Village Way, this area provides a transition between the existing Low Density Residential (RL) housing and the new Murphy Crossing development. The minimum lot size within the RS zone will be 6000 sq ft. with a minimum lot depth of 100 feet when lots abut existing RL development. Homes may be clustered or attached as zero lot line to provide maximum preservation of existing trees.
Multi-family Residential (RM)	The RM overlay located within the central plan area provides a transition between the new standard density single family homes and the more intense commercial development along the easterly portion of the refinement plan area. The density range within the central core

	shall be 10 to 21.7 units per gross acre. RM development is also located at the north and south ends of the plan area along the Parkway. The density range within these areas shall be 7.3 to 15 units per gross acre.
Mixed Use (ME)	The Mixed Use District is applied to areas of Murphy Crossing adjacent to primary commercial streets, to provide opportunities for a variety of smaller-scale, pedestrian-oriented commercial uses located in ground floor street frontages, with residential uses and offices above. Residential units may be located on the ground floor when adjacent to other multi-family housing. The residential density for the residential component of mixed use projects shall not exceed 21.7 units per gross acre.
General Commercial (CG)	Located primarily between the Bend Parkway and the north/south frontage road, the General Commercial District provides for a mix of commercial uses with large site requirements and smaller-scale service commercial uses that can provide a pedestrian-oriented street frontage.

C. Permitted Land Uses. Unless otherwise specified in the table below, the land uses listed within the applicable zoning Districts within this Development Code shall be permitted, subject to the provisions of this Code.

Table 2.7.820C

Land Use	RS	RM	ME	CG
Residential				
Single Family Detached (as primary use)	P	N	N	N
Single Family Attached (Townhomes or Condominiums) • as primary use • as secondary use	P (max. 2 units) N	P N	N P	N C
Multi-family • Duplex / Triplex • Multi-units	N N	P P	P P	N N
Commercial / Mixed-use				
All Commercial / Mixed-use Buildings • Building footprint less than 10,000 sq ft. • Building footprint 10,000 – 20,000 sq ft. w/ max building size of 30,000 gross sq ft. • Building footprint 20,000 -50,000 sq ft. w/max building size of 60,000 sq ft. • Building footprint greater than 50,000 sq ft w/max building size of 100,000 sq ft. (location restricted to the north 400 ft of the CG zone)	N N N N	N N N N	P C N N	P P P P
Recreation Facilities	N	N	C	C

D. Special Development Standards. In addition to the development standards outlined in the City's Development Code, the following standards shall apply as indicated.

Table 2.7.820D

Standard	RS Single Family	RM Multi-family	ME Mixed-Use	CG General Commercial
Density	2.3 -7.3 units/gross acre	7.3 - 21.7 units/gross acre (special location standards for density apply, see Table 2.7.820B)		NA
Lot size	6,000 sq ft min.	2,000 sq ft min.	NA	NA
Setbacks: • Front	Min. of 6 feet for home, 20 feet for garage	Min. of 6 feet for home, 20 feet for garage. Building entrances shall be	Min. of 5 feet Max. setback shall be 10 feet. Except Forecourt frontage	Min. of 5 feet Max. setback shall be 10 feet. Except Forecourt frontage

Standard	RS Single Family	RM Multi-family	ME Mixed-Use	CG General Commercial
		oriented to the street front. Max. setback shall be 10 feet.	may be 20 ft.	may be 20 ft.
• Side	Min. of 5 feet for one side and the sum of two side yards shall be 12 ft.	Min. of 5 feet	No minimum required, except when abutting an "R" zone see 2.2.500(E)	No minimum required, except when abutting an "R" zone see 2.2.500(E)
• Rear	Min. 15 ft.	Min. 10 ft	No minimum required, except when abutting an "R" zone see 2.2.500(E)	No minimum required, except when abutting an "R" zone see 2.2.500(E)
Lot coverage	35%	40%	50%	NA
Building Height	35 ft	30 ft / two stories for buildings fronting on Murphy Road and the local north/south street bordering the Park. 40 ft / three story buildings are permitted elsewhere. *See Exceptions below	45 ft / three stories	
Lot access	Where new RS lots abut existing RL development, access shall be from the street. All other lots shall access from an alley.	All vehicular access shall be from an alley / private drive or internal parking lot.		
Parking Standards	As required by Chapter 3.3, except for the large box retail uses located in the north 400 ft of the CG zone, those uses may provide a maximum of 6 parking spaces per 1000 gross sq. ft. of building area.			
Frontage types	Not regulated	• Front Yard and Porch • Stoop	• Stoop • Forecourt • Storefront	• Forecourt • Storefront • Gallery
Min. Building Frontage	Not regulated	50%	80%	65%
Special Landscape Setback	1. Development along the east side of the north/south local street bordering the Park between Murphy Road and the southern frontage road alignment shall provide an additional 10 foot landscaped pedestrian easement. The easement shall be combined with the street right of way to provide a pleasant pedestrian trail system the length of the Murphy Crossing project area that will easily connect to existing and planed trails, parks and open space. The pedestrian trail replaces the required sidewalk along that street frontage. 2. Development along both sides of the frontage road between Murphy Road and the Parkway off ramp / round-about shall provide an additional 4 feet of sidewalk adjacent to the public sidewalk.			
Architectural Design	As required by Chapters 2.1.900 and 2.2.800			

*Single family homes on adjoining lots shall share a common wall where it can be shown that tree preservation can be can be maximized.

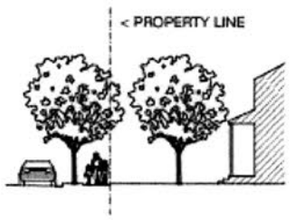
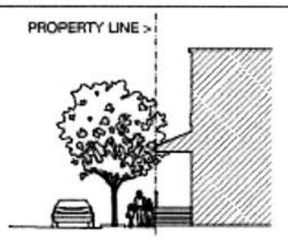
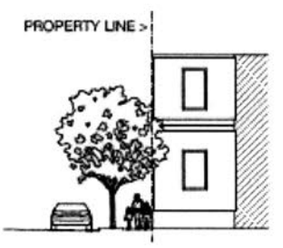
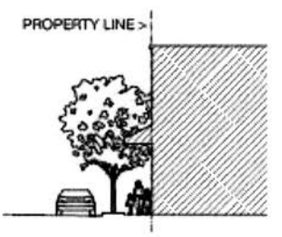
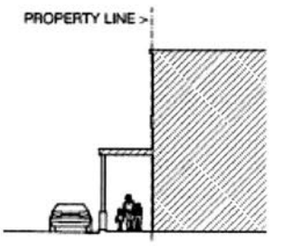
1. **Buffering Standards**. All loading and delivery areas shall be oriented away from residential neighborhoods and screened from view using a combination ov vegetation, fences and walls.

2. **Building Height Exceptions:** Buildings in the RM zone that front on Murphy

Road and the local north/south street which borders the park may be 40 feet tall or 3 stories when the portions of the building over 30 feet in height step back a minimum of 30 feet from the front property line.

E. Frontage Types. The street facing façade of each proposed building shall be designed as one of the building frontage types allowed by the applicable zoning district as indicated above in Table 2.7.820D. Building frontage placement on the lots shall comply with the setback requirements of the applicable zone. For the purpose of this code, building frontage means the lineal length of façade facing the street.

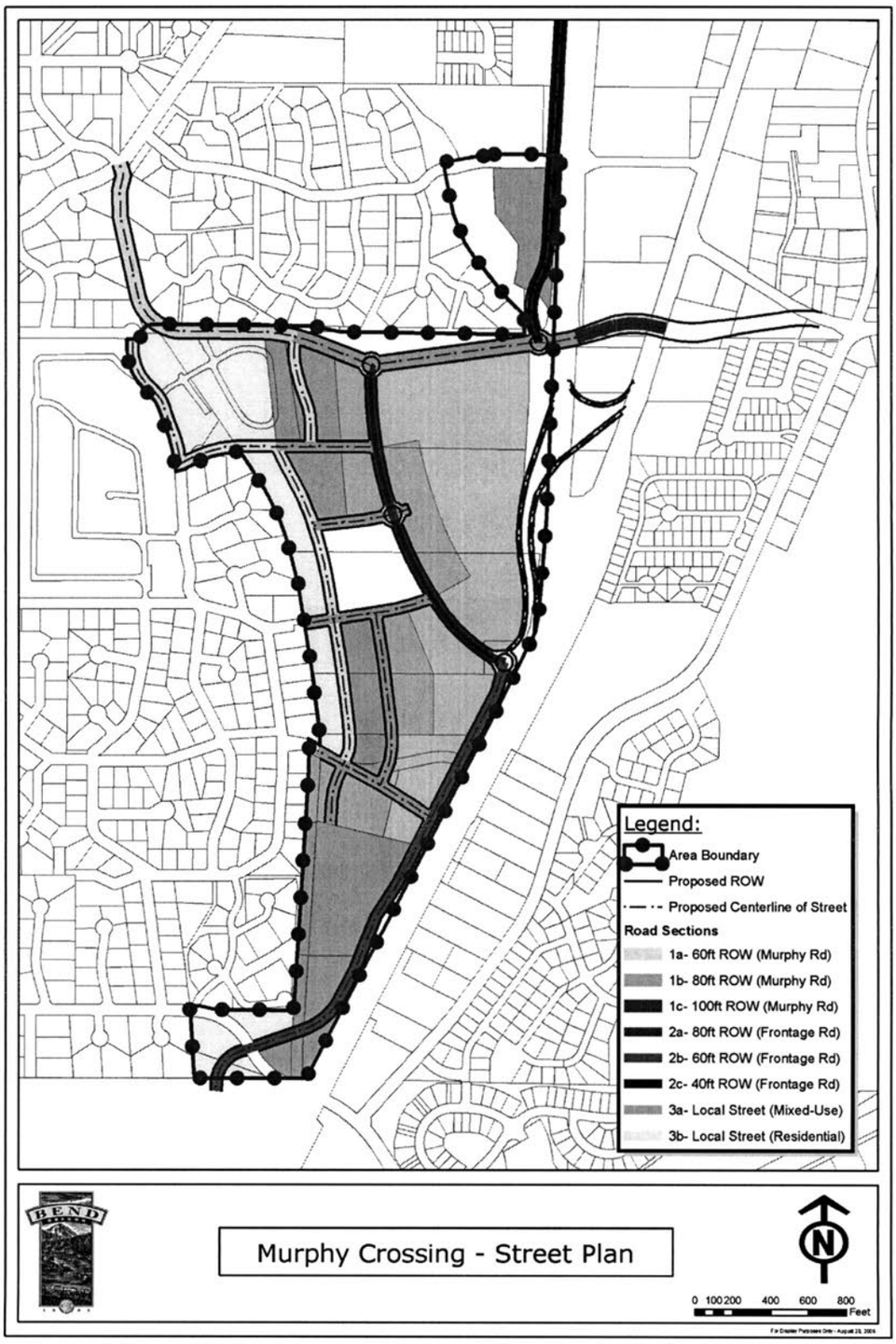
Table 2.7.820E

1. Front Yard and Porch The building façade is set back from the property line (frontage line) as required by the applicable zone, with a front porch providing a covered entry. A fence or wall not more than 36 inches high may define the private space of the year. Porches shall be at least six feet deep and 12 feet wide and may be elevated no more than 36 inches above the surrounding grade.	
2. Stoop. The building façade is placed close to the property line with the ground floor either elevated a minimum of 24 (but no more than 36 inches) above the sidewalk, or the façade is up to 10 feet from the back of the sidewalk, with an optional low fence not more than 36 inches at the back of the sidewalk. This type is suitable for ground floor residential uses with minimal setbacks.	
3. Forecourt. Most of the building façade is at the property line with a portion of the façade set back. The resulting forecourt is suitable for gardens, restaurant seating, or an entry plaza. This type should be used sparingly and in conjunction with other Frontage Types, as an extensive setback deters pedestrians. Trees within Forecourts should be placed to have their canopies overhang the streets sidewalk. A low wall of fence no greater than 36 inches high may also be placed at the property line.	
4. Storefront. The building façade is placed at or close to the property line with the building entrance (which may be recessed) at sidewalk grade. This Frontage Type is intended for retail uses and is commonly equipped with an awning. An awning extending over the public sidewalk requires City approval. Transparent windows shall occupy at least 65% of the first floor wall area of each storefront.	
5. Gallery. A gallery is a storefront with an attached colonnade that projects over a sidewalk. This Frontage type is intended for retail use, but only when the sidewalk is fully covered by the arcade so that a pedestrian must walk under it. The City must approve any portion of the structure that extends into the public right of way.	

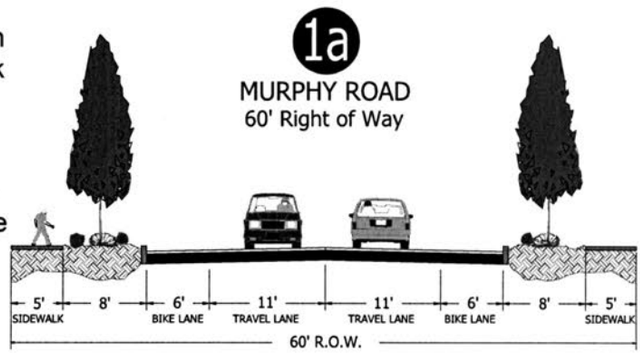
F. Street Design Types. The roads within Murphy Crossing will have different designs based on their location and function. The diagram is the key to the different street types. Each street type design will be illustrated in a cross section and described below.

The designated streets within Murphy Crossing are required street elements.

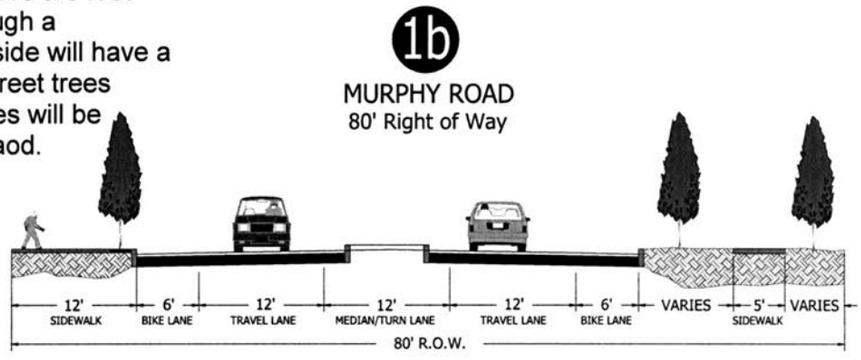
The street alignments depicted are generally located to provide reasonable lot sizes and connectivity within the refinement plan area. During tentative plan development or site plan review, the street alignments proposed streets shall be shown in there general location. The street alignments may move up to 30 feet in one direction without requiring a refinement plan amendment.



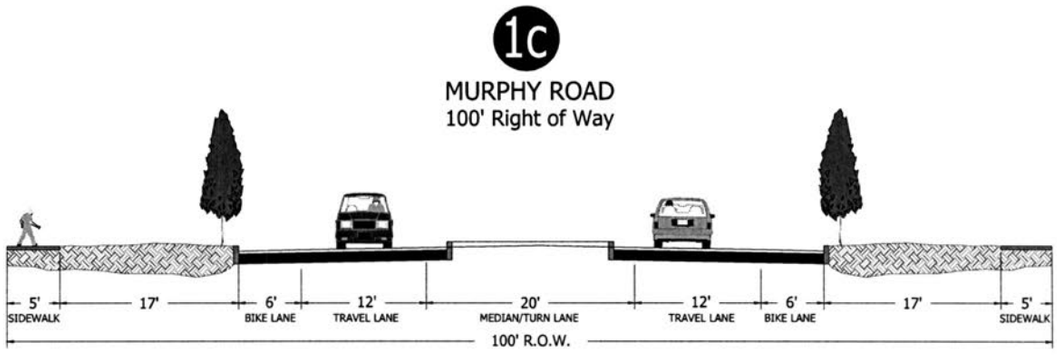
Murphy Road - Murphy Road will transition From a 60' right-of-way to 100' feet and back to 60' as the road moves from east to west across the Parkway. The 60' segments will consist of two travel lanes with pedestrian sidewalks along both sides separated by the a landscaped planter strip. Bike lanes will be located on both sides of the street.



The 80' section is located between the west side of the Parkway and the last intersecting street before Brookswood Blvd. This street section will have two travel lanes divided by a 12' partially landscaped median with turn pockets. The northside will have a 5 foot side walk that meanders through a landscaped strip. The south side will have a 12 foot urban sidewalk with street trees placed in tree wells. Bike lanes will be located on both sides of the raod.

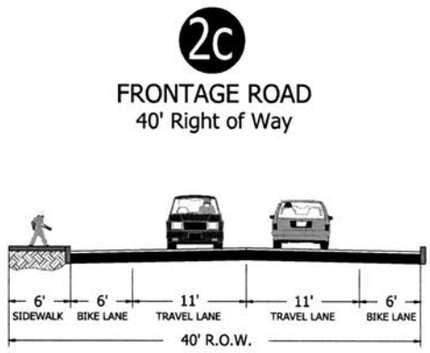


The 100' Section Is located on both sides of Third Street and is needed for the intersection turn lanes and through movements.

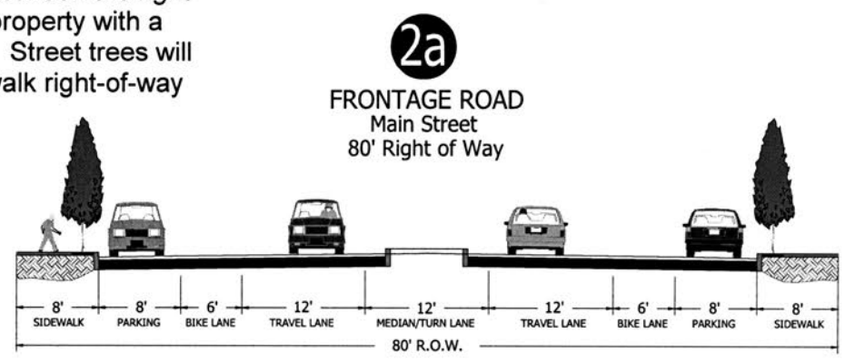


The Frontage Road has three distinctly different sections.

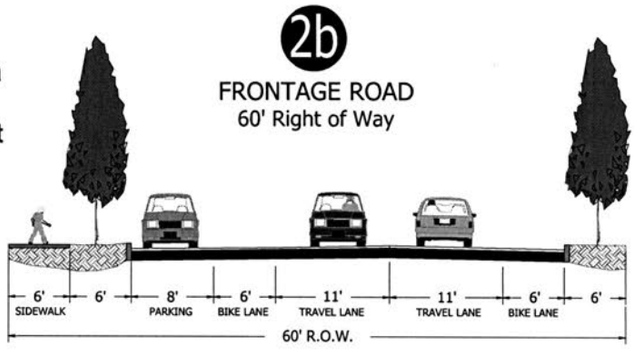
Frontage Road North – is a narrow 40' right of way that will provide a link from Murphy Road to Badger Road. The road will have two vehicle travel lanes and bike lanes on both sides. This road runs parallel to the Parkway and therefore only will have a sidewalk on the west side.



Frontage Road Center – is the main commercial street section through the Commercial and Mixed –use district. This street will have two travel lanes with a median. The street will allow on street parking and have bike lanes on both sides of the street. Parking will be restricted within the proximity of protected intersections. The sidewalks will be shared between the right-of-way and the adjoining property with a minimum width of 12 feet. Street trees will be placed within the sidewalk right-of-way within tree-wells.



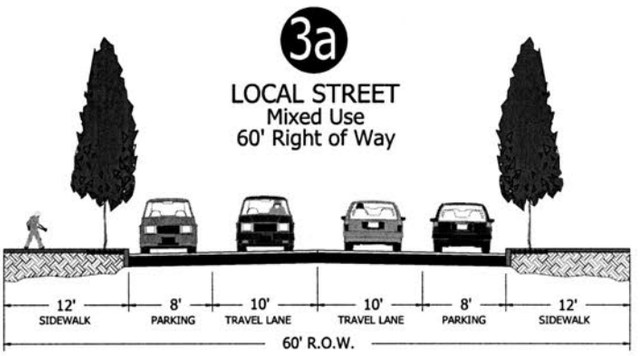
Frontage Road South – This street section will have two travel lanes with bike lanes on both sides. Parking will be allowed on the west side of the street. Again this street is a parallel facility next to the Parkway and will have sidewalks only on the west side except where the roadway turn to the west and sidewalks can serve two street frontages.

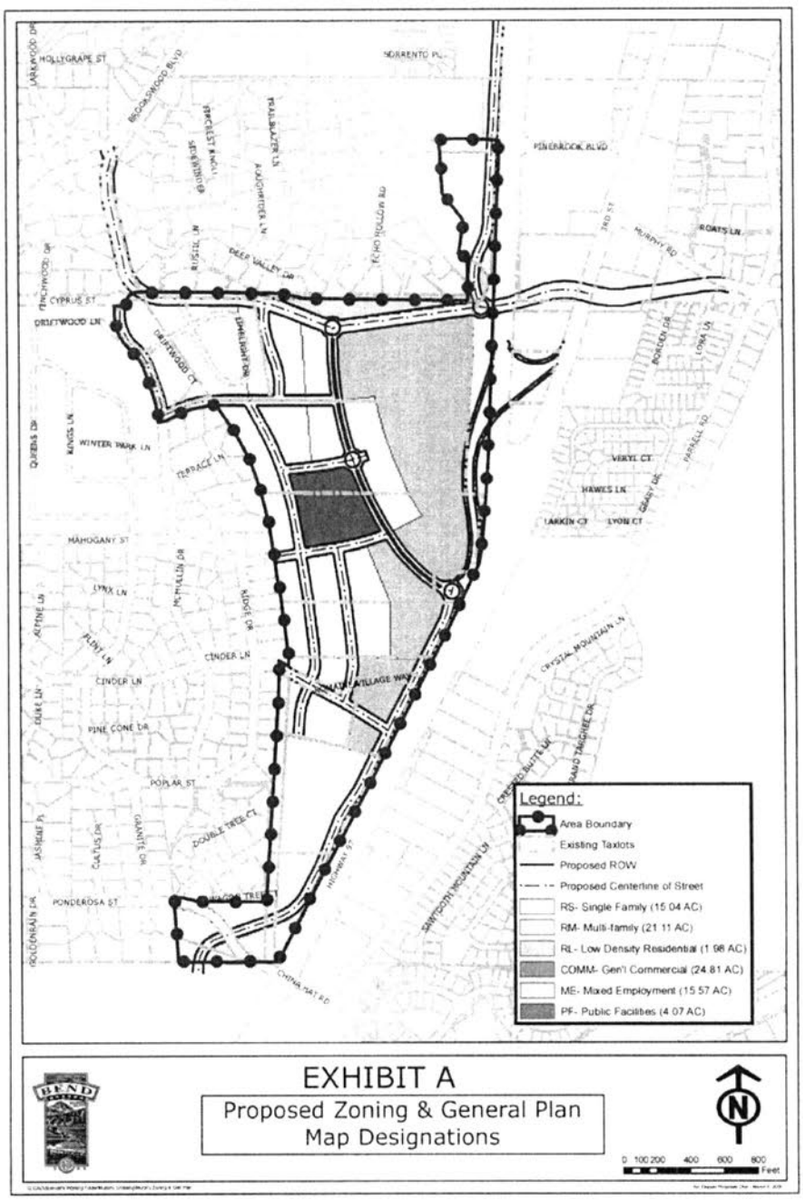


Local Street – There are two local street types; Residential and Mixed-Use. Both have 60 feet of right-of-way, two travel lanes and on street parking.

Residential Local – Sidewalks are located at the property line and are separated from the street by a planter strip. The sidewalk on the east side of the north/south local residential street which border the park will be replaced by an enhanced pedestrian trail system utilizing a 10 foot easement along the street frontage.

Mixed-Use Local – Sidewalks are urban in nature and design with street trees located within tree wells. Along the Park Block, the sidewalks will be designed with the park.




Legend:
Area Boundary
Existing Taxlots
Proposed ROW
Proposed Centerline of Street
RS- Single Family (15.04 AC)
RM- Multi-family (21.11 AC)
RL- Low Density Residential (1.98 AC)
COMM- Gen'l Commercial (24.81 AC)
ME- Mixed Employment (15.57 AC)
PF- Public Facilities (4.07 AC)
0 100 200 400 600 800
Feet
N
EXHIBIT A
Proposed Zoning & General Plan
Map Designations

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ORDINANCE NO. NS-2032

AN ORDINANCE AMENDING THE BEND AREA GENERAL PLAN MAP, BY CHANGING THE DESIGNATION OF PROPERTY LOCATED WEST OF THE BEND PARKWAY, SOUTH OF PINEBROOK BLVD AND NORTH OF THE CITY'S URBAN GROWTH BOUNDARY AND AN AMENDMENT TO THE BEND URBAN AREA TRANSPORTATION PLAN TEXT, CHAPTER 6 AND THE APPENDICIES AND THE TRANSPORTATION SYSTEM PLAN MAP.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Bend City Council has held a public hearing, considered the Planning Commission's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Findings and Recommendation dated August 28, 2006, regarding file PZ-05-547.

Section 2. The City of Bend Zoning Map is amended by changing the designation of the property shown in "Exhibit A" from Residential Urban Low Density (RL) and General Commercial (CG) to Residential Urban Standard Density (RS), Residential Urban Medium Density (RM), Public Facilities (PF), Mixed Employment (ME) and General Commercial (CG).

Section 3. The City of Bend Urban Area Transportation System Plan Map is amended by changing the designation of Murphy Road west of Parrell Road from a Major Collector to a Minor Arterial and adding the new alignment of Murphy Road west of Parrell Road as shown in "Exhibit B"

Section 4. To update the Bend Urban Area Transportation System Plan, Chapter 6 and the Appendices Text as described in "Exhibit C" to be consistent with the General Plan Map and the TSP map.

Read for the first time the 1st day of November, 2006.

Read for the second time the 15th day of November, 2006.

Placed upon its passage the 15th day of November, 2006.

YES: 6 NO: 0

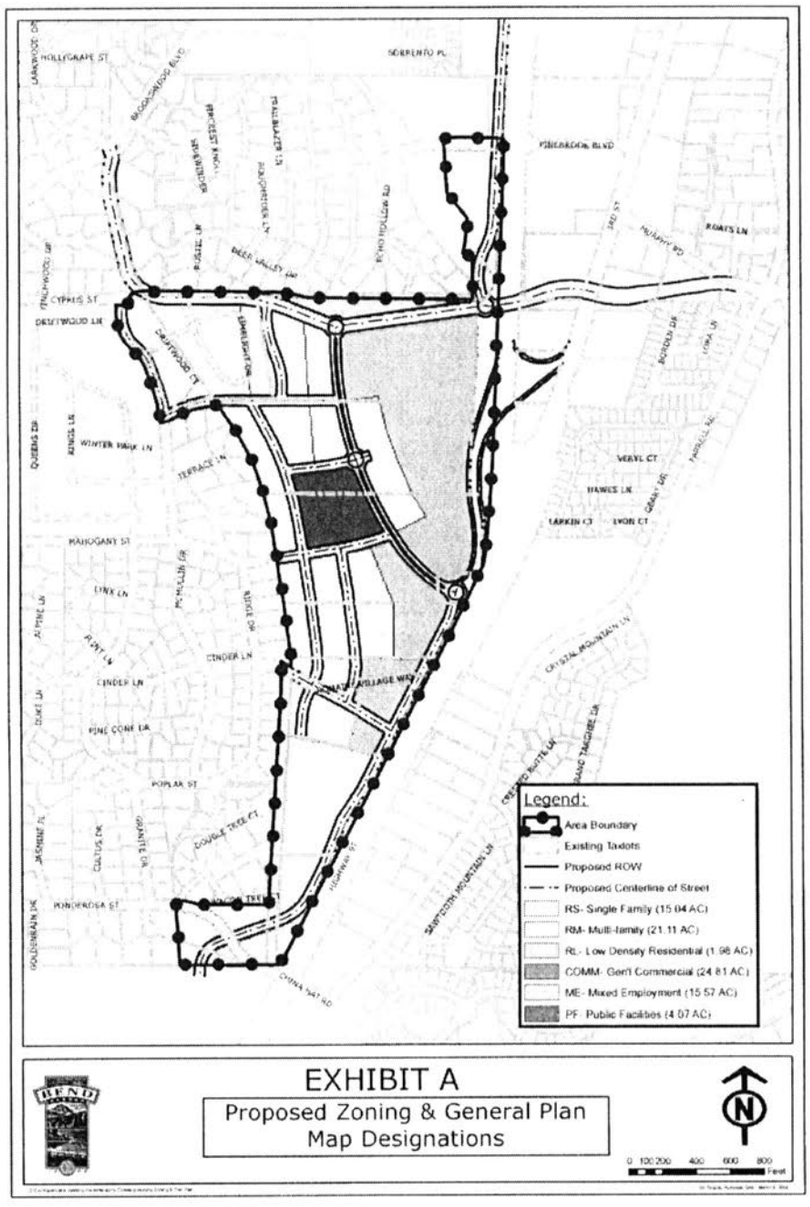
Authenticated by the Mayor the 15th day of November, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia S Stell

Patricia Stell, City of Bend Recorder


SORRENTO PL
HOLLYGRAPE ST
PINEBROOK BLVD
ROATS LN
CYPRESS ST
DRIFTWOOD LN
WINTER PARK LN
TERRACE LN
MAHOGANY ST
LYNX LN
CINDER LN
PINE CONE LN
POPLAR ST
DOUBLE TREE CT
PONDEROSA ST
CHINA HAT RD
VERYL CT
HAWES LN
TARKIN CT
EVON CT
CRYSTAL MOUNTAIN LN
Legend:
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RL- Low Density Residential (1.98 AC)
COMM- Gen'l Commercial (24.81 AC)
ME- Mixed Employment (15.57 AC)
PF- Public Facilities (4.07 AC)
EXHIBIT A
Proposed Zoning & General Plan Map Designations
N
0 100 200 400 600 800
Feet

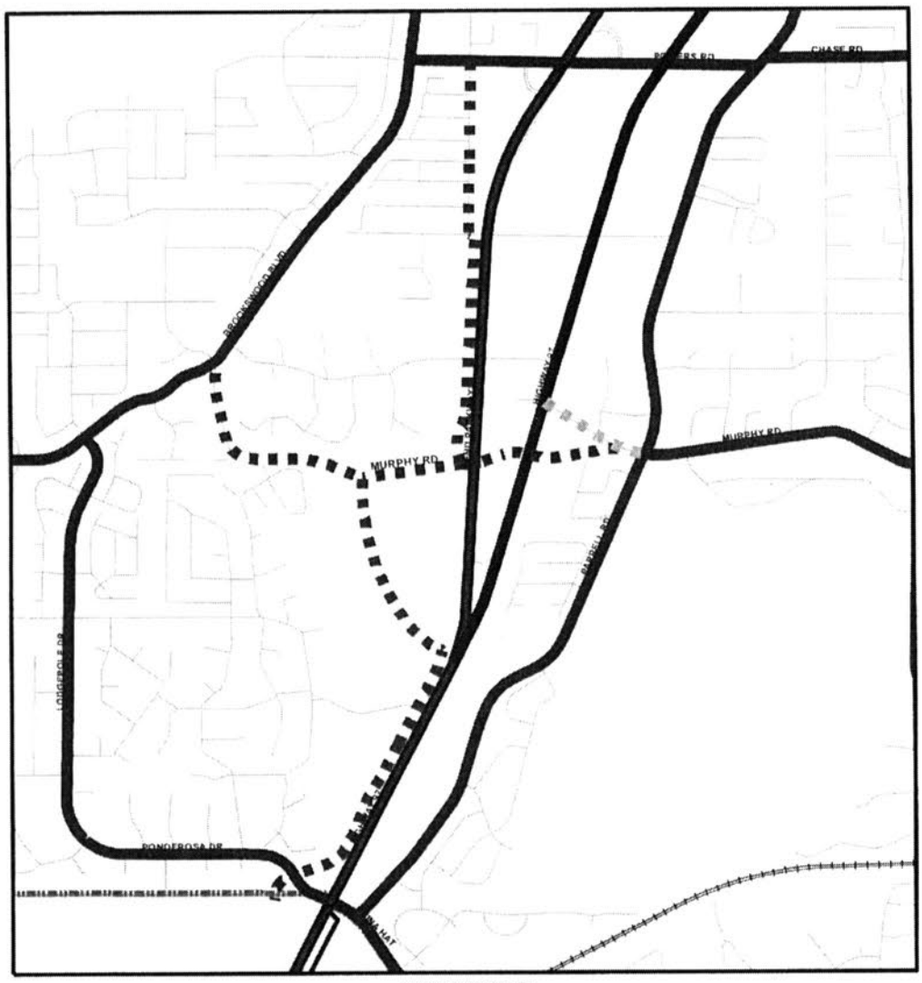

EXHIBIT B

PROPOSED BEND URBAN AREA TRANSPORTATION PLAN AMENDMENTS

Expressway
Principal Arterial
Minor Arterial
Proposed Minor Arterial
Major Collector
Proposed Major Collector
Proposed Local
Railroad
UGB - Urban Growth Boundary

FOR DISPLAY PURPOSES

NOT TO SCALE

Exhibit C

6.0 TRANSPORTATION SYSTEM PLAN

The following sections describe strategies, approaches and standards designed to meet community transportation system needs of the next twenty years. For each respective component, pertinent objectives and policies are included at the end of this chapter.

6.1 TRANSPORTATION SYSTEM MANAGEMENT

Transportation System Management (TSM) improvements are intended to optimize the carrying capacity of roadways. TSM improvements can alleviate congestion and reduce crashes by minimizing the number of access points and turning movements, and by creating separate turning and merging lanes. Other TSM measures include controlling the location of driveways, constructing raised medians, prohibiting on-street parking, timing and synchronizing traffic signals, constructing roundabouts and signals, and improving intersection corners to facilitate easier turning movements for large vehicles.

By focusing improvements on congested intersections or areas that otherwise disrupt the flow of traffic, TSM improvements can provide a lower cost alternative to widening roadways (between intersections) and protect the function of roadways. TSM strategies are easiest to implement where they can be constructed along new or developing transportation corridors (e.g., along the East 27th Street corridor). Conversely, creating turn limitations and access control along fully developed transportation corridors requires a significant adjustment by the motoring public and businesses affected by these changes. It is important that public agencies work cooperatively with impacted businesses to fully evaluate access alternatives and to minimize economic hardships that may be created by new circulation patterns. It is important that TSM improvements account for the needs of all modes of travel, particularly that pedestrian, bike and transit movements, and safety are not compromised in exchange for improving roadway capacity.

6.2 TRANSPORTATION DEMAND MANAGEMENT

Transportation Demand Management (TDM) strategies focus on altering driver behavior and mode choice to lower the demand on the street system especially during peak travel times. Common measures to reduce the number or alter the timing of peak hour vehicle trips include: compressed or flexible work schedules, ridesharing, use of transit, bicycle or pedestrian commuting, parking management, or actions that reduce the need to travel, such as working at home and "teleworking."

TDM programs complement other transportation planning strategies and goals that are aimed at preserving livability and reducing single occupant vehicle travel. Successful programs can be measured by an increase in vehicle occupancy rates and reduced vehicle miles traveled.

Demand management strategies often involve an education and promotion effort to encourage changes from single-occupant driving behavior. Local government and other groups can help to educate the public regarding the actual costs of travel on the

transportation system and encourage TDM programs to reduce system demand. Community-wide events can also encourage employees to participate in TDM efforts by promoting alternatives to driving alone. Together, these efforts can make important strides toward improving public awareness regarding travel alternatives.

Demand management programs work best where there are heavily congested corridors, clear work trip travel patterns, limited parking, and the provision of viable alternatives to driving. Experience from successful demand management programs indicates that other important factors include development of quantifiable goals and periodic evaluation, demand management coordination, industry involvement, parking management, employee and employer incentive programs, and strong public support. Thus, transportation demand management strategies require a concerted community effort and commitment in order to fulfill the greatest trip reduction potential.

6.3 PEDESTRIAN AND BICYCLE SYSTEM

Pedestrian and bicycle facilities are integral elements of the transportation system and valuable components in the strategy to reduce reliance on automobiles. The community benefits in many ways from adequate pedestrian and bicycle facilities including reducing traffic congestion, supporting tourism, and providing accessibility to all parts of the community. Further, the segment of the population without access to a car benefits from quality pedestrian and bicycle facilities. The year 2000 US Census data will help to quantify this group of non-drivers.

6.3.0.1 Trip Potential

Travel by bicycle and foot has tremendous potential in the Bend urban area. A large part of this is attributable to Central Oregon's predominantly sunny weather and relatively flat terrain. In addition, the outdoor spirit of the citizenry, the desire to engage in healthy exercise and the interest in alternative modes of travel provide a strong population base for generating non-automobile trips. The visibility of pedestrian and bicycle traffic throughout the year confirms the importance of these travel options.

Bend's relatively small size makes travel by bicycle or foot fairly feasible. Depending on the type of trip, studies indicate a willingness of people to walk between a quarter and a half mile, and bicycle upwards to a few miles. According to the 1990 National Personal Transportation Survey, 27 percent of all trips are one mile or less, 40 percent are two miles or less and 63 percent are five miles or less.

"... the outdoor spirit of the citizenry, the desire to engage in healthy exercise and the interest in alternative modes of travel provide a strong population base for

The 1990 census data shows walking and bicycling accounted for about seven-percent of Bend's trips to work. Travel time to work for all trips was less than five minutes for six-percent of the workers, less than ten minutes for 31 percent and less than 15 minutes for

63 percent. A short trip length and travel time is part of the equation for encouraging non-auto trips. A complete and safe network of trails, sidewalks and bicycle facilities will further encourage these trips.

Other Benefits: In addition to reducing traffic, non-motorized trips conserve fossil fuels, reduce noise, protect air and water quality, and reduce the demand for parking spaces. The air quality issue is particularly important to Central Oregonians, as the pristine mountain views and clean air are cherished resources of the community. A concerted effort to reduce automobile trips and the resultant exhaust emissions can be valuable in diminishing the impact on air quality.

Community and Site Design: An adequate bike and pedestrian system requires a complete network of walkways and bikeways that connect parks, schools and activity centers. Orienting buildings to the street and providing safe and easy connections from stores to the sidewalk, and providing convenient bike parking all help make bicycling and walking more desirable trip choices.

Maintenance and Repair

Maintenance and repair of the bicycle and pedestrian system are critical to the use of these transportation modes. Timely snow removal, sweeping, cinder removal, patching, surface repair and striping are all necessary to maximize the use of bike lanes and sidewalks as alternative transportation modes. Property-tight sidewalks may require less maintenance than curb-tight sidewalks because the landscape strip provides a place to pile snow and separates the sidewalk from road debris accumulation.

The City currently assigns responsibility for sidewalk maintenance and repair to the adjacent property owners. The current system does not adequately assure timely maintenance and repair of the sidewalk network. The City shall develop a program to ensure timely maintenance and repair of all sidewalks.

The current use of cinders negatively impacts the bicycle lane and pedestrian system. The City should consider alternatives to cinders. The City's elimination of the use of chip sealing has had a positive impact on bicycle safety and chip sealing should not be reinstated.

6.3.1 THE PEDESTRIAN SYSTEM

Walking is the most basic form of transportation, undertaken by virtually every citizen. Sidewalks are an essential element of the transportation system since every trip involves at least one walking segment. Because the primary function of sidewalks is to provide a safe place for pedestrians, facilities need to be designed accordingly.

Since the late 1980s sidewalk construction has been required in all new residential and commercial developments. Sidewalks will normally be located on both sides of the street and separated from the street by a curb and a landscape strip. In steep topography or unusual topography, sidewalks may be allowed on only one side of the street and may be curb-tight. Sidewalks are normally constructed with a concrete material although special

paver blocks may be utilized in high-use pedestrian areas, such as the downtown, to enhance surface aesthetics. Sidewalks vary in width depending on anticipated pedestrian volumes but have certain minimum widths established to meet Americans with Disabilities Act (ADA) requirements. Minimum sidewalk widths are established in the implementing ordinances of the city.

6.3.1.1 The Landscape Strip

The area located between a sidewalk and the curb serves many important functions and is commonly referred to as the planting or landscape strip (Figure 20). The landscape strip creates space for a variety of underground utilities such as telephone, cable television, fiber optic cables, etc. The landscape strip is also beneficial for locating utility poles, fire hydrants, benches, bus shelters and other features that might otherwise block or obstruct pedestrian travel along sidewalks.

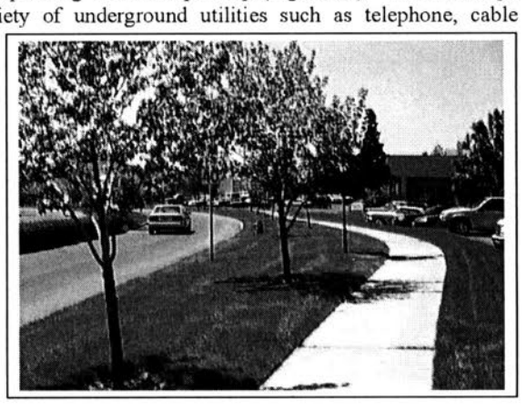

Figure 20. Landscape buffered sidewalk On Colorado Avenue
Photo by: City of Bend

Landscaping helps to soften the hard edge created by pavement and curbs. Large trees can also provide cooling summer shade for parked cars and pedestrians. A canopy of street trees can help to slow traffic and enhance the beauty of the community. The physical separation from the street also improves the design of sidewalks by maintaining a constant grade without dipping at driveways, and makes American with Disabilities Act compliance easier. During winter months, snow can be plowed into these areas from the street and not block sidewalks. The landscape strip provides a physical separation from the adjacent roadway, providing enhanced pedestrian comfort and improved walking experience.

6.3.1.2 Street Crossings

Crossing local street intersections is normally not difficult because of lower traffic volumes and because the distances are relatively short. Crossing arterial streets is much more challenging because of street widths, high traffic volumes and speeds. Minimizing crossing distances required for pedestrians is important to reduce the psychological barrier created by wide streets and to increase pedestrian safety.

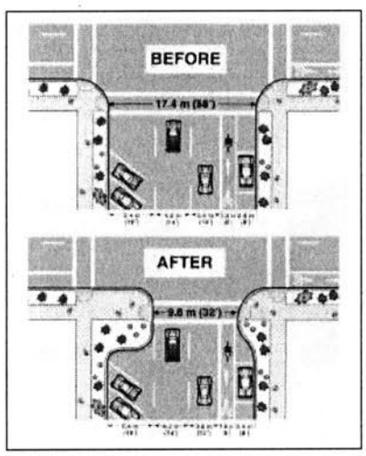

Figure 21. Example of curb extension Retrofit
Source: Oregon Bicycle & Pedestrian Plan

Construction of **curb extensions** is one method to improve the visibility of pedestrians and reduce the crossing distance of the street (Figure 21). These extended "bulb-outs" add valuable pedestrian space and can help facilitate a quicker movement of pedestrians across busily traveled roadways. The additional space can also provide a location for bike parking or other sidewalk amenities. Downtown Bend is an excellent example of where this type of design has been used very successfully.

Another solution to addressing conditions where traffic volume is high, or roadways are wide, is the **construction of raised medians**, islands or refuges. Medians can significantly improve pedestrian visibility and provide a place to wait for safe gaps in the traffic stream while crossing busy roadways (Figure 22). Medians can also improve the aesthetics of a community with added landscaping. Islands and refuges are especially important at large intersections to reduce the crossing distance and improve pedestrian comfort by minimizing exposure to motor vehicles.

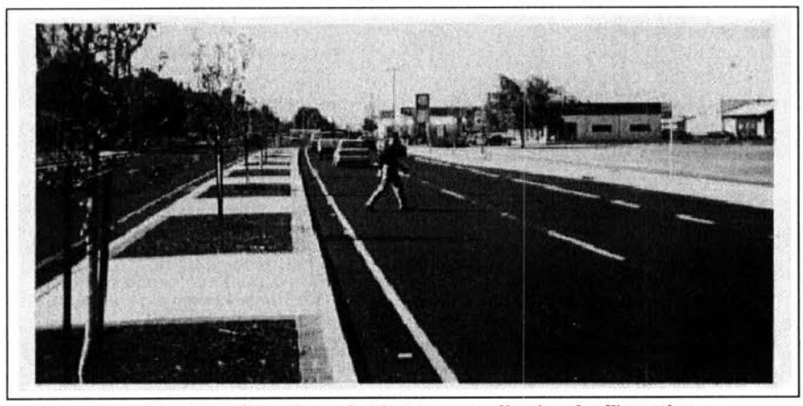

Figure 22. Median allows pedestrian to cross one direction of traffic at a time
Source: Oregon Bicycle & Pedestrian Program

One important function of **traffic signals** is providing for the movement of pedestrians across busy intersections. Where large radius corners have been constructed at the intersection to accommodate higher speed turn or truck movements, building a dedicated turn lane with a raised island for pedestrians is important (Figure 23). This significantly improves the comfort of pedestrians by reducing the amount of uninterrupted pavement to cross.

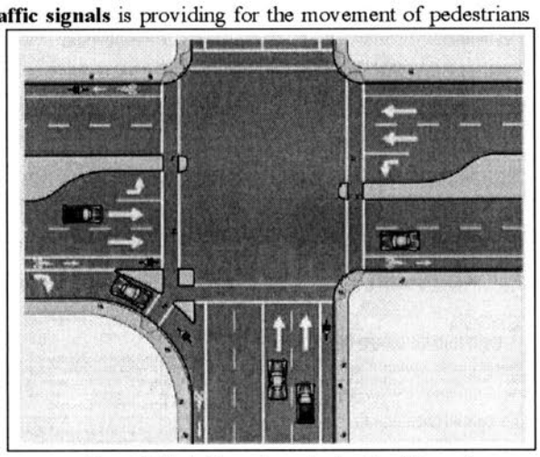

Figure 23. Pedestrian refuges at a signalized intersection
Source: Oregon Bicycle & Pedestrian Plan

6.3.1.3 Multi-Use Trails

Trails provide important transportation connections and shortcuts to destination points that make travel by foot or bicycle safe, pleasant and convenient. Recreational activity is also a common use of the trail system, with scores of residents and tourists using these areas for walking, jogging, bicycling and other activities.

Trails also provide citizens and visitors with links to the natural environment. One special quality of a trail is the opportunity they provide to escape the bustle of the city - while remaining within the city. This is particularly evident along the Deschutes River trail system (Figure 24). Public opinion supports this sentiment, as people cite the ability to depart from traffic congestion, noise and exhaust as a prime factor in their enjoyment of trails.

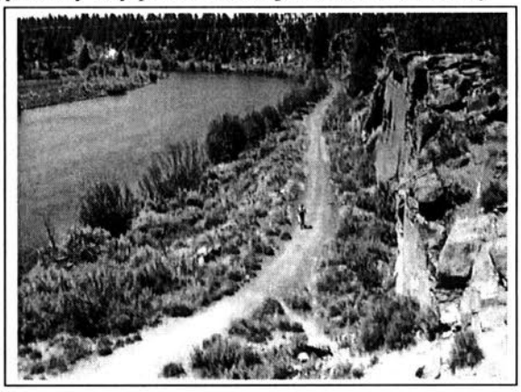

Figure 24. Deschutes River Trail
Photo by: City of Bend

The first trail plan was established with the adoption of the Bend Area General Plan in 1981. This has been the policy tool that has provided some protection of trail

corridors and has promoted the construction of the current limited system. In 1995, consultants for the City studied Bend's off road trail network to evaluate the original trail plan[B2]. As a result, several additions were adopted by the City and County and incorporated into the General Plan in 1996. The current "primary" trail plan is illustrated on the Bicycle and Trail System Map (Exhibit A.). The City and the Bend Metro Park and Recreation District are working together in the planning and development of a trail system to meet the recreational and transportation needs of the community.

6.3.2 THE BICYCLE SYSTEM

Residents and tourists of all ages enjoy bicycling for both transportation and recreational use. Bend's relatively small size and short distances encourage travel by bicycle. The majority of the current bike system is found on arterial and collector streets as bike lanes. The network of multi-use trails also serves as an important part of the planned bike system.

6.3.2.1 Bike lanes

A **bike lane** is a space on the road shoulder that is delineated from the adjacent vehicle travel lane by a solid white striped line. Bike lanes are provided on both sides of the street and promote travel in the same direction as the adjacent lane of traffic. This practice provides a safer place for bicycles and requires a cyclist to conform to the laws of motor vehicle travel.

Bike lanes are intended to provide a convenient and safe location for bicycles on collectors and arterials. Bike lanes provide a clear and distinctive location on the road for bikes to travel at their own speed. They improve driver expectation of bike movements and they reduce bike and auto conflicts. Bike lanes provide a benefit to all modes of travel. For pedestrians, they help separate bike movements from the sidewalk and they increase walking comfort due to the increased sidewalk separation from adjacent auto traffic. For motor vehicle traffic, the lanes add buffer space from roadside obstacles, they improve driveway and intersection sight distances and they provide a temporary place for disabled vehicles to pull out of the travel stream.

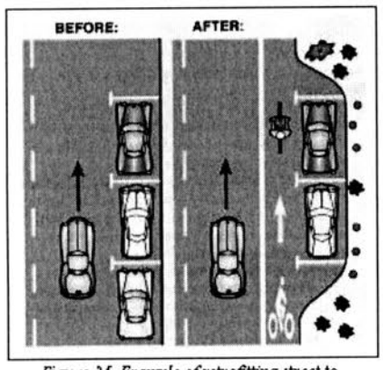

Figure 25. Example of retrofitting street to accommodate bike lanes and on-street parking
Source: Oregon Bicycle & Pedestrian Plan

It is preferable not to permit on-street parking next to a bike lane due to the hazard of opening car doors and the conflict of cars moving in and out of the parking stalls. However, there may be locations where it is necessary to provide both parking and bike

lanes. Where space is limited, one design solution is the construction of recessed parking bays to better accommodate the space requirements for both needs (Figure 25). In other cases, such as the commercial downtown core area where a large inventory of on-street parking is essential, the need to provide vehicle parking may take priority over the delineation of bike lanes. In that case, where lower traffic speeds can be maintained, bikes can better mix with traffic without causing significant problems.

6.3.2.2 Bike Parking Facilities

For a bikeway network to be used to its full potential, secure bicycle parking should be provided at likely destination points. Bicycle thefts are common and lack of secure parking is often cited as a reason people hesitate to ride a bicycle to certain destinations. Bicycle parking should also be convenient, easy to access and provide suitable protection from the weather. Bike parking needs to be designed for both short- and long-term use depending on site conditions and demands. The city of Bend has provided a number of short-term bike racks throughout the central business area as part of the city's downtown redevelopment effort. These racks have helped reduce some of the automobile parking demand in this activity center. When public transportation service is provided in the urban area, bike-parking facilities will need to be provided at all park and ride lots, major transit stops and transit center facilities. Adequate bike parking facilities need to be provided where other public facilities such as libraries, parks, recreation centers and schools are constructed.

6.4 PUBLIC TRANSPORTATION SYSTEM

6.4.1 TRANSIT FEASIBILITY

Bend does not currently have a fixed-route transit system in place but does have a Dial-A-Ride system for seniors (60 and older) and eligible disabled persons. The Dial-A-Ride transit provides personalized door to door service but requires call-ahead reservations a day or more in advance of a planned trip.

The feasibility of transit within the Bend urban area has been the subject of two separate studies. In 1994[B.3], the City studied Bend's demographic, employment, travel and transportation system characteristics in relation to how they might support transit use. In 1996[B.4], the City hired a transit consultant to further evaluate how transit could be implemented in the community. This study augmented the previous analysis of transit feasibility by analyzing transit systems from similar sized cities, developing system evaluation criteria, conducting a public opinion survey on transit attitudes and financing methods, and evaluating capital needs and financing strategies. In 1997, based on this comprehensive evaluation of transit feasibility, the City Council declared that transit was feasible at build-out for the city of Bend.

In 2000[B.5], an additional study (discussed in further detail in section 5.5.2) evaluated possible expansions and improvements to the existing Dial-A-Ride system. The report recommended (and BTAC supported) that the City pursue this strategy as an initial method of providing public transportation for the general public. BTAC also recommended that the City pursue seeking voter approval of a transportation funding

measure that would include operating funds for an expanded Dial-A-Ride system for general public use. The City will forward a funding measure to the voters to fulfill this recommendation in the fall of 2000. (The City is also examining other means of expanding and improving the existing Dial-A-Ride system - although service expansion would be far more limited without obtaining additional operating funds). [See also Sections; 5.5.2 *The Recommended Transit Alternative* and 6.9.5 Public Transportation System – *Policies, Implementation, Benchmarks and Funding*]

6.4.2 MULTI-MODAL STRATEGIES

Public transportation is an important element of multi-modal transportation planning. It provides a valuable transportation alternative for high volume travel corridors. Public transportation can improve the efficiency of arterial streets because fewer vehicles are required on the road to serve the same number of trips. When faced with costly road improvement or construction difficulties, concerted trip reduction programs can add years of life to a roadway's capacity. Improvements to air quality can also be achieved by the net reduction of motor vehicle emissions. Public transportation can also play an important role in reducing congestion and parking requirements in high demand areas such as the downtown.

6.4.3 COMMUNITY MOBILITY

Public transportation improves mobility for a wide range of the traveling public. School age children can use public transportation for trips to school, after-school activities, or recreational pursuits. Likewise, there are many other segments of the population that either don't have a car (many for financial reasons), are unable to drive or would simply prefer to let someone else do the driving. Seniors who need to make unscheduled trips for shopping, medical or other trips have added flexibility to augment their Dial-A-Ride activity. Workers of all ages can get to their jobs without owning or relying on a car. Thus, public transportation is a valuable service that fills a much broader function than solely trip reduction. It provides mobility for those without cars as well as being an alternative to the automobile for many travel needs of the community.

6.4.4 PUBLIC TRANSPORTATION FACILITY DESIGN

6.4.4.1 Transit Centers

Transit centers are locations where several transit vehicles converge for the purpose of passenger transfer. This creates a very efficient, convenient and safe method of exchanging people between transit vehicles. This also can provide a location and opportunity where several inter- and intracity transportation services can meet to exchange passengers. It is desirable to coordinate public transportation operations such that all vehicles meet at a transit center at close to the same scheduled time. This allows passengers to make easy transfers without a long wait.

A transit center located in the downtown can also provide a convenient connection to the many governmental, banking and shopping activities that are located in this focused business district as well as provide a good location for a central point of operation.

Thus, a transit center is planned to be located in the downtown area to serve this function. An example of a good location for this facility would be in the proximity of Heritage Square, where institutional uses such as the new Bend Public Library, the Bend-La Pine School District Administrative Offices and City Hall are sited.

In designing a transit center, the location of the facility should provide for orderly circulation and accessibility of all types of transit vehicles, while minimizing the conflict with other traffic flow. The center should be located to minimize the number of pedestrian and vehicle conflicts, and be easy to access by walking or bicycling. Bicycle parking facilities should be designed and located for safe and convenient use, and provided in adequate supply to meet demand. More study will be required to determine the best location(s) and spatial requirements of facilities necessary for this transportation system function.

6.4.4.2 Major Transit Stops

Major transit stops are locations along the transit system where high levels of transit user and bus activity are likely to occur. Additional transit related amenities and pedestrian facilities should be provided to accommodate the differing types of demand. Adjoining developments should be encouraged to provide transit-friendly design elements that facilitate bus movements and convenient pedestrian access to the major transit stop. At the present, the following are proposed as major transit stops; the downtown transit center, St. Charles Medical Center, Central Oregon Community College, Mt. Bachelor shuttle lot and a regional intermodal facility – location to be determined (possibly at the ODOT, Region 4, site off of Empire Blvd. and Hwy 20 - which is currently delineated as a Park and Ride location.). Additional major transit stops may be defined as the system matures and other destinations with high transit ridership potential are identified.

6.4.4.3 Transit Friendly Design

Transit friendly design is an important element in the encouragement of transit trips. Access to transit stops must feel safe and be convenient. The construction of sidewalks and accessways help to assure that the walking link of the transit trip is a safe and pleasant experience. Providing benches, shelters and lighting can also increase the comfort of transit use. As routes are planned and local transit stops are located throughout the system, pullout lanes should be constructed for bus stops to permit buses to pull-out of the traffic flow on heavier traveled arterial streets. Constructing suitable and convenient bike parking and providing buses equipped with bike racks will also encourage longer inter-modal trips to connect with transit.

6.4.4.4 Land Use Organization (transit oriented)

Land use organization that situates high-density residential, mixed-use, entertainment and employment concentrations along transit routes is an important strategy that supports transit use. Additionally, site design elements such as building layout that provides close proximity to the street and convenient pedestrian corridors, will also help to invite transit trip activity. Developing ordinances that support the ease of pedestrian movements to and from transit stops will optimize transit rider potential.

6.4.4.5 Park and Ride Lots

Park and ride lots, when strategically located, can support both public transportation and rideshare activities. If park and ride lots are located on the edge of the city, they can conveniently serve both directions of travel into and out of town. Park and ride lots also provide a meeting place for car pools and a location for motorists to access a public transportation system. Park and ride lots can either be publicly constructed facilities, or more commonly, a partnership between public and private property interests, typically requiring a cooperative use agreement with the landowner. Shopping centers, churches, or the like, commonly have large parking lots that are underutilized during the day, making park and ride activity complementary with the business demands of the property owner. Van or shuttle systems can also incorporate park and ride lots into a parking management plan by shuttling employees to the work place. This can help to minimize localized parking demand or impacts generated by employee traffic.

Bend currently has one existing designated Park and Ride lot and coordination effort is continuing between the City and the Commute Options Working Group to identify and secure other facilities for this function [See also: Section 3.4.2]. This has been a frustrating effort given property owner concerns over liability issues that have made it very difficult to secure joint use agreements within private parking lots. However, work continues to identify, locate and secure likely park and ride lots through out the Bend area. The highest priority areas are at the north and south entries to the City along or near Highways 97 and 20.

6.4.4.6 Transit Trunk Routes and Transitways

Trunk routes are transit routes that normally maintain a higher level of transit service. Greater service levels are achieved by providing more frequent headways (times between buses) either by designating overlapping bus routes down the same street or by running a greater number of, or larger buses along the trunk system. In larger cities, trunk routes also deliver riders from outlying areas where the rider may transfer from a feeder bus that doesn't travel to the core area. Larger cities may also have lessor trunk routes that travel exclusively between these outlying activity centers. Trunk routes typically provide transit service for longer hours of the day and weekend service. Trunk route stops or stations get more use, have greater waiting capacity (i.e., larger shelters) and often have more rider amenities (i.e., pay phones, drinking fountains, route information/maps, ticketing equipment, scheduling monitors, etc.).

Transitways are very specialized trunk routes that provide very high levels of transit service. Transit is given a very high priority on transitways to enhance transit service levels by increasing travel speeds and reducing travel delay/times. Typical transitway features are exclusive lanes or a shared use of High Occupancy Vehicle (HOV) lanes with other vehicle traffic (commonly found in large metropolitan areas in conjunction with freeway systems), traffic signal/queue-bus bypass lanes and other transit preferential treatments.

Trunk route service has not yet been delineated within the Bend system although higher service levels would be most likely on the main east-west route between C.O.C.C. and St. Charles M.C. and possibly a north-south route in the center of the city. No transitways have been deemed necessary in the urban area in the Bend TSP at this time.

6.5 STREET SYSTEM

The street network is the basis of the transportation system. It provides the framework for serving most anticipated modes of transportation and the planned land uses. Bend's transportation system has been planned and developed to meet the goals and objectives of the General Plan.

The street system is composed of a wide range of arterial, collector and local streets. The major street system consists of multi-modal transportation corridors providing space for sidewalks, bike lanes, transit routes, and a wide range of other motorized vehicles. This functional classification system provides a basis for the location and function of roadways shown in the Bend Urban Area Roadway System Plan (Map Exhibit B). This Plan is based on an evaluation of needs for a 20-year planning horizon (*Bend Transportation Model Update*, June 2000, Appendix B). The Plan also accounts for system needs beyond the planning period and the need to preserve certain corridors for the future.

The circulation plan designates a system of major streets that are necessary to move people and goods safely and conveniently within the urban area. The system is depicted on the Roadway System Plan Map as expressways, principal arterials, major and minor arterials, and major collector streets. In many instances, the alignments depict a generalized corridor, and precise alignments of future streets will be determined after further study and engineering analysis, or during the development of vacant properties.

The road system is based generally on a spacing of one mile for arterials and one-half mile for collectors. The precise alignment for new streets must be defined as development occurs. In some areas, additional collector or arterial streets beyond those shown on the plan map may need to be established as the community grows. The City would establish the location of additional streets as part of the land development process and Street System Plan amendments made as necessary. It is extremely important that adequate rights-of-way are secured as development or redevelopment occurs along these designated corridors to protect these future roadways.

6.5.1 ROADWAY CLASSIFICATIONS

6.5.1.1 Expressways

Expressways are roadways designed to carry large volumes of traffic with limited traffic flow interruption. Direct property access is very limited. In the situation of the sections of Highway 20 and 97 that are designated as expressways, established driveway access points are permitted on a case by case basis until alternative access becomes available.

The new Parkway facility is being designed with limited roadway access to preserve capacity and provide improved safety, and to accommodate the travel needs of the Bend community. Grade separations, interchanges (at major intersections) and raised medians (along much of its length) are being included in the project to ensure that the capacity and safety of the route is maintained well into the future. Expressways will provide for both through trips and trips within the urban area.

When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

Expressways in the Bend urban area include U.S. Highway 20 north of the intersection with U.S. Highway 97 (the "wye" on the north end of town), east of 12th Street and all of U.S. Highway 97 (including the Parkway). [The "old" portions of Highway 97, (pre-Parkway era) are principal arterials (this includes Highway 20, between the north "wye" and Greenwood, and Third Street, between Greenwood and the south Parkway intersection.]

Expressway Descriptions:

The Bend Parkway is a part of the National Highway System and also classified as a Freight Route in the Oregon Highway Plan. The goal of this system is to provide for the economic growth of Oregon by moving traffic safely and efficiently between geographic areas within Oregon and between Oregon and adjacent states. Also, the Parkway is an integral part of the Bend urban area transportation grid.

The Parkway alignment begins northeasterly of the "Sisters" (Highway 20/97) interchange. It extends southward adjacent to the railroad, then crosses East 3rd Street south of Butler Market Road. It then follows Second Street to Thurston Avenue where it crosses over Division Street. South of Revere, the Parkway follows (and will replace) existing Division Street to Cleveland Avenue, where it bears southwesterly and runs to the west of, and parallel to, Highway 97. The Parkway re-connects with Highway 97 south of Murphy Road. Upon completion, the U.S. Highway 97 designation will move from the existing East 3rd Street corridor to the Parkway (3rd St. will retain the "U. S. Highway 20" designation south to Greenwood Avenue).

The City, County, and the State have developed an access management agreement and policy for the new corridor. The plan and policy provide for protection of the capacity of the new route, protection for the east-west arterial traffic movements and overall safety of the traveling public.

Grade separations are planned on the Parkway at all intersections with the arterial street system between the junction of U.S. Highways 97 and 20, on the north, and Reed Market Road on the south. For that portion of the Parkway, only the Revere Avenue and Colorado Avenue interchanges provide Parkway access and egress in all directions. The Revere Avenue-Hill Street route will become the main *north* arterial-street connection to the downtown. An exception to the grade separated design occurs near Greenwood and Franklin avenues. While these arterial streets pass under the Parkway, Lafayette and Hawthorne avenues will serve as the access streets to the downtown and are connected at-grade on the western side of the Parkway. These streets will be limited to right in/out (i.e., no left turns) with the Parkway. If future capacity or safety issues occur, related to these intersections, ODOT may choose to disconnect them from the Parkway. These access streets also serve as connections to Greenwood and Franklin avenues. This deviation from the normal expressway design is due to the limitations created by the Burlington Northern Santa Fe (BNSF) Railroad that is located immediately to the east of the Parkway, as well as to provide access to the downtown.

In the autumn of 2001, the southern section of the Bend parkway opened to traffic. Unlike the northern and central sections, most of the intersections are at-grade instead of interchanges. The original plan for the Bend Parkway assumed that the at-grade connections would either be grade-separated or closed when capacity or safety problems warranted. South of Colorado Avenue, Powers Road, Pinebrook Boulevard, and the south intersection with old Highway 97 intersect the Parkway with at-grade signalized intersections. Other intersections include various combinations of turn restrictions. The west leg of Truman Avenue, the east leg of Reed Lane and Badger Road (on both sides) intersect the Parkway at grade but are limited to right-in and right-out turn conditions (raised medians prohibit lefts). Longer-term strategies include the grade separation and/or elimination of street connections to the Parkway as conditions may warrant and resources are dedicated to the development and implementation of local traffic circulation and as Parkway access alternatives are developed.

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In the summer of 2001, the South Bend Parkway Refinement Study was started to explore future options for replacing the at-grade intersections. The purpose of the refinement study was to help develop a detailed improvement and management plan for the southern section of the Bend Parkway from Powers Road to Bend's southern urban growth boundary. The South Bend Parkway Refinement Study encompassed City of Bend and State of Oregon transportation facilities. The study area extended from just north of Powers Road to just south of the Baker Road interchange with US Highway 97. The study area also extended from Brookswood Boulevard on the west to Parrell Road on the east. A joint ODOT and City of Bend project development team evaluated thirteen long-term alternatives, including a no-build, for the study. Of the twelve build alternatives, three were selected (Alternatives A, H and H-Modified) by the project development team to forward as alternatives to be further analyzed. All of the build alternatives included these features:

- Construct an interchange at Powers Road;
- Close the Badger Road connection to the Parkway;
- Restrict or close the Pinebrook Boulevard connection;
- Murphy Road realigned to the south and connected to Brookswood Boulevard;
- Ponderosa Avenue / China Hat Road intersection converted to right-in/right-out with acceleration lanes;
- Brookswood Boulevard widened to four lanes through the study area; and
- Powers Road widened to four lanes between Brookswood Boulevard and Third Street.

The recommended alternative was H-Modified with Option 1, and includes the features listed above, plus the following:

- Directional fly-over from southbound Third Street to southbound US Highway 97;
- Southbound off-ramp from the Bend Parkway to the frontage road; and
- Northbound loop on-ramp from Third Street to the Bend Parkway.

The final alternative selected by the Oregon Transportation Commission (OTC) and the Bend City Council will be amended into the City of Bend Transportation System Plan (TSP). It is the desire of the OTC and ODOT that all future projects need to be identified in acknowledged TSPs to begin the traditional project development process. Once the preferred alternative is in Bend's TSP, the project development process can start to fully design and construct the alternative as funding becomes available.

In 2003, following years of public meetings, the OTC and the City of Bend selected Alternative H-Modified with Option 1 for the South Parkway Refinement. Alternative H-Modified with Option 1 is shown in Figure 26A. The selection of this alternative came with several conditions that needed to be satisfied prior to implementing the plan. Below are the conditions:

- Select the alignment for the realigned Murphy Road to extend west to Brookswood Boulevard;
- Select the alignment for the frontage road west of the Parkway to connect Powers Road to Ponderosa Drive;
- Identify the timing of the right-in/right-out configuration for Ponderosa Drive / China Hat Road and US Highway 97;
- Identify the improvements needed on Powers Road between Third Street and Brookswood Boulevard;
- Identify the improvements needed on Brookswood Boulevard from Murphy Road to Powers Road;

- Identify the improvements needed on Parrell Road between Powers Road and China Hat Road; and
- Select the alignment for the frontage road from Ponderosa Drive south to Baker Road.

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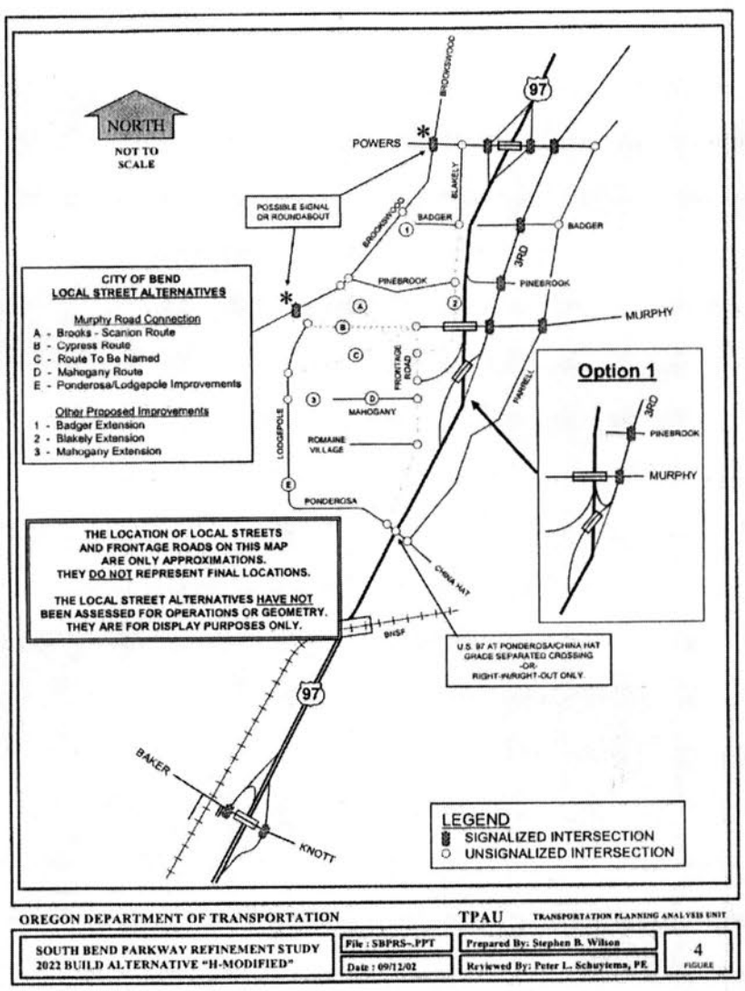
Figure 26A
South Bend Parkway Refinement Study
2022 Build Alternative "H-Modified"



Adopted: October 11, 2000

To meet those conditions, in March 2005, the City of Bend initiated the Murphy Crossing Refinement Plan. Over a three month period of time, stakeholder and property owner interviews plus two public meetings took place. From this public process a preferred design alternative emerged. The preferred plan proposes a local street plan consistent with the OTC conditions and a land use plan that will require new zoning designations within the study area. Based on the preferred alternative plan that came out of the Murphy Crossing Refinement Plan, the City Council authorized staff to proceed with the initiation and adoption of a refinement plan for the Murphy Crossing area in August 2005. Several adjoining properties expressed interest in becoming part of the refinement plan area. These properties complement the refinement plan area and have been incorporated into the plan. Staff is proposing to create a refinement plan overlay for approximately 102.75 acres. The plan will include Zoning Map and General Plan Map amendments to re-designate the existing Urban Low Density Residential (RL), Urban Standard Density Residential (RS) and Highway Commercial (CH) zoning to Urban Standard Density Residential (RS), Urban Medium Density Residential (RM), Mixed Employment (ME) and General Commercial (CG). The proposal will also require a Text Amendment to the Zoning Ordinance to add the new Murphy Crossing Refinement Plan, an amendment to the City's Transportation System Plan text and the Transportation System Plan Map to locate the Murphy Road over-crossing alignment and the frontage road alignment.

Staff has continued to meet with the area property owners to refine the preferred plan to address access issues raised by ODOT. The State and local street system in the Murphy Crossing Preferred Plan is shown in Figure 26B.

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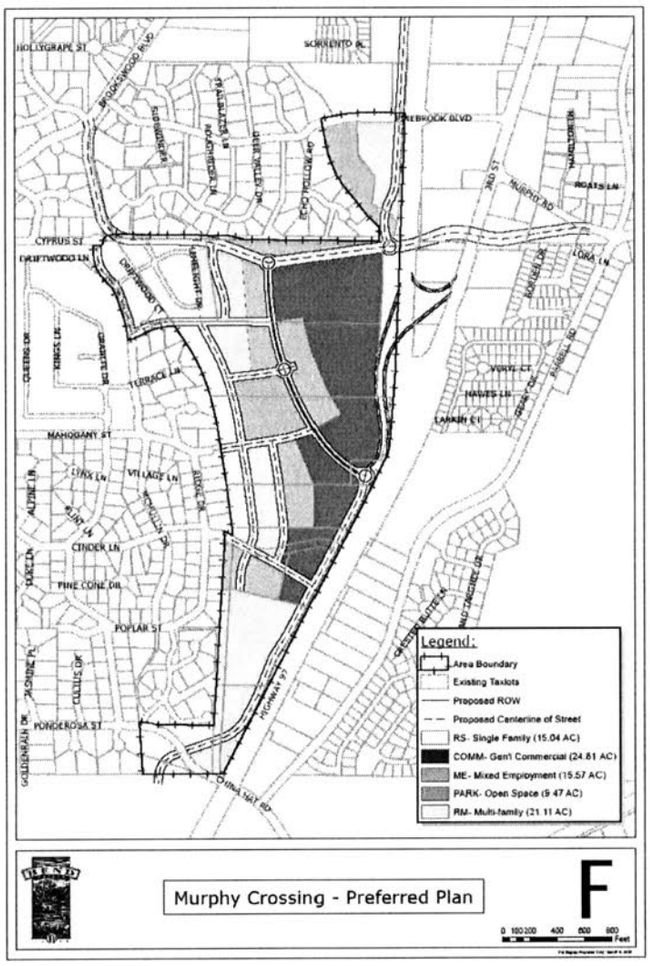
Figure 26B
Murphy Crossing – Preferred Plan



Adopted: October 11, 2000

Concurrent with the Murphy Crossing project is a project lead by ODOT called the Interchange Area Management Plan (IAMP). The State will adopt a management plan for the south end of the Bend Parkway that will incorporate the land use designation identified by the Murphy Crossing Refinement Plan. As part of the IAMP, access within the planned area will be evaluated to determine if capacity and function will affect the level of service of the Bend Parkway. Ultimately the Murphy Crossing plan will be acknowledged by the OTC as part of the IAMP.

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The City has also initiated a corridor study for Murphy Road. The corridor study, which extends from 15th Street west to Brookswood Boulevard, will occur concurrently with the Murphy Crossing Overlay refinement plan. The corridor study will assist in determining the appropriate road design for future build-out in the area.

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One of the decisions made regarding the initial Parkway design was ***not*** to provide a full interchange with Greenwood Avenue as a direct connection between Highway 97 and Highway 20 East. This was due to a number of considerations that included cost, business displacement, aesthetics and interchange spacing, not to mention the difficulty in meeting the design constraints caused by the proximity of the railroad. Since that time, community discussion has continued that has supported this location as a better connection of the Parkway to Highway 20 – rather than to direct Highway 20 traffic down Third Street per the existing design. In the *Oregon Highway Plan*, "refinement plans" have been identified as a means of studying or resolving issues of this nature. If there is a desire in the future by local officials to pursue a more detailed discussion of highway-to-highway connection alternatives, ODOT has indicated a willingness to address this concern through the refinement plan process.

Several city street segments will be critical to the efficient function of the Parkway and careful review of development proposals and the regulation of access points along these streets is essential to protect the integrity of the expressway. Initial project construction may include the placement of raised medians along the first block of some of these streets to ensure safe and efficient operation of the Parkway. Also, as properties redevelop along these corridors, site access will be sought to re-orient to the adjacent alleys or side streets and not directly to the Parkway access streets, as much as practical.

These sensitive street segments for Parkway access include the following:

1. Empire Avenue between East 3rd Street and Boyd Acres Road,
2. Butler Market Road from East 3rd Street to the Parkway,
3. Revere Avenue from west of the Parkway/Hill St. signal for one block
4. Hill Street between Revere Avenue and Wall Street,
5. Lafayette and Hawthorne avenues between the Parkway and Hill Street*,
6. Colorado Avenue between Harriman and Hill streets,
7. Truman Avenue between Pelton Place and the Parkway*,

8. Reed Lane between the Parkway and East 3rd Street*,
9. Powers Road between Blakely Road and East 3rd Street*,
10. Badger Road between the Parkway and East 3rd Street*, and
11. Pinebrook Boulevard between the Parkway and East 3rd Street*.

*Note: These access restrictions would be rescinded if the street is disconnected from the Parkway.

Highway 20 - north of the Sisters interchange The portion of Highway 20, that enters the urban area from the northwest (from the town of Sisters), and intersects with U.S. Highway 97 at the northern intersection "wye" (also the location of the Sisters-Parkway interchange).

Highway 20, from the northern UGB to the Sisters interchange, has two Westbound lanes and one Eastbound lane. In addition to the three-lane configuration there are left turn, acceleration and deceleration lanes at intersections. Ultimate roadway improvements will widen most sections of this highway to four and five lanes, as warranted. The only at-grade intersections planned for this section of roadway are at Cooley and Robal roads. New driveway connections will not be permitted along this section of the highway. The two intersections will most likely meet traffic signal warrants during the 20-year planning period, depending upon the amount of growth that occurs within the immediate area. The State has asked that grade separation alternatives also be examined for future design solutions at these intersections. Access management and the consideration of frontage road development is needed on many portions of Highway 20. A frontage road system is currently shown on the transportation (roadway system) plan map between Cooley Road and Empire Avenue to the west of Highway 20.

Highway 20 – 12th Street to the "eastern" Urban Growth Boundary

East of 12th Street to the eastern Urban Growth Boundary, Highway 20 is designated as an expressway. The roadway follows an alignment around the south side of Pilot Butte and heads eastward beyond the urban area. From 12th Street eastward, the existing highway is comprised of two lanes around Pilot Butte merging to three, then it widens to a five-lane roadway near 27th Street. The roadway transitions back to a two-lane facility as it heads east outside of the UGB. Additional widening to five lanes, plus the construction of sidewalks, bike lanes and raised medians is planned for the area between 12th and 27th streets. The section of the highway around Pilot Butte will require realigning and a lowering of the roadway grade in order to accommodate the construction of a future intersection with 15th Street (to the south). The intersection at 15th Street would eventually be signalized. No other intersections, between 15th Street and Purcell Boulevard, on Highway 20, are planned to have traffic signals. However, if subsequent refinement plans demonstrate an additional signal would improve the highway's function and safety, then another signal might be added consistent with the requirements in the Oregon Highway Plan for signal spacing. Along portions of Highway 20, in particular east of Pilot Butte, access management and some frontage

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road construction should be sought in conjunction with adjacent land development and redevelopment.

Highway 97 - north of the Sisters interchange The section of the highway, north of the Sisters interchange to the UGB, is five lanes with bike lanes. This portion of highway will continue to experience high traffic demands and TSM measures such as the construction of raised medians will be necessary to assure the carrying capacity and safe operation of the highway. The Cooley Road intersection will need to be developed as a grade-separated interchange in the future. The city of Bend will work with ODOT to prepare an Interchange Area Management Plan (IAMP) prior to construction of the interchange.

A frontage road is planned along the eastern side of the highway between Cooley Road and Robal Road. This frontage road will connect with Cooley and Robal roads at intersecting points to be located a sufficient distance east of Highway 97 adequate to minimize impacts to highway intersection operation. Currently, ODOT is evaluating a variety of frontage road designs, including an alternative "backage road" (with no direct connection to Cooley Road) and possibly completion of this road as a part of the (state funded) Highway 97 median project. A frontage road is also planned to serve the area on the western side of the highway, within the UGB, to be located north of Cooley Road. This frontage road is planned to connect to the Hunnel Road collector and not tie directly to Cooley Road (see: Bend Urban Area Transportation Map Exhibit B). In order to maintain capacity and safety for this highway segment, a raised median is planned between the Parkway and the north UGB. The construction of a raised median will likely take place concurrent with the final phase of the northern Parkway improvements.

Highway 97 - south of the Parkway The portion of Highway 97 south of the Parkway is a five-lane improvement with wide shoulders. This portion of highway will experience increased traffic volumes and TSM measures may be necessary to assure the carrying capacity and safe operation of the highway in the future. These TSM measures may include the construction of a raised median with channelization breaks (for left turns) to address these concerns. Land development adjacent to the highway should dedicate right of way, develop and direct access to an adjacent roadway or a frontage road system. As noted in the description of the Bend Parkway, ODOT and the City of Bend have evaluated alternatives that would extend Murphy Road to a point west of the Parkway (including grade separation) to meet a future frontage road (on the west side of the Parkway). Once this system is in place (see Figures 26A and 26B), the Parkway traffic signals at Pinebrook Blvd. and the south Highway 97 intersection should be removed. As a part of these system changes, the former street intersections should also be disconnected from the Parkway. Also, a grade separation of China Hat at Highway 97 may eventually be warranted. Development along this part of the highway should be monitored as it occurs. Further study of appropriate transportation system solutions should be conducted concurrent with new land development to ensure that the safety and

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capacity of the facility is maintained. Sidewalks will also need to be constructed along this section of highway as adjacent properties develop.

6.5.1.2 Principal Arterials

The principal arterials in the Bend urban area include all the non-expressway portions of the state highway system, except Century Drive (a minor arterial). The principal arterial roadways include 3rd Street and Highway 20 south of the Highway 97 and 20 intersection "wye" to 12th Street. These are primary highways, in addition to the expressways, that provide important roadway transportation linkages to (and through) the Bend area. The principal arterial system also carries high levels of truck traffic. Most of the trips (motorist and trucks from outside of the area) on the principal arterial system are destined to, or have stopovers in Bend. However, a small portion of the trips traveling these corridors has a regional or statewide destination and may pass through the community on these arterials without stopping.

The principal arterial system serves a statewide role and there are specific design, access management, and level of service requirements established by the Oregon Department of Transportation. These requirements are articulated in the *Oregon Highway Plan*[B.17]. The Plan emphasizes the need to meet the functional criteria of the state system and the principal arterial system will also need to fulfill the city's need to maintain a functional street grid network for the urban area.

When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

Principal Arterial Street Descriptions:

The principal arterial section of ***Highway 20*** begins at, and is south of, the Sisters interchange. It currently runs coincident with Highway 97 to Greenwood Avenue and turns east, following Greenwood Avenue to 12th Street. Upon completion, the Parkway will be designated as *Highway 97* south of the Sisters interchange, and the existing route (following Third Street) will remain *Highway 20.*

Highway 20, from the Sisters interchange to Greenwood Avenue, is a four- and five-lane facility. This portion of highway currently carries the highest traffic volumes within the urban area near the Mt. Washington Drive/Butler Market Road intersection. The most common type of future roadway improvement along this section of Highway 20 will be the construction of turn lanes at intersections, or raised medians and acceleration/deceleration lanes at major driveways. This section of highway also has large gaps in the sidewalk system. Bike lanes are also absent and are needed along many roadway segments.

Highway 20 has traffic signals controlling most of the major intersections along its length. An additional traffic signal is planned at the intersection of Olney Avenue to improve local east-west traffic circulation. Also, transportation modeling of the intersection of Butler Market Road/Mt. Washington Drive at Highway 20 indicates that this intersection may continue to be a source of congestion problems into the future, particularly as traffic volumes continue to grow over the next 20-years. Some improvements are planned on the west (the Mt. Washington Drive approach) of the intersection including a reconstructed bridge over the Deschutes River. In addition, *The Rivers Edge* development has been required to provide a corridor for a future local street bridge crossing below the irrigation diversion dam, in conjunction with future site development, but this exact location has not been determined. The location of this future bridge should be examined as a part of a comprehensive evaluation of traffic circulation solutions necessary to address the longer-term capacity needs for this section of the highway. From East 3rd eastward to 12th Street, Highway 20 is a five-lane facility. No specific capacity improvements are planned along this section of highway except the possible signalization of the intersection at NE Fourth Street and the implementation of other TSM strategies.

Access management and the consideration of frontage road development is needed on many portions of Highway 20. However, on most portions along the length of Highway 20, the opportunity to construct frontage roads is extremely limited due to the existing development patterns and limited available public right-of-way. The potential of restricting or closing individual accesses along the more urbanized portions of the highway, due to the abundance of existing driveways, is limited, too. Over the longer term, redevelopment of properties will provide opportunities to close and combine driveways, or to provide access via adjacent side streets. A raised median should be considered for installation on a principal arterial when any of the following occur (per ODOT recommendations):

1. Daily traffic counts exceed 28,000 vehicles per day,
2. In conjunction with reconstruction or modification projects, or
3. When operational, safety, or pedestrian needs warrant it.

East 3rd Street - south of Greenwood Avenue The section of East 3rd Street Avenue (also commonly known as: "South" 3rd Street), south of Greenwood, will remain a principal arterial after the Parkway is constructed. The jurisdiction of this street may be transferred to the City by the State - although more discussion is necessary to determine "how and when" this would occur. Third Street will remain a major business corridor within the urban area and traffic growth is expected to continue along the length of this principal arterial street.

The BNSF Railroad underpass on 3rd Street, located south of Burnside Street, is currently limited to two travel lanes. With the completion of the Parkway, the new roadway will provide immediate traffic congestion relief to this portion of 3rd Street. However, future traffic loading and the need for bike and pedestrian improvements to

this section of 3rd Street will likely generate the need to provide other underpass improvements.

Third Street, south of Greenwood also has numerous gaps in the sidewalk and bike lane system, which will need to be completed. Furthermore, all of 3rd Street has been contemplated for other beautification and TSM improvements, after the Parkway is completed, to improve the appearance and performance of the roadway.

Principal Arterial - Transportation System Management Strategies

Highway access Access management, specifically the type that restricts driveway access points, is a technique that can bolster system capacity and improve highway safety. However, the construction of improvements that will limit left turn movements must be sensitive to existing development that relies on the convenience of roadway system access. Thus, the City and State should work cooperatively with businesses along the principal arterial street corridors to develop access management plans that will achieve the desired transportation system results and still fulfill business needs.

Signal Spacing Traffic signals and coordinated timing plans can improve or optimize traffic flow by providing a better grouping or "platooning" of traffic along arterial street corridors. Traffic signals can also improve gaps in traffic flow that facilitate access to the arterial system at intersecting streets and driveways between the signalized locations. It is therefore important that the location of traffic signals follow consistent spacing standards in order to fulfill the greatest system benefit. Traffic signals should not be utilized as a tool to facilitate access to selected land uses, such as high-volume, commercial land use trip generators, but as a part of an overall coordinated transportation system planning tool. In most cases, this will limit the location of traffic signals to intersecting arterial and collector streets.

6.5.1.3 Major Arterials

Major arterials are intended to serve as routes for travel between areas of major traffic generation and major activity centers, and residential and commercial areas. Trip lengths are commonly longer in nature along the major arterial street system. To fulfill this function, major arterial streets are normally spaced at 1-2 mile intervals. A greater emphasis on access control, than along minor arterials, will be sought on these facilities. Effort will be made to limit left turn movements on these roadways to controlled locations through the construction of raised medians.

Some segments of the major arterial street system may be constructed to four- or five-lane street widths, particularly at intersections to provide dedicated turn lanes, and sufficient right-of-way corridors (i.e., 100 feet wide) should be acquired to ensure that this type of future street design is feasible. Major arterials in the Bend urban area system include the following: Reed Market Road (east of Blakely Road), Empire Avenue (east of Highway 20/97) and East 27th Street (north of Reed Market Road).

When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

Major Arterial Street Descriptions

Reed Market Road, between Silver Lake Boulevard and East 3rd Street, will be improved in coordination with the Parkway project. This improvement will construct a new arterial roadway from Silver Lake Boulevard to the Parkway (depending on other timing circumstances with private development, this roadway improvement could be extended farther west to meet the Bond/Blakely Road corridor). Between East 3rd and 27th streets, Reed Market Road will ultimately be improved as a three to five-lane arterial with limited driveway access. Currently, there are some turn lane and bike lane improvements between East 3rd and 15th streets, but sidewalks are missing and are needed throughout most of this two-mile section of roadway. [Reed Market Road, east of 27th Street is designated as a major collector, for both the future and existing sections.]

The ***East 27th Avenue*** corridor, between Reed Market and Butler Market roads, is the north-south component of the major arterial system on the eastern side of town. The roadway is currently improved with two travel lanes, and some additional five-lane widening near Highway 20. There are discontinuous sections of sidewalk and bike lane improvements constructed between Neff and Butler Market roads. Additional roadway capacity, and the completion of pedestrian and bikeway improvements will be needed to fulfill the transportation system needs along the corridor. Significant portions of the "major arterial" segment of the 27th Street corridor will ultimately be improved to a five-lane roadway section. A final determination of the number of lanes required (and for what segments) will be determined during the roadway design process.

The extension of ***NE Empire Avenue***, between Boyd Acres Road and East 27th Street, will help to complete the arterial street system on the eastern side of Bend and provide a valuable east-west roadway connection to the Parkway. The Empire Avenue grade separation, over the Parkway, has been built to accommodate a future five-lane roadway. Other sections of Empire Avenue, east of Highway 97, are currently improved with two and three-lane roadway sections. This includes the short segment of Empire Avenue that has recently been constructed between NE 18th Street and Yeoman Avenue. Sidewalks and bike lanes are also missing and needed along most of this corridor. Significant portions of the "major arterial" segment of the Empire Avenue corridor will ultimately be improved to a five-lane roadway section. A final determination of the number of lanes required (and for what segments) will be determined during the roadway design process.

6.5.1.4 Minor Arterials

The minor arterial street linkages planned for the urban area are illustrated on the Roadway System Plan Map (and are also listed in Table 11). As the community grows beyond the planning period or there are other changes in land use, additional arterial streets may be determined necessary. The alignments of new arterial streets on the Plan map are general in nature and refinements may occur through the land development process, or as otherwise determined by the City.

The minor arterial street network interconnects and augments the principal and major arterial street system. Trip lengths are normally of moderate distances. Minor arterials often border and establish the edge of neighborhoods. Minor arterials often support local or neighborhood commercial areas. Pedestrian and bicycle traffic is frequent on these streets. Minor arterials are generally spaced at about one-mile intervals, although in the more dense areas of the community minor arterials are commonly located at a greater frequency. Under ideal circumstances, access to the minor arterial street should be limited to prescribed spacing intervals and direct driveway access points should be limited as much as practical.

The minor arterial street system will need to be improved to address a wide range of transportation system demands, including pedestrians, bikes, transit vehicles and motor vehicles. Minor arterial streets range in width from two to four-travel lane roadways. New or reconstructed minor arterial street widths will be based on the determination of the improvement needs of all modes of travel.

Because minor arterial streets usually serve neighborhoods and support high levels of pedestrian and bicycle traffic, the addition of lanes to serve motor vehicles must be carefully balanced against the impacts to other forms of travel and the environment that they pass through. In the event that alternatives to street widening have been exhausted and additional lanes are necessary, all appropriate measures should be taken to consider design alternatives and solutions to mitigate the impacts created on the adjoining neighborhood or the abutting businesses. Landscaped center medians, access management, pedestrian refuges, and the provision of street trees, among others, are examples of measures that can be taken to mitigate the impacts of road widening.

When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

Central City - Minor Arterial Street Widening Limitation

Recent transportation and land use studies and reports, such as; the *Newport Avenue Corridor Study*, 2000, and the *Use of Land for Transportation Alternatives* (ULTRA), 2003, [although

neither have been officially adopted by the City] have supported the concept of minimizing roadway widening in exchange for preserving specific community qualities. Thus, the studies have advocated the development of transportation corridor improvements that emphasize community and streetscape design that will continue to foster and enable non automobile modes of travel. Simply stated, these studies have concluded that this alternative transportation/land use development scenario may be a more prudent strategy and may actually help reduce the demand on roadway capacity and therefore overcome a need to widen these particular arterial street corridors.

Widening arterial streets, although it may provide important added roadway capacity to serve automobile demand, can have too detrimental of an impact on the neighborhoods that are impacted by the roadway widening. One result of street widening is that it can develop an environment that may be counterproductive to fully developing and realizing the benefits of non automobile alternatives for a specific corridor. Many citizens that have actively participated in public workshops, related to these previously mentioned studies, have indicated that they prefer placing a higher value on preserving the existing character of these neighborhoods and are, for the most part, willing to endure higher roadway congestion levels and travel delay in exchange for preservation of the affected neighborhoods.

For these reasons, the Bend Transportation System Plan (TSP) seeks to acknowledge specific corridors within unique areas of the central city where the combination of existing land uses; residential, commercial and institutional, and the presence of a well-connected system of local streets and accessways, that provide a diverse range of travel options and mode choices, may make minor arterial roadway widening unnecessary and/or less desirable. Thus, the following minor arterial corridors are identified by the Plan as *"not being authorized for lane expansion"* (unless subsequent study has been supported by an amendment to the Plan to permit the roadway widening, an existing safety issue has been identified and approved by the City Council that will be resolved by a widening project, or the improvement is otherwise exempted by TSP Street Policy 21):

West Central City:

- NW 14th Street, between Newport and Galveston avenues
- NW Newport Avenue, between 14th Street and Wall Street
- NW Galveston Avenue, between 14th Street and Riverside Avenue

Downtown Central City:

- NW Greenwood Avenue, between Wall Street and the Parkway
- NW Riverside Avenue, between Tumalo and Franklin avenues & NW Franklin Avenue, between Wall Street and the Parkway
- NW Wall Street, between Greenwood and Franklin avenues & NW Bond Street, between Greenwood and Franklin avenues

East Central City:

- NE 8th Street, between Olney/Penn and Franklin avenues
- NE Olney Avenue, between 4th and 8th streets
- NE Franklin Avenue, between 4th and 11th streets & NE Bear Creek Road (including the 11th St. extension), between Franklin Avenue and 15th Street

Minor Arterial Street Descriptions

Southern River Crossing Reed Market Road, between Century Drive and **Brookswood Blvd**/Bond Avenue is designated as a minor arterial street. The alignment generally extends along the old log deck extending westerly to a narrow point on the river and continues along an old logging road grade to the intersection of Mt. Washington and Century drives.

The concept of extending a new arterial street across the Deschutes River, south of the mill, can be traced back to the 1950s. This alignment appears on the early City zoning plans of the 1960s and was later incorporated in the Bend Urban Area General Plan, in the late 1970s. The historic selection of the Reed Market Road alignment as the planned southern river crossing was based on a number of factors:

1. The alignment skirted the area occupied by Bend's last lumber mill. This was the edge of the industrial zoned properties where large equipment generated loud noise and dust impacts.
2. The alignment was a continuation of the major roadway system serving the entire urban area, and the bridge would complete this east-west roadway linkage across the river.
3. Ease of roadway construction. This is attributed to the narrow river crossing width, the fact that it follows preexisting roadway grades to Century Drive on the western side of the river, and it crossed an already disturbed log deck area on the eastern side.
4. The alignment was largely undeveloped except for the mill activities.

Over the course of the preparation of the General Plan update, City Council held extensive discussions on the subject of alternative river crossing locations and designs. In 1998, in response to these deliberations on a bridge location, Council made a decision that the extension of Reed Market Road should remain as shown on the plan. Stating further that it should be constructed as a two-lane roadway (i.e., the roadway should provide one travel lane in each direction, plus bike lanes and sidewalks, with raised medians and turn lanes permitted where necessary).

City Council's direction also supported the development of another "local" street bridge to be constructed within the Old Mill site at a location further downstream from the planned arterial bridge. The intent of this local bridge was to accommodate the traffic generated by the Old Mill development and to reduce the burden on adjoining arterial river crossings. The City shall involve the public, the Park District and other governmental agencies in developing a roadway design for the southern river crossing that complements the natural features of the river area.

Cooley Road will provide east-west circulation from Highway 20 east to Deschutes Market Road. The Cooley Road/Highway 97 intersection will need to be developed as a grade separated interchange in the near future to accommodate on-going development in the vicinity, as well as future industrial uses on UGB expansion sites. It will eventually become a major access route to the City's industrial park reserve area. The existing road now terminates at the southern boundary of the industrial reserve property (City owned)

and will need to be extended to the east as future development occurs. Sidewalk and bike lane facilities are missing along most portions of Cooley Road and will be needed as other roadway improvements are made. Development along this part of Cooley Road should be carefully managed to ensure that the function of the Cooley/Highway 97 intersection is not compromised.

Located immediately north of the Mountain View Mall, ***Robal Road*** will provide an arterial connection between Highway 20 and Highway 97. In addition, ***Hunnel Road*** is planned to extend north from Robal Road to Cooley Road. The combination of the two arterials will provide a grid of streets that will help reduce demands on the two state highways. These arterial streets will serve as frontage roads for the developing commercial properties situated between Cooley Road and the two highways.

Empire Avenue, between O.B. Riley Road and Highway 20, is a minor arterial. This roadway will be improved to a three-lane road width with some additional turn lane improvements necessary; at Highway 20, to accommodate vehicle turn movement demand. The close proximity of the Jamison Street (i.e., the frontage road paralleling Highway 20, to the west) intersection to the Highway 20/Empire Avenue intersection could be the source of future safety or capacity issues. If these problems materialize, then a raised median on Empire Avenue may be needed to eliminate problem vehicle turns to/from Jamison Street.

Butler Market Road has been improved with three lanes from Highway 97 to East 27th Street. The improvements include bike lanes, but sidewalks are missing and needed along many segments. Portions of Butler Market Road may need to be widened to five lanes in the future.

Revere Avenue, between Hill and 8th streets, will experience significant traffic increases due to the fact it will be one of the few full access interchanges to the Parkway. Widening improvements are needed to complete the arterial to a five-lane road width and to provide sidewalk and bike-lane facilities. Another future issue on Revere is the at-grade crossing of the BNSF Railroad. Revere is one of the few remaining at-grade railroad crossings in Bend and the close proximity of the Parkway; Division and 3rd streets will make a future grade separation very difficult. This problem location is further compounded by the recent merger of the Burlington Northern and Santa Fe railroads, which reportedly will result eventually in more trains being routed through the Central Oregon area. This will likely create a greater incidence of train-induced traffic delays. The combined impact of increased train and traffic loads will likely generate capacity problems for this crossing in the future.

Hill and Wall streets, from Revere to Lafayette, will also see significant traffic impact after the Parkway is completed. This will be a major northern entry into the downtown from the Parkway. There will be a need for additional road capacity, bikeway and pedestrian improvements. The route passes by Pioneer Park and impacts on the park must be minimized.

The ***Portland/Olney/Penn/Neff*** corridor will provide an improved east-west route across the entire community and will enhance access to St. Charles Medical Center from the west side of town. This route passes by Pilot Butte Middle School and near Juniper Elementary schools. Sidewalk and bike lane improvements are needed on many portions of the corridor.

Franklin Avenue needs to be improved to four and five lanes from the railroad underpass to NE Fourth or Fifth streets. Some sections of sidewalk are also missing. Franklin Avenue is also proposed to connect to a (future) southern extension of ***NE 11th Street***. This new road extension would follow along the west edge of the cemetery to Bear Creek Road. This new roadway would replace the current use of 10th Street as an arterial roadway between Franklin Avenue and Bear Creek Road.

The need to widen the Franklin Avenue underpass of the Parkway/BNSF Railroad should be monitored as traffic growth occurs in the City. Provided other east-west transportation improvements occur in the City, widening this under crossing may not be necessary within the 20-year planning horizon. However, alternatives should be evaluated for improving bicycle travel through this area. Hawthorne Avenue, between Hill and East 3rd streets, is included within the Plan as an under crossing route alternative to the widening of the Franklin Avenue under crossing and effort should be made to preserve this corridor for this purpose. Due to the expense to construct grade separations and the disruption that this type of construction causes, the Hawthorne Avenue alternative may be economically and practically a more achievable improvement than widening the Franklin Avenue/Parkway/RR structure. A comprehensive study should be conducted of the under crossing and alternatives to determine the timing and need for these potential future improvements, and to resolve any conflicts with the existing downtown connection to the Parkway (via Hawthorne).

Newport Avenue is currently improved with two travel lanes and a center median (turn lane) between College Way and West 3rd Street. Bike lanes are striped from College Way to Awbrey Road. Concrete sidewalks are missing west of NW 12th Street on Newport Avenue. Future improvements to the Newport bridge crossing should provide adequate bike, pedestrian and trail (i.e., a trail under crossing on the eastern side of the river) improvements. Future improvements to Newport Avenue, from Wall Street to College Way, should consider the specific design recommendations included in the Newport Avenue Corridor Study, dated March 2000. West of College Way, ***Shevlin Park Road*** is improved with two lanes, wide shoulders, and no curbs or sidewalks. Sidewalks, bike lanes and turn lanes need to be constructed considering the same design recommendations as the area continues to develop and needs increase.

Galveston Avenue is currently improved with two travel lanes and bike lanes from NW 14th Street to Riverside Avenue. Some sidewalks have been improved along this segment of roadway. West of NW 14th Avenue, Galveston Avenue is a curbed, two-lane roadway with no sidewalks or bike lanes. Sidewalks will be constructed and bike

lanes striped as the area develops and these needs are identified. West of Lindsay Court, ***Skyliners Road*** is improved with two travel lanes, no curbs, sidewalks or bike lanes. Sidewalks, curbs, bike lanes and turn lanes will be completed with future development along this section of Skyliners Road.

Greenwood Avenue, from Newport Avenue to Third Street, is currently improved with two travel lanes, in each direction. Separate left-turn pockets are currently located on the eastbound approach to Third Street and between Wall and Bond streets for both directions of traffic, otherwise an exclusive center turn lane is absent and needed along the rest of this section of Greenwood. A raised median has been constructed to prevent left-turn movements at NE 2nd Street. This was constructed to optimize traffic flows, improve arterial efficiency and as a safety improvement measure. Sidewalks have been completed along this arterial street but bike lanes are absent. In 1994, Greenwood Avenue between Wall and the Parkway, was the subject of a lengthy community discussion and evaluation of possible bike lane improvements[B.6]. One of the issues, with adjacent businesses, was the possibility of losing on-street parking in order to accommodate the bike lane. There were a number of travel lane reconfiguration alternatives discussed, but City Council chose to wait until the TSP was completed and the Parkway was opened before taking up this matter again. [The portion of Greenwood east of Third Street is designated as a principal arterial and an expressway and is part of the state's highway system.]

A substantial amount of residential and commercial growth is planned on the west side of Bend. This will increase the traffic demand on ***Portland, Newport and Galveston avenues***. It is important to note that the traveling public will seek solutions to the capacity problems that will result along these corridors. This will include alternatives to widen these roadways and their respective bridges as this new development pressure materializes. This need and desire to widen these roadways may be accentuated if alternatives are not in place to reduce this longer-term system demand.

Colorado Avenue extends from Division Street to West 14th Street. It is a part of the Oregon Department of Transportation's (ODOT) Century Drive corridor. This ODOT *district highway* provides the key connection between the Mt. Bachelor ski area and the Bend community. This district highway classification is quite similar to the City's minor arterial classification, and as such the administration of access points will be treated according to the General Plan minor arterial design criteria. When the new Reed Market Road extension (southern river crossing) is completed across the river, it is recommended that the City and State evaluate designation of the new linkage between Colorado Avenue and the Parkway as a part of the Century Drive corridor.

Arizona/Colorado one way pair (couplet) system: The conversion of Arizona and Colorado streets to a one way pair "couplet" system, between Broadway and the Parkway, is planned as a method of increasing arterial road capacity without the need to widen existing Colorado Avenue. This is also planned as a strategy to improve downtown access to and from the Parkway. Both roadways would be designated as

minor arterials, with Colorado carrying the westbound traffic and bike lane, and Arizona Avenue the respective eastbound movements. The City will develop a street design; including turn lanes, landscaping and access control that will fit the specifics of this project. Wall and Bond streets, between Colorado Avenue and Industrial Way, will serve as major collectors. See, Figure 18. Wall and Bond streets will connect, via Industrial Way to Bond Street South, as shown on Figure 18 through the Old Mill site, to meet and connect to Brookswood Boulevard. The City has acquired right-of-way to extend Wall and Bond streets from Arizona to Industrial Way. This extension will link downtown Bend with the Old Mill District mixed use development zone. As previously mentioned in the "Proposed Roadway System Changes" section of this TSP, the City will also be studying an additional connection, the use of Lava Road in combination with Bond and Wall Streets for this street connection.

Century Drive, south of West 14th Avenue, is a *district highway* under ODOT's classification of roadways. This district highway classification is quite similar to the City's minor arterial classification, and as such the administration of access points will be treated according to the General Plan minor arterial design criteria. A *roundabout* has been constructed at the intersection of 14th Street and other intersection improvements (to be designed) are contemplated at, or near, the Mt. Washington Drive intersection.

Wilson Avenue, between Bond Street and East 3rd Street, is designated as a minor arterial roadway. This section of Wilson Avenue will need roadway capacity, sidewalk and bike lane improvements. Some of these improvements have been completed as a part of the grade separation construction over the Parkway. However, completion of the full street standard (sidewalks, bike lanes and turn lanes) will still be necessary from 2nd to 3rd streets. [Wilson Avenue is designated as a *major collector* roadway east of East 3rd Street but completion of sidewalk and bike lane facilities will still be necessary along this section of roadway.]

Knott Road is the southernmost east-west arterial in the urban area. It provides a connection between Highway 97 and East 27th Street south of the Burlington Northern-Santa Fe Railroad at the Baker Road interchange. This arterial will not experience as heavy a traffic demand as other arterial streets in the community, but intersection improvements such as left turn lanes at the major intersections will likely be warranted to enhance safety and to ensure satisfactory roadway operation. Bike lanes are needed along many sections of the roadway and sidewalk construction should be provided as pedestrian activity along the roadway warrants the improvements.

Mt. Washington Drive currently begins, on the north, at its intersection with Highway 20/97. It extends around the northern side of Awbrey Butte wrapping around the mountain until it heads south near the Valhalla Subdivision. It is planned to extend south of Shevlin Park Road in conjunction with the development of the new grade and high schools and other property development between Shevlin and Skyliners roads. It

will continue southerly, crossing Skyliners Road and will be extended to connect to the existing roadway that now terminates at the intersection of Century Drive. Mt. Washington Drive will provide an important arterial street on the western side of Bend. This will provide a continuation of the companion Reed Market/East 27th/Empire loop that serves a similar function on the eastern side of the river. Mt. Washington Drive, for most of its length, will be improved to a two and three-lane wide roadway, with bike lanes and sidewalks (although variances have been granted in the steep slope areas to construct a sidewalk on only one side). Also, portions of Mt. Washington, south of Shevlin Park Road, may need to be widened to five lanes in the future. Special design treatments may be considered through the planned west side commercial and industrial areas north of Skyliners Road that includes roundabouts at key intersections.

Division Street currently extends from Highway 20/97 (just south of the Butler Market Road intersection with the highway) on the north, to Brosterhous Road on the south. Division Street is a major north-south route that parallels Highway 97 and has provided significant relief for East 3rd Street/Highway 97 traffic. After the Parkway is built, the remaining north segment of Division Street, from Highway 20 south to Revere Street, will continue to serve as a minor arterial. The short segment of Division Street between Cleveland Avenue and Reed Market Road will become a local street and provide northbound access to the Parkway. Division Street currently has bike lanes the full length although some sections will continue to need sidewalk improvements.

West 14th Street south of Newport Avenue, is a minor arterial street in the Plan. Bike lane improvements have been striped along its length but some sections of this arterial are missing sidewalks. The need for additional turn lanes should be evaluated at major intersections as traffic volumes increase on Bend's western side.

In northeast Bend, north-south minor arterial streets include; ***4th Street*** (north of Franklin), ***Boyd Acres Road*** and the ***8th/9th street*** corridor. Bike lane improvements are provided on the 8th/9th street corridor but are missing on most of Boyd Acres Road and 4th Street. Sidewalks are also missing and needed along all of these arterials.

North-south arterials, in the southern part of Bend, include ***Brookswood/Blakely Boulevard***, which extends from Wilson Avenue (on the north) and parallels Highway 97 south to Baker Road. Brookswood Boulevard is planned to extend north of Powers Road, across the canals, and join Blakely Road near McClellan Avenue. It will then follow an old Brooks-Scanlon logging road, west of Blakely Road, down into the Old Mill site where it will intersect the Blakely/Bond street extension. Improvements will include construction of a two and three-lane wide roadway, with bike lanes and sidewalks.

Another north-south arterial is ***15th Street***, which currently extends from Bear Creek to Knott roads. Fifteenth Street is planned to extend between Highway 20 and Bear Creek Road with a redesigned (Highway 20) intersection on the south flank of Pilot Butte. The grade on Highway 20 will need to be lowered to accommodate this future intersection.

Bike lanes are currently striped on 15th Street south of Bear Creek Road but many sections of the roadway are missing sidewalks.

NE 18th Street, between Cooley Road and Empire Avenue, is currently improved with a two and three-lane roadway, bike lanes and a sidewalk (along most of the west side of the road). Other sidewalk improvements will be completed with future development in the area. The section of NE 18th Street, between Brinson Road and Empire Avenue, will be completed with future area development as an industrial collector street.

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Table 11
Minor Arterials within the Urban Area

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Minor Arterial Streets	From	To
Arizona (future: *eastbound* only)	Colorado (near Broadway)	Parkway
Bear Creek Rd. (also:11th St. ext.)	Franklin Avenue	27th Street
Blakely Road	Brookswood Blvd.	Wilson Avenue
Bond Street	Wall Street	Franklin Avenue
Boyd Acres Road	Empire Avenue	Butler Market Road
Brookswood Blvd.	(Beyond) South UGB	Blakely Road
Butler Market Road	Highway 97	(Beyond) East UGB
Century Drive	(Beyond) South UGB	Colorado Avenue
Colorado Avenue (2-way)	Century Drive	Arizona
Colorado (future: *westbound* only)	Arizona	Parkway
Cooley Road	Highway 20	Deschutes Market Road
Division Street	Highway 97 (north)	Revere Avenue
East 15th Street	Highway 20	Knott Road
East 18th Street	Cooley Road	Empire Avenue
East 27th Street	Reed Market Road	Knott Road
East 4th Street	Butler Market Road	Franklin Avenue
East 8th/9th streets	Butler Market Road	Reed Market Road
Empire Avenue	O.B. Riley Road	Highway 20
Franklin Avenue	Wall Street	Bear Creek Rd. ext. (11th St.)
Galveston Avenue	Skyliners Road	Riverside/Tumalo
Greenwood Avenue	Newport Avenue	East 3rd Street
Hill Street	Revere Avenue	Wall Street
Hunnel Road	Robal Lane	Cooley Road
Knott Road	Beyond south UGB	Beyond east UGB
Mt. Washington Drive	Century Drive	Highway 97 (Butler Mkt.Rd)
Murphy Road	Brookswood Boulevard	Parrell Road
Neff Road	8th Street	Beyond east UGB
Newport Avenue	Shevlin Park Market Rd.	Greenwood Avenue
Olney Avenue	Hill Street	8th Street
Reed Market Road	Century Drive	Blakely Road
Revere Avenue	Hill Street	8th Street
Riverside Blvd.	Galveston Avenue	Wall Street
Robal Lane	Highway 20	Highway 97
Shevlin Park Mkt. Road	West UGB	Newport Avenue
Simpson Avenue	Mt. Washington Drive	Colorado Avenue
Skyliners Road	West City limits	Galveston Avenue
Wall Street	Hill St./Portland Ave.	Franklin Avenue
West 14th Street	Newport Avenue	Colorado Avenue
Wilson Avenue	Blakely/Bond	East 3rd Street

Murphy Road is proposed as a new Minor Arterial between Brookswood Boulevard and Parrell Road at the south end of the city. This project was a recommendation in both the South Bend Parkway Refinement Study and the Murphy Crossing Refinement Plan (see Figures 26A and 26B). Murphy Road between Business 97 and Parrell Road will be realigned slightly to the south and reclassified from a Major Collector to a Minor Arterial. The traffic signal at the intersection of the existing Murphy Road and Business 97 will be relocated to the new intersection of Murphy Road and Business 97. Murphy Road will then cross over the Bend Parkway with no direct access to the highway. Special roadway cross section standards for Murphy Road were developed in the Murphy Crossing Refinement Plan. From Parrell Road west to the new frontage road west of the Parkway, Murphy Road will have a three-lane cross section with raised center medians and center turn lanes within a 100-foot right-of-way. The wide right-of-way is needed to accommodate auxiliary turn lanes at the intersection of Business 97. West of the frontage road and through the commercial zones, Murphy Road will have a three-lane cross section with raised center medians and center turn lanes within an 80-foot right-of-way. Murphy Road will then transition to a two-lane cross section within a 60-foot right-of-way in the residential zones to where it intersects Brookswood Boulevard. This new section of Murphy Road between Brookswood Boulevard and Parrell Road will have bicycle lanes and sidewalks on both sides of the roadway. The intersections of Murphy Road with Brookswood Boulevard, the south frontage road and the north frontage road and the intersection of the southbound Parkway off-ramp and the south frontage road will be controlled by roundabouts. The intersection of Murphy Road and Parrell Road will be controlled by a traffic signal. All other new intersections will be controlled by stop signs. See Chapter 2.7 of the Bend Development Code for schematics of these special roadway cross section standards.

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6.5.1.5 Arterial - Frontage Roads

In some areas along the arterial street system, it will be desirable to construct frontage roads. A number of frontage roads have been predetermined and are illustrated on the Roadway System Plan (Map Exhibit B.). Frontage roads may be located, as determined necessary, by the State and City, as properties develop along other arterial corridors. The intent of a frontage road is to collect traffic from properties that abut the arterial roadway and channel this traffic to an intersecting street or controlled intersection with the arterial. The objective of this design is to control the random turning movements that would otherwise compromise the safety or diminish the capacity of the arterial street. In many cases, the frontage road may parallel the arterial for some distance before it makes a connection. The design of frontage roads shall be treated like any other public street, in terms of the location of sidewalks, planter strips and the structural section of the pavement. The width of the frontage road should be based on the forecast traffic

expected to use the facility. For example, frontage roads anticipated to handle truck traffic should be built to the minimum Industrial Street Standard.

When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

6.5.1.6 Major Collectors

The major collector street linkages planned for the urban area are illustrated on the Roadway System Plan (Map Exhibit B.). Collector streets are normally located at about every half mile. Additional collector streets may be determined necessary as vacant lands are developed or there are other changes in land use. The alignments of new collector streets on the Plan Map are general in nature and refinements may occur through the land development process, or as otherwise determined by the City.

The major collector street system provides both land access service and traffic circulation between the higher order arterial streets. The collector street system provides a connection between neighborhoods and the arterial street system. The majority of collector traffic is normally generated from the area that it passes through, but additional through trips can be anticipated in the collector volume totals.

The collector street system, like the arterial system, places a greater emphasis on mobility over access to land use. As such, access control measures should be maintained along major collector streets. Driveways should be combined and alternative connections to side streets or alleys should be provided.

Major collector street function and design is a careful balance between the movement of vehicles and minimizing impacts caused by traffic volume, speed and noise. Major collectors may include three-lane street sections to accommodate high turning-movement activity. "Traffic calming" devices may be considered where traffic impacts become adverse to residential livability and community walkability. The City's on-street bike lane system includes use of major collectors. When bike lanes are striped, adjacent parking should be discouraged (as discussed in Section 6.3 of this chapter).

6.5.1.7 Residential Local Streets

A residential local street provides the basic function of direct access to abutting residential properties. Thus, each parcel is normally permitted driveway access to the local street. Through traffic movements should be discouraged, although some traffic from other local streets in the same neighborhood may be expected. The overall objective is to minimize the traffic volumes on each local street by distributing the

neighborhood traffic to several local streets. To achieve this end, local streets should be developed in a grid-like street pattern with a distance of about 300-600 feet between blocks.

Trip lengths on local streets are normally short and traffic volumes are lower, and the collected traffic from local streets is directed to major collectors. Street standards should be developed to provide adequate space that will accommodate parking on both sides, provide for sufficient room for the passage of cars, emergency vehicles and snow plowing equipment.

Local streets are a strong element in the character and quality of residential areas. They should recognize the character of the natural landscape through which they pass through, and modification of the design standards should be possible when necessary to preserve this character. In addition, variations to a standard residential street should be considered as a means of relieving visual monotony in residential areas. However, any design modification must accomplish the same result, as would a standard street design. Changes in design standards should not be permitted simply as a means of reducing right-of-way or paving requirements.

The Subdivision Ordinance update will provide flexibility in street design while accommodating emergency service access. It has been recognized that skinnier streets may reduce traffic speeds and thereby improve livability. The State (DLCD) has been working on guidelines that also seek to improve livability through the use of narrower streets. The City's Subdivision Ordinance is consistent with that objective however the City will continue to explore methods to balance this goal with public safety needs and addressing the unique characteristics of the Bend urban area.

The location of residential streets will largely be identified through the development review process and streets shall be located according to the standards established by the functional classification system and City Ordinances. The City may assist in this street location effort with the development of circulation concept plans to assure that an acceptable frequency of residential street grids is achieved within developing neighborhoods.

6.5.1.8 Industrial Streets

Industrial areas are located near the arterial and state highway street system, and as a result of this proximity, local industrial streets provide a fairly direct transportation system linkage from the arterial streets to industrial zoned properties. This provides a convenient connection to industrial areas that generate a substantial number of truck trips in the movement of products and raw materials. Historically, the high truck volume has required that industrial streets be constructed with extra pavement and base rock and wide enough to accommodate the large vehicle turning, backing and maneuvering activities. On-street parking is sometimes restricted to further facilitate turn movements and to permit trucks to occasionally queue up on the street. Thus, these roadways are

built to a specific roadway design to accommodate the needs of this type of vehicle movement, including broad curb radii and wider curb-to-curb widths.

In recent years, due to changes in technology and a dramatic turn away from lumber products in this community, use of industrial areas has changed in some areas. In those examples, use of the industrial lands has taken on more of a business or office park image and truck traffic volumes are significantly lighter. In these instances, there is less of a demand for expansive street widths to accommodate truck traffic. With this in mind, a smaller street standard can be considered to handle this lower truck freight demand in those less intensive types of industrial development. Parking restrictions are less of a concern, but may be necessary to accommodate some nominal truck activity. Thus, a narrower street standard can accommodate the lighter industrial area needs of the business park type environment. New industrial developments should match the appropriate street width requirements associated with the truck movements that are anticipated with the build-out of these areas.

Industrial streets are normally not striped with turn lanes, except at major intersections, and occasionally they may be striped with a centerline to improve lane delineation. Bike lanes are not necessary on these types of streets, unless they are a part of a major collector, arterial street or otherwise part of the on-street bikeway system.

6.5.1.9 Alleys

Alleys are a street design element that has been utilized in the Bend urban area for many decades. While their use was far more common in street construction and land development prior to the mid-1940s, the concept has come in vogue as a part of the "traditional neighborhood design" (TND) movement. Use of alleyways, as a rear property access point, has always been a means of reducing scattered turning movements along public streets and an advantageous way of making sidewalks more "friendly" and safer for pedestrians. Alleys also provide additional options for utilities.

6.5.2 OTHER ROADWAY ELEMENTS

6.5.2.1 Intersections

Where arterial streets intersect other arterials, or in some cases where they intersect some of the more significant major collector streets, installation of traffic signals will, in most cases, be warranted. Another intersection treatment, now gaining greater acceptance in this country, is the use of a roundabout. Roundabouts have shown promising results in other communities, including reduced intersection improvement costs, improved capacities, reductions in roadway widening needs, and have proven to be a suitable alternative to some traffic signal installations. It is important that the City develop standards for the location and design of traffic signals, roundabouts and other transportation system management techniques to provide guidance and consistency in the application of these improvements.

At all major intersections, where streets classified as a major collector or arterial meet, additional right-of-way needs to be preserved to accommodate turn lanes or alternative design treatments such as roundabout construction. This additional right-of-way, plus transition from the normal street section, should be delineated in the street standards.

Modern urban roundabouts:
The modern urban roundabout (Figure 27) provides intersection control by circulating traffic movements counter- clockwise around a central intersection island. Vehicles entering the roundabout yield to pedestrians at approach crosswalks and to other vehicles that have already entered the central circulating lane. For pedestrians, roundabouts reduce the amount of pavement required to cross, reduce wait times and minimize auto conflicts to a single direction of travel. There are also fewer vehicle accidents in roundabouts due to slower speeds and the elimination of cross turning movements.

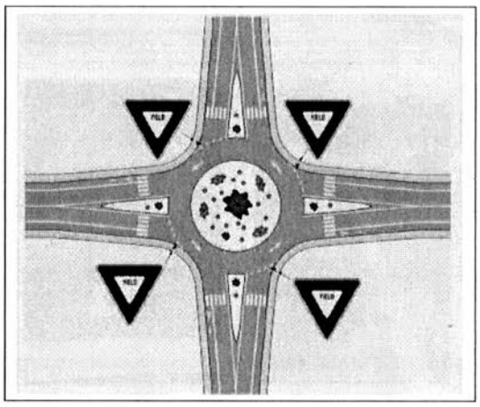


Figure 27. A typical Modern Urban Roundabout
Source: Oregon Bicycle & Pedestrian Plan

6.5.2.2 Access Management (Median Control)
Access management along arterial streets is an important system management tool that can enhance roadway carrying capacity by minimizing conflicts caused by vehicle turning movements. The most common technique of access control is the management of private driveway locations. The higher the functional classification - the more restrictive the access control. The City, County and ODOT have adopted management agreements to the Parkway and have adopted policies that control access on all types of arterials within the urban planning area.

Another technique of providing access control is the construction of raised medians. The City has a policy of installing medians in new construction or modernization of arterials and collectors. Where raised medians are constructed for the full length of a street, driveways and intersections are precluded from left-turn movements. A less restrictive condition to full median control is the construction of partial medians. In this case, breaks are permitted in the median at predefined intervals to accommodate left turn movements. Breaks in the median may be allowed where the City determines that no deterioration in the roadway operation will occur.

6.5.2.3 Community Appearance

Roads should complement the environment that they pass through and should be attractive as well as safe for all modes. This will require good street design as well as control of access wherever possible, and development should be designed to minimize unnecessary intersections and other turning movements. The installation of landscape medians and traffic islands on new and existing arterials can provide both safety and beauty, and can improve the function of the street (Figure 28). As an example, a landscaped median within East 3rd Street and Greenwood Avenue could considerably improve the appearance of both these facilities and of the City of Bend. This technique should be considered wherever a continuous left turn lane exists along an arterial street.

6.5.2.4 Steep Slope Areas

Hillside areas require special consideration in street design. Arterial or collector streets with controlled access can reduce the number of lanes and parking areas required, and thereby reduce the width of the street that must be constructed on the hillside. Small one-way loop streets providing service to a limited number of houses will also minimize cuts and fills on hillsides. Awbrey Butte represents a major topographic feature in the community. Due to the uniqueness of this hill, several master plans for the development of Awbrey Butte have been approved that have reduced street standard requirements.*

{* Special street standards for portions of Awbrey Butte have been approved by City of Bend Resolution numbers 1679 and 2067 [A.4].}

6.5.2.5 Traffic Calming

The volume or speed of traffic that travels on residential streets can often be a source of discomfort to residents. In some cases, high volume or speeding traffic can erode neighborhood livability. Where traffic conditions are excessive, there are a number of techniques that can be used to "calm" driving behavior. These include: narrowing the street, constructing neighborhood traffic circles, speed humps, curb extensions, islands, turn restrictions, street chicanes (i.e., converting a straight street to a meandering road with curb extensions), and combinations of these devices. Traffic calming strategies often require an area wide treatment to ensure that the solution to one street does not shift the problem to an adjacent street or neighborhood. Also, proper initial street design can minimize the need for future traffic calming. Narrower roadways can also help to reduce neighborhood traffic speeds, and the combination of reduced road width and smaller corner curb return radii can improve crossing conditions for pedestrians. The street standards of the Ordinance will be modified to account for this design philosophy and to better balance pedestrian needs with the needs of automobiles.

6.5.2.6 Truck Routes

Truck traffic in the urban area is largely confined to roadways adjacent to industrial, commercial and surface mining zoned properties. Most of this traffic uses the nearest

adjoining arterial street for access to and from its destinations. The Bend urban area also experiences a large volume of through trucks on the state highway system.

The state highway system serves the major flow of truck traffic in the Bend urban area. These facilities should continue to be designated as the desired through truck routes in the community (i.e., Highways 97 and 20, Century Drive and the Parkway). No other designated truck routes are delineated on the Bend urban area plan.

Citizens have voiced issues about rock and cement trucks that travel the Newport Avenue corridor. This truck traffic is more local in nature and addressing this situation is difficult, due to the lack of alternative routes. Also citizens have expressed concern of the potential for the Empire Avenue/East 27th Street and Knott Road/27th Street corridors becoming Highway 20 truck bypass routes after the completion of those roadway connections and/or improvements. **These facilities** will be designed as local arterials, and as such, **they are** not intended to carry *through* truck traffic. The need to place truck restrictions on arterial streets and to establish other designated routes in the urban area will be monitored as truck volume or noise issues change.

6.5.2.7 Eastside Bypass

The discussion regarding the need for an "eastside bypass" can be traced as far back as the 1950s. This idea was also incorporated into the first draft of the General Plan in the mid 1970s. In that early draft of the Plan, an expressway facility was described that would skirt the southern and eastern edge of the urban area as a possibility for meeting the future transportation needs of the community. While the document acknowledged that the need for the facility might not be achieved within the time frame of the plan, it did urge that the corridor be preserved for some type of future facility. In subsequent drafts of the General Plan, and in the adopted Plan approved by the state, the eastside bypass was eliminated from the circulation element of the plan and hence no right-of-way was preserved for this expressway.

In the study of the Bend Parkway, one of several alternatives considered was another version of the eastside bypass. This one deviated from the original plan by connecting to Highway 97 on the north, near Cooley Road. One key issue that led to the rejection of the Eastside Bypass alternative was the traffic data forecasts. The bypass was projected to pull away only 10,200 of the 75,000+ vehicles expected to travel Bend's central corridor by the year 2015. In addition, other traffic impact and land use issues were related to a bypass. Many of the landowners on the eastern side objected to the intrusion of a major roadway into a rural area. This applied not only to the bypass itself, but also to the east-west arterials that would have to be upgraded to connect to the bypass. Another concern was the potential of the bypass to foster development pressures outside of the Urban Growth Boundary. This would have been inconsistent with the road planning requirements recently defined by the State Transportation Planning Rule.

Some public sentiment for the idea of an east-side bypass has remained even though the decision was made to build the Parkway. In light of this interest, the City has pledged to continue to evaluate the need for the bypass as the community grows. In recent transportation modeling, conducted as a part of the latest General Plan update, the north-south travel needs of the community remain satisfied by the present proposed system of arterials and collectors. Therefore, the need for a new major transportation facility, such as an expressway or bypass, has yet to be demonstrated within the Bend urban area.

In 2000, the citizens' advisory committee (BTAC) was approached by citizens of the 27th Street corridor with the suggestion of connecting Deschutes Market Road to Powell Butte Highway – as a proposal to alleviate Highway 20 through trip traffic (Salem to points east of Bend). However, the suggested new street connection falls outside of the jurisdiction of the city of Bend and examination and implementation of this new roadway alternative would require the support of, and action by Deschutes County.

6.5.2.8 Safety

One goal of the Plan is to enhance travel safety for all modes on the transportation system. To meet this goal, there are a variety of strategies that include focusing on travel behavior and improving transportation system design. Educating the traveling public regarding potential travel hazards and reinforcing the need to travel cautiously is one valuable accident countermeasure. Another technique involves evaluating transportation system deficiencies and implementing corrective measures to reduce travel hazards. Constructing new transportation facilities with sound design principles will also help to maximize travel safety.

It is important that public agencies monitor the transportation system as it relates to travel safety. One important step is the periodic review of crash locations and the development of projects to correct these problems. These projects need to be further prioritized to ensure that resources can be directed to problem locations in a timely fashion.

6.5.2.9 Railroad Grade Crossings

Historically, train delays at road/railroad crossings have not been a major traffic problem in Bend. However since the merger of the Burlington Northern and Santa Fe railroads, it is anticipated that train crossing caused traffic interruptions may increase over time. If this does materialize in the future, the city of Bend should contact the appropriate railroad authorities and discuss possible solutions. A first choice should be making possible changes in train schedules to limit crossings during peak driving periods. If train schedule changes prove impractical or impossible, then the City should evaluate other solutions including grade separation.

There are ten, existing at-grade road/railroad crossings in Bend. Major Collector crossings are located at China Hat, Country Club and Brosterhous roads, Scott/2nd Street and Wilson Avenue. Arterial street intersections with the railroad are located at Cooley, Butler Market and Reed Market roads, and Revere and Olney avenues. The at-grade crossing at Cooley Road will be eliminated when the grade-separated interchange is constructed at the intersection of Cooley Road and US Highway 97. One future crossing, proposed in the plan, is an eastward extension of Murphy Road (a collector) to 15th Street. This new road/railroad crossing should be grade separated. Another proposed railroad "under crossing" is shown on the Plan at Hawthorne Avenue. A detailed analysis (for the future need of the Hawthorne connection) should be evaluated when it is necessary to improve east-west capacity in the downtown to Third St. transportation corridors. The decision to construct this connection should be made as a part of a study of Franklin/RR/Parkway under crossing (widening) alternatives (see: section 6.5.1.4 text under "Franklin Boulevard").

If the Reed Market Road/railroad crossing is contemplated for grade separation, consideration should be given to improving the (direct) connection between 9th Street (to the north) and American Lane (to the south). This may include a system of frontage roads.

6.5.2.10 Freight System

US Highway 97 and US Highway 20 will continue to serve as the freight truck routes through Bend. Improvement access controls along Highway 20 and widening to five lanes along the parts of Highway 20 that have currently two or three lanes will improve both through and local truck movement on this route.

The completion of the City's arterial street system will improve the local movement of goods to retail firms in the City and provide an efficient system of roads to ship products from Bend. The completion of Empire Avenue and planned improvements to the Reed Market Road and Colorado/Arizona couplet will particularly benefit the major industrial areas in the City.

6.6 AIRPORT PLAN

6.6.1 Local Air Service: The Bend Municipal Airport is located approximately five miles northeast of the Bend urban area. The airport is owned and operated by the City of Bend and is located in an unincorporated portion of Deschutes County. Development of the Bend Airport dates back to 1942 when the land was deeded to the City in an effort to establish a municipally owned and operated landing strip in the Bend area. The airport is classified as a General Aviation/General Utility airport. There is no regular scheduled commercial passenger service at this airport. Due to the location of this airport outside of the UGB area of Bend, Deschutes County regulations and County TSP policy govern land use issues that are associated with the use and operation of this airport.

6.6.2 Regional Air Service: Daily air passenger service is provided to the Central Oregon area at the Redmond Municipal Airport, which is located approximately sixteen miles north of Bend. The Redmond airport is classified as a Primary Service/Transport Airport. It provides scheduled passenger service, and it accommodates larger and higher performance aircraft than the Bend facility. The Redmond airport is currently occupied by two commercial carriers, Horizon Air and United Express. This airport is outside the jurisdiction of Bend.

6.7 RAIL PLAN

6.7.1 Freight Rail Service: There is no planned change to the existing pattern of short spur rail lines that serve local rail users. Changes required as part of the Parkway construction have been completed.

The main purpose of the Burlington Northern Santa Fe Railroad line in town will continue to be to haul freight through the area. The existing railroad switching yard, depot, weigh station and sidings are expected to remain unchanged during the 20-year planning period.

6.7.2 Passenger Rail Service: There is currently no passenger rail service in Bend. The feasibility of extending AMTRAK service to the Bend area was analyzed during the development of the 1992 Oregon Rail Passenger Policy Plan. The study concluded it would be impractical to provide passenger service to Bend. As an alternative to extending AMTRAK service, ODOT in 2000, funded two "throughway" bus connections with AMTRAK that will pass through Bend. One will travel from Portland to Boise, Idaho, and the other will connect the Chemult rail station with the Bend area.

6.8 TRANSMISSION PIPELINE PLAN

Two major natural gas transmission lines, operated by PG&E Gas Transmission-Northwest, serve Bend. These transmission pipelines extend north-south through the state and are located approximately 1 to 2 miles east of the Bend urban area. Cascade Natural Gas provides the natural gas service to the city of Bend. No other major utility pipelines serve, pass or are currently planned through the Bend urban area.

6.9 TRANSPORTATION SYSTEM PLAN OBJECTIVES, POLICIES, BENCHMARKS AND IMPLEMENTATION

6.9.1 TRANSPORTATION AND LAND USE

Objectives:

- To promote land use patterns that support fewer vehicle trips and shorter trip lengths
- To ensure that future development, including re-development will not interfere with the completion of Bend's transportation system

Policies:

1. Medium and high-density residential development shall be located where they have good access to arterial streets and be near commercial services, employment and public open space to provide the maximum convenience to high concentrations of population.

2. The City shall continue to use and develop performance standards and guidelines that can reduce vehicle trip lengths and/or promote non-vehicle transportation modes.

3. The City shall consider potential land needs for long-range transportation system corridor improvements and related facilities including transit during the review of subdivisions, partitions, and individual site applications.

4. Developments at the edge of the urban area shall be designed to provide connectivity to existing and future development adjacent to the urban area.

5. The Zoning Ordinance shall be revised so that building design, building orientation and site plans for commercial and public facilities promote pedestrian and bicycle access to and from nearby neighborhoods.

6. The City shall continue to explore mixed use zoning as one of the land use patterns that will promote fewer vehicle trips and shorter trip lengths.

7. The City should be receptive to innovative development proposals, including zone changes, plan amendments, and text changes that promote alternatives to vehicular traffic thus reducing vehicle trips and reduced trip lengths.

8. The City shall explore incentives for re-development of existing commercial strips in order to help reduce the need to expand the Urban Growth Boundary.

Implementation:

1. In general, implementation of these objectives and policies will occur during the review and processing of individual land use applications.

2. Policies 1, 3, 4, and 5 will be implemented by reviewing and updating the standards in the General Plan, subdivision code and zoning code.

3. City staff shall review and update the General Plan amendment criteria and zone change criteria to encourage innovative developments that reduce motor vehicle trips or trip lengths and to encourage mixed-use development.

4. City staff will study the impact of new mixed-use developments in Oregon on reducing motor vehicle trip numbers and length of trips.

5. City staff will review development codes from other cities for examples of performance standards that continue to improve the transportation system.

Benchmarks:
1. Separate from the current zoning ordinance update process, complete a draft proposal modifying the plan amendment and zone change criteria as soon as possible after TSP adoption. After the required public involvement and planning commission process it is anticipated that the recommended modifications be considered for Council action no later than the close of FY 01/02.

2. Concurrent with the current zoning ordinance update process, develop proposals, code changes or other measures that implement the TSP land use policies described above, no later than the close of FY 02/03.

3. Review and report to the Planning Commission on the effectiveness of new mixed-use centers in reducing motor vehicle trips/trip lengths. This task is required as part of the DLCD prescribed periodic review process.

Funding:
Evaluate the cost to meet the above benchmarks and add resources to the Development Services budget to address the needs. The first year cost (FY 00/01) is estimated to be $75,000 to $100,000 for developing ordinance changes and the new regulations necessary to facilitate the implementation of the land use policies described above.

6.9.2 TRANSPORTATION SYSTEM MANAGEMENT

Objective:
- Provide cost effective transportation improvements and implement strategies that will improve the efficiency and function of existing roadways

Policies:
1. The City shall adopt land use regulations to limit the location and number of driveways and access points, and other access management strategies on all major collector and arterial streets.

2. The City shall ensure that land use actions support the access management policies of the Oregon Department of Transportation along the state highways located in the urban area.

3. The City and State shall implement transportation system management measures to increase safety, reduce traffic congestion to improve the function of arterial and collector streets, and protect the function of all travel modes.

***Implementation*:**
The City shall develop access management standards for all arterials and collector streets. Access Standards developed for principal arterials and expressways shall consider ODOT access management policies along state highways.

***Benchmarks*:**
Develop or revise and implement access management standards and regulations within six months of adoption of the Bend TSP by the City Council.

***Funding*:**
The City shall allocate or budget sufficient staff resources, within the next budget year (2000-2001), to develop City ordinances and/or standards that will establish and implement TSM supportive land use regulations.

6.9.3 TRANSPORTATION DEMAND MANAGEMENT

Objectives:

- To reduce peak hour traffic loading on the roadway system
- To reduce single occupant vehicle travel
- Implementation of a TDM Plan (Central Oregon Commute Options Program) for the city of Bend

***Policies*:**
1. The City shall develop and implement a transportation demand management plan for its employees. This plan should be designed to serve as a model for the community.

2. The City shall work with businesses, especially those with more than 25 employees, to develop and implement a transportation demand management plan. These plans shall be designed to reduce peak hour traffic volumes by establishing trip reduction targets over five years.

3. The City and County shall work with business groups, schools, the Park District and other governmental agencies to develop and implement transportation demand management programs.

4. The City shall manage and regulate parking by:

a) Establishing programs to lower parking demand in commercial and business districts citywide by providing preferential parking for carpoolers, encouraging mass transit use, encouraging shuttle systems from external parking lots, and maintaining an adequate supply of strategically placed bike parking facilities.
b) Requiring business groups and employers to develop parking management strategies that support reduced roadway system demand during the peak motor vehicle travel times.

5. The City, County and State shall participate in the Central Oregon Commute Options Program by assisting in:
a) Development of park and ride facilities; and
b) Establishment of educational programs particularly those that will inform the public regarding the full costs of single occupant vehicle travel.

6. The City shall develop and utilize teleworking strategies as part of their business plan that will facilitate the movement of information and data rather than people.

7. The City shall implement the measures outlined in the Central Oregon Commute Options Program and adopt ordinances as appropriate.

Implementation:

Transportation demand management is aimed at altering driver behavior and more efficient use of the entire transportation system. This could be accomplished either by using alternative modes of transportation or lowering the demand during peak travel times. An important aspect of altering driver behavior is education. Several governmental and private jurisdictions cooperatively formulated ***the Central Oregon Commute Options Program***. This program is a comprehensive plan to reduce traffic congestion and enhance the transportation choices in the city of Bend. The goals include:

- Less roadway congestion,
- Reduced pollution,
- More parking management strategies,
- Less money needed for development, maintenance and construction of roads and parking,
- Higher quality of life,
- Safer and more efficient travel while providing transportation options for all citizens.

Broader mobility needs are also addressed through TDM measures. Much of the unmet mobility need in Bend comes from people who are currently not contributing to reduced road capacity. These are people who are "transportation disadvantaged". Many citizens of Bend are physically challenged, without a drivers' license, elderly, or too young to drive. The city of Bend would benefit from a balanced transportation system by getting

the transportation disadvantaged to and from work, conducting personal business around town or participating in community activities independently. The TDM measures discussed in this chapter are a good step in that direction. However, no amount of TDM measures will succeed unless other modes of transportation are developed to be as safe and practical as driving alone. The Central Oregon Commute Options Program is divided into three levels. These levels differ in the complexity and funding commitments.

Level A

The steps associated with Level "A" are considered to be of little cost and can be implemented quickly. Steps or projects to be taken include:

1. The City's Web site should include TDM information, a link to the Commute Options site and develop a more informational link to area TDM strategies (e.g., Dial-A-Ride, and park and ride lots).

2. Work with the Clean Air Committee to promote TDM including use of their newsletter.

3. Develop and implement a strategy for ensuring full compliance to bicycle ordinances and the Bicycle Parking guidelines.

4. Designate a TDM coordinator to work with Commute Options to encourage City employees to bicycle, walk, carpool or telework. This coordinator should establish a TDM program for City employees, which would serve as a model for the community. The City should:

- Lead by example, which in turn could free up available parking in the downtown district and assist in educating the general public
- Include Commute Options news in the City Newsletter
- Offer TDM incentives to employees
- Support flexible work schedules and teleworking
- Support and participate in Commute Options Week

5. Implement TDM measures before or in conjunction with street widening and construction projects. Develop measures to determine TDM impact and cost-benefit analysis and consider businesses and other trip generators that are specific to the proposed project.

6. Work with the Bicycle and Pedestrian Advisory Committee to identify intersections, roadways and other facilities that can be developed for improved bicycle and pedestrian uses on a yearly basis.

7. Review other communities' responses to the same problems that Bend faces and discuss options for Bend. Host a TDM presentation for City staff, council and public.

Level B

The second level of the program is Level "B". This level requires a medium to moderate financial commitment by the City. The steps in the level are as follows:

1. Hire a Transportation Demand Management Coordinator.

2. Continue all Level "A "efforts.

3. Print coupon books as business incentives or contribute to Commute Options for this purpose. Coupon book incentives for leaving the car at home would help accomplish the trip reduction goals.

4. Coordinate efforts and provide educational opportunities with the Bend-LaPine School District to reduce student and staff trips. This could be accomplished by:

- Providing trail access to schools and top-flight bicycle parking for students and staff
- Work with the schools on student parking management plan
- Work with administrators and students to develop incentives and disincentives
- Encourage that new schools are sited convenient for walking and bicycling within the neighborhood and that the schools contribute to land cost for locating adjacent paths
- Work with the school district and developers to identify school bus stops and reasonable amenities including, shelters or road enhancements to make the stops safer for children. (These stops designed as potential local transit bus stops.)

5. Work with developers to create more bicycle and pedestrian friendly developments by:

- Encouraging bicycle and pedestrian friendly developments (e.g. property tight sidewalks on both sides of neighborhood streets, narrow streets, grid system, trails and accessways).
- Providing standards for storefronts close to the sidewalk with easy pedestrian access.
- Providing standards for those developers who do develop these community friendly features (e.g. parking reductions).
- Encouraging urban mixed-use development).
- Redeveloping existing streets with a streetscape that is more attractive to pedestrians, transit and bicyclists (e.g., the redevelopment of Third Street).
- Separating sidewalks from roadways with appropriate landscaping.

6. Coordinate efforts with the Bend Downtowners to reduce employee trips and develop parking guidelines to promote TDM strategies.

7. Assist with development and promotion of area Park and Ride lots and encourage City and other employees to "park and ride" into downtown Bend.

8. Continue to partner with Commute Options.

9. Encourage removal of pedestrian barriers (e.g. cinder and snow removal from road shoulders and sidewalks, installation of handicapped ramps).

10. Work with the Parks and Recreation District to plan and implement a trail system.

11. Provide staff with TDM training.

Level C

Continue all efforts in Levels "A and B" and in addition the City shall:

1. Support and coordinate with shuttle services to and from Bend

2. Support and coordinate with shuttle systems within the City of Bend

3. The coordinator will support funding for sidewalks, bicycles, trails and transit by advocating for their inclusion in the Capital Improvement Program (CIP).

4. Ensure that the design of street intersections accommodates all travel modes

5. Develop a prioritized list of bicycle and pedestrian projects for the Capital Improvement Program:
   - Work with the Bicycle and Pedestrian Advisory Committee
   - Seek input from other groups
   - Allocate adequate funds to tackle several projects each year

6. Improve efficiency of Dial-A-Ride services. It is envisioned that with improved efficiency the Dial-A-Ride service would be expanded into an operating and functional public transit system.

Benchmarks:

- A measurable reduction in single occupant vehicle miles traveled. This is to be measured by the efforts of the TDM Coordinator each year.
- Develop a TDM plan for city of Bend employees, that shows a reduction in single occupant vehicle miles traveled by June of 2002.
- At least 10 businesses will develop TDM programs for their employees, which shows a reduction in single occupant vehicle miles traveled by June of 2003.
- All businesses with 100 or more employees will be given a TDM presentation by June of 2004.
- All business with 25–100 employees will be contacted by June of 2005.

- TDM Coordinator will make a yearly presentation to the City Council.

Funding:

Year 2001
- $55,000
  - $5,000 is the projected program cost to implement all of Level A by June 2001.
  - $50,000 is the projected cost to hire a TDM coordinator by June 2001 and have the City to continue to implement Level A. This will also allow the City to get started on implementing Level B.

Year 2002
- $75,000
  - $55,000 to maintain the program at level described above.
  - $20,000 is the projected program cost to implement all of Level B by June 2002.

Year 2003
- $100,000
  - $75,000 to maintain program at level described above.
  - $25,000 is the projected program cost to implement all of Level C by June 2003.

Year 2004-2020
- $100,000 per year to be increased as needed.
  - There needs to be a funding amount per year that will allow the City to efficiently maintain the efforts of this program.

6.9.4 PEDESTRIAN AND BICYCLE SYSTEMS

Objectives:
- To support and encourage increased levels of bicycling and walking as an alternative to the automobile
- To provide safe, accessible and convenient bicycling and walking facilities

Policies:

1. The City, County, State, Forest Service, Park District and public agencies shall work together to acquire, develop and maintain a series of trails along the Deschutes River, Tumalo Creek, and the canal system so that these features can be retained as a community asset. Connections between the Bend Urban Area Bicycle and Trails System should be made to the USFS trail system.

2. The City and Park District shall work together to acquire, develop and maintain the *primary* trails designated on the Bend Urban Area - Bicycle and Primary Trail System

Plan Map (Exhibit A). These trails, and future trail additions, shall support the need for non-motorized travel in the community.

3. The City and Park District shall adopt standards for trail system right-of-ways and trail improvement that are based on the type of planned trail use.

4. The City shall develop safe and convenient bicycle and pedestrian circulation to major activity centers, including the downtown, schools, shopping areas and parks. East-west access to the downtown area needs particular emphasis across major obstacles, such as 3rd Street, the Bend Parkway and the railroad.

5. The City shall facilitate easy and safe bicycle and pedestrian crossings of major collector and arterial streets. Intersections shall be designed to include pedestrian refuges or islands, curb extensions and other elements where needed for pedestrian safety. Also, bike lanes shall be extended to meet intersection crosswalks.

6. Bike lanes shall be included on all new and reconstructed arterials and major collectors, except where bikeways are authorized by the TSP. Bike lanes shall also be provided when practical on local streets within commercial and industrial areas. Bike lanes shall be added to existing arterial and major collector streets on a prioritized schedule. Specific effort shall be made to fill the gaps in the on-street bikeway system. An appropriate means of pedestrian and bicyclist signal actuation should be provided at all new or upgraded traffic signal installations.

7. Property-tight sidewalks shall be included on both sides of all new streets except where extreme slopes, severe topographical constraints, or special circumstances exist. Landscape strips shall separate curbs and sidewalks on new and reconstructed roads. Sidewalks shall be added to all existing arterial and collector streets to fill the gaps in the pedestrian system.

8. The City shall develop a program to ensure timely maintenance and repair of all sidewalks, including but not limited to assigning responsibility for maintenance and repair. The City shall also include removing sidewalk obstructions or barriers that might otherwise not comply with Americans with Disabilities Act (ADA).

9. The City's top priorities for pedestrian improvements are:
   a) Sidewalks and trail system in-fill and school walking routes,
   b) Retro fitting existing sidewalks along select collectors and arterials into property tight sidewalks and
   c) The construction of pedestrian-oriented improvements (other than regular sidewalks, e.g., curb extensions) and elimination of pedestrian barriers.

   These projects will be identified and prioritized in the CIP.

10. Bicycle and pedestrian facilities shall be designed and constructed to minimize conflicts between transportation modes.

11. Bicycle and pedestrian facilities shall be maintained in a manner that promotes use and safety. The City shall analyze the impacts of the use of cinders and consider alternatives to mitigate the impacts. Street repair and maintenance shall be performed in a manner that does not negatively impact bicycle and pedestrian facilities and their use.

12. The City shall repair and maintain, including but not limited to striping, snow plowing, sweeping, stenciling and signing, all bike lanes in a timely manner.

13. Bicycle parking facilities shall be provided at all new multifamily residential, commercial, industrial, recreational, and institutional facilities, major transit stops, all transit stations and park and ride lots. The City shall support a "Bikes on Transit" program and work to increase the number of bicyclists using transit when the transit system is established.

14. Establishing or maintaining accessways, paths, or trails must be considered prior to vacating any public easement or right-of-way.

15. The City, school and park districts shall work together to inventory, designate and protect access corridors and connector trails. City standards will be developed for such trail corridors.

16. The City shall develop local standards for the construction of bicycle and pedestrian facilities. The state of Oregon - Bicycle and Pedestrian Plan shall serve in the interim as a guide in development of these facilities and standards.

17. The City shall refer to the Park District, for its review and recommendation, all development proposals that include or are adjacent to existing or proposed parks or trails.

18. The City should support bicycle and pedestrian education and safety programs. The City shall establish and promote a comprehensive program for the reporting of and responding to bicycle and pedestrian hazards.

Implementation:

1. The City shall implement the TSP trail policies in cooperation with the Bend Metro Parks and Recreation District (BMPRD) as described in the joint agency intergovernmental agreement, dated October 1997, and subsequent amendments. The City and BMPRD shall meet to review the intergovernmental agreement and make appropriate amendments to allocate responsibility for trail construction and maintenance.

2. The Bend Urban Trails Plan, or subsequent updates, shall be implemented as a part of the Bend Urban Area TSP.

3. New trails shall be built generally following the priority of trails listed in the Bend Urban Trails Plan, or subsequent updates.

4. The City shall consider amendments to the appropriate ordinances in order to facilitate trail right-of-way acquisition and improvements, and trail connections in new development that contain a Primary Trail as shown on the Bend Urban Area Bicycle and Primary Trail System Plan Map.

5. The City shall identify funding options for right-of-way acquisition, design, construction and maintenance of priority trails (e.g., The Deschutes River and Larkspur trail systems).

6. New and existing trails shall be created and maintained following the design standards described in the Bend Urban Trails Plan, or subsequent updates.

7. The City shall meet with BMPRD and the school district to establish a process to inventory, designate and protect access corridors and connector trails which will create a network of trails for safe access to schools, parks and other activity centers.

8. The City shall update inventories of existing bike lanes and sidewalks, and identify gaps and missing system segments, and, in conjunction with the Deschutes County Pedestrian and Bicycle Advisory Committee, prioritize these for completion.

9. The City shall identify hazardous, potentially hazardous, and substandard bicycle and pedestrian facilities and intersections, and prioritize needed repairs and improvements, and implement repairs and improvements in order of priority.

10. The City shall establish a timely and regular maintenance and repair program for all bicycle and pedestrian facilities, which may include enforcement of the responsibility for sidewalk maintenance by adjacent property owners and/or the City assuming the responsibility for sidewalk maintenance.

11. The City shall educate builders, architects and developers concerning city design regulations for bicycle and pedestrian facilities (including bicycle-parking facilities). The City shall require a specific inspection of bicycle and pedestrian facilities (i.e., bicycle racks) as a part of the commercial building construction inspection process.

12. The City shall adopt a methodology for prioritizing new bicycle and pedestrian facilities for construction, and build new bicycle and pedestrian facilities according to the priority plan. This shall include the provision of bike parking facilities at public transportation facilities or other activity centers as described in Policy 6.9.4 (13).

13. The City shall construct, stripe and stencil bike lanes as a part of street overlays and widening, and simultaneously adjust all catch basin grates to grade that are located within bike lanes.

Benchmarks:

1. Develop a plan, in coordination with BMPRD, to identify funding for and implementation of Primary Trail system projects within six months after adoption of the TSP by the Bend City Council.

2. Update sidewalk, trail and bike lane systems inventories and identify gaps and missing system segments and prioritize these for completion, within six months after adoption of the TSP by the Bend City Council.

3. Remediate the needs of prioritized bicycle and pedestrian facilities as follows:
   a) Hazards – immediately
   b) Potential hazards – as soon as practicable
   c) Substandard conditions – at the rate of 20 percent per year for the next five years

4. Add four miles of in-fill sidewalks per year.

5. Add designated bike lanes to roads with substandard shoulders at the rate of 20 percent per year for the next five years.

6. Public right-of-ways or easements for trails shall be secured and trails constructed at a rate of at least 2 miles each year (on average), starting with the trail priority list depicted in the Bend Urban Trails Plan, or subsequent updates.

7. Incorporate the specific inspection of bicycle and pedestrian facilities (including bicycle-parking facilities) as a part of the commercial building construction inspection process within six months after adoption of the TSP by the Bend City Council.

8. Develop a detailed bicycle and pedestrian facility maintenance program within twelve months after adoption of the TSP by the Bend City Council.

9. Update the City bicycle and pedestrian facility hazard reporting and responding system within twelve months after adoption of the TSP by the Bend City Council.

10. Fund a coordinator to implement the City's bicycle and pedestrian programs within six months after adoption of the TSP by the Bend City Council.

6.9.5 PUBLIC TRANSPORTATION SYSTEM

Objectives:

- Continue to develop public transportation services for the transportation disadvantaged
- Reduce reliance on automobiles and develop public transportation facilities
- Increase mobility and accessibility throughout the urban area
- Continue to provide infrastructure and land use planning to support transit

Policies:

1. The City shall preserve and improve the existing Dial-A-Ride service (efficiency, expanded ridership and routes, zone destination) and develop a strategic plan for its future expansion that results in the initiation of a citywide public transportation system.

2. The City shall develop a public transportation system that accommodates the needs of Bend residents and visitors in order to reduce reliance on the automobile.

3. The City shall coordinate with the State and other jurisdictions to evaluate funding alternatives and seek appropriate resources to support a public transportation system. Effort should be made to evaluate creative funding techniques that may include the combination of public and private transportation resources in coordination with other agencies and transportation providers.

4. The City shall work together with Central Oregon communities and the State to develop inter-urban public transportation services. Priority shall be given to high load ridership corridors.

5. To accommodate a fixed-route transit system, land use ordinances and other regulations shall be implemented that establish pedestrian and transit-friendly design along potential or existing transit routes.

6. The City shall work with other governmental agencies to develop a 20-year transit master plan. The plan shall include but is not limited to routing maps, the type and location of required infrastructure, marketing/public education plan, development/ redevelopment requirements for transit, and funding mechanisms. Ordinances shall be adopted that implement the Master Plan.

Implementation:

1. Develop a strategic plan for public transportation that results in the initiation of a citywide public transportation system.

2. Develop an improved public transportation system for the urban area by:
   a) Forming a Transit Advisory Group
   b) Expanding the existing Dial-A-Ride system for the general public using existing funding resources,

c) Expanding the existing Dial-A-Ride system and implementing a fixed-route bus system* for the general public using additional funding resources. (*To be developed as ridership increases along corridors; a fixed-route service would provide a more efficient transit rider service).

3. The City shall actively participate in and support regional discussions and efforts to develop and improve countywide public transportation services (e.g., City participation in Central Oregon Area Commission on Transportation – COACT and Central Oregon Intergovernmental Council – COIC, discussions on public transportation). Discussion to include the development of a countywide transit district and evaluation and implementation of creative public/private sector funding techniques to accomplish this task.

4. Work with other Central Oregon communities to improve inter-urban transportation services.

a) Priority shall be given to high load ridership corridors within the Deschutes County area (i.e., Bend to Redmond, Bend to LaPine, etc.).
b) Development of other inter-city services outside of the Deschutes County area (i.e., Bend connections to the Willamette Valley, other destinations outside of Deschutes County).

5. The City shall establish land use ordinances and other regulations that support the development of pedestrian and transit-friendly design along all arterial and collector roadways.

6. Develop a 20-year transit master plan and implement a phased fixed-route transit system serving the Bend urban area:

a) Develop a fixed-route master plan to include a basic transit system and incremental improvements to the system, such as:
   i) The 5-bus (6-route) transit system, illustrated on Figure 13, shall serve as an example of a basic start-up transit network.
   ii) The 9-bus (7-route) transit system, illustrated on Figure 14, shall serve as an example of a more comprehensive transit network.
b) Acquire properties (or secure joint use agreements) for Park-n-Ride lots at strategically located sites (see also item "d.") throughout the urban area.
c) Plan, acquire and develop a site in the downtown area for a transit center.
d) Plan, acquire and develop at least four major transit stops including the Central Oregon Community College, the St. Charles Medical Center, and sites on the north and south reaches of Bend.
e) Implement a phased, fixed-route transit system, focusing initially on high transit ridership corridors.

7. To supplement City funds, seek additional public transportation funding resources for Bend urban area that will support a public transportation system by seeking:

a) State and federal grants that support expanding public transportation for general public services
b) Voter approval of a funding measure to expand Dial-A-Ride system to support general public services
c) Voter approval of a funding measure to develop a fixed-route system to support general public services

Benchmarks:

1. Obtain funding for Dial-A-Ride expansion, and begin operation of this improved system by July 2001.

2. Meet 100% of the work and medical trip demands of the general public, and 70% of shopping trip demand by July 2002.

3. Determine candidate fixed-route transit corridors and implement, as appropriate, by July 2003

4. Provide 175,000 transit rides per year by July 2003.

5. Develop a "countywide" transit master plan in coordination with other public agencies and private transit providers by July 2003.

Funding:

1. Explore the use of System Development Charges (SDCs) for a portion of local share of transit system capital improvements.

2. Seek other stable local funding opportunities for public transportation to support operating needs on a long-term basis that may include levies, special districts and other funding strategies.

3. Lobby the state of Oregon Legislature to consider bills that could result in increased public transportation funding.

4 Pursue multi-year funding with major employers and/or other public/private organizations (e.g. transit service contracts).

5. Seek voter approval of a transit funding measure to operate and support an expansion of local Dial-A-Ride service, to include the general public, and establish scheduled, fixed routes open to the general public as demand dictates and funding permits.

6. Seek additional funding to establish a countywide transit district and improve other inter-city transportation services.

7. Seek state and federal grants to support:
   a) Urban area transit planning;
   b) Dial-A-Ride expansion;
   c) Acquisition of buses for a fixed-route transit system; and
   d) Development of a downtown transit center, park and ride lots and other transit use amenities.

6.9.6 STREET SYSTEM

Objectives:

- To provide a practical and convenient means of moving people and goods within the urban area that accommodates various transportation modes
- To provide a safe and efficient means to access all parts of the community
- To provide an attractive, tree-lined, pedestrian friendly streetscape sensitive to protecting the livability of the community

Policies:

General:

1. Streets shall be located, designed and constructed to meet their planned function and provide space for adequate planting strips, sidewalks, motor vehicle travel and bike lanes (where appropriate). Specific effort should be made to improve and enhance east-west circulation patterns for all modes of travel throughout the community.

2. Where a subdivision or partition is adjacent to land likely to be divided in the future, streets, bicycle paths, and accessways shall continue through to the boundary line of the subdivision or partition in order to achieve connectivity within the grid system.

3. Streets shall be classified and generally located according to the Bend Urban Area - Roadway System Plan (Map Exhibit B), the Street Functional Classification (Table 12), and the Street Grid System (Figure 29). Street right-of-ways and improvements standards shall be developed to meet the needs of the Transportation Plan and Functional Classification System.

4. In order to reduce vehicle speed, avoid construction of excessive pavement, and create livable neighborhoods, the City shall adopt standards that allow for narrower streets and lane standards, on-street parking, and other pedestrian friendly design elements.

5. The City shall manage the development process to obtain adequate street right-of-way and improvements commensurate with the level and impact of development. New development shall be supported by traffic impact analysis(es) to assess these impacts and to help determine transportation system needs.

6. Access control shall be part of the design standards for major collectors, arterials, principal arterials and expressways to ensure that adequate public safety and future

traffic carrying capacity are maintained while at the same time preserving appropriate access to existing development and providing for appropriate access for future development. The city of Bend *Arterial Access Policy* (Street Policy No. 2) and the *Access Management Policy* (Street Policy No. 4) shall be reviewed and revised, and new street policies shall be adopted if necessary, to:

a) Conform street designations and other terminology to that which is used in this TSP;
b) Adopt written policies and procedures for access control on new and reconstructed major collectors, minor arterials and major arterials;
c) Provide that raised medians that eliminate left turn movements to existing streets or improved properties will only be installed after notice to affected property owners and an opportunity to be heard;
d) Require that in the case of new access control measures that will restrict existing turn movements into or out of existing homes, businesses or streets, the least restrictive measure (such as shared driveways, elimination of curb-cuts or "no left turn" signs) that is effective to achieve the purposes of the policy will be evaluated prior to installation of raised medians;
e) Require that the cost of installation and maintenance of raised medians, and in particular those with landscaping, be evaluated and alternatives be considered before raised medians are approved or required;
f) Replace any mandatory requirements for raised medians on streets other than new principal arterials and expressways with an analysis of the factors set forth above, and any other factors that are identified in the policy;
g) Provide that where commercial or industrial land uses abut residential areas, access shall not be directed to local residential streets.

7. City and state transportation system improvements shall comply with the Americans with Disabilities Act requirements.

8. Traffic signals or roundabouts shall be constructed in accordance with the design, spacing and standards adopted by the City and State.

9. The City Council shall involve the public, where appropriate, in the development and redevelopment of street designs prior to their construction.

10. The City shall consider the impact of improvements to or completion of existing facilities when considering the need for constructing new facilities.

11. The City shall place a high priority on providing adequate funding for street maintenance.

12. Traffic calming devices may be considered anywhere traffic impacts are adverse to residential livability.

Residential Streets:

13. Residential block lengths shall not exceed 600 feet without a connecting cross street. When existing conditions or topography prevent a cross street, a pedestrian accessway to connect the streets shall be required.

14. A grid-like pattern of residential local streets shall be developed whenever practical in order to increase street connectivity within a neighborhood.

15. The City may require adjustment to the street pattern or installation of traffic calming devices in order to discourage high speed and volume vehicular traffic on local residential streets.

16. Street widths on public residential local streets may vary depending on topography, anticipated traffic volume, natural features that warrant protection, and existing street patterns in the neighborhood. Right of way shall be a minimum of sixty (60) feet except in special circumstances. Narrower streets may have limited on-street parking to ensure emergency vehicle access.

17. New alleys should be developed to City standards and shall be maintained by the property owners.

18. Cul-de-sac or "hammer-head" residential streets may be allowed only where existing development, steep slopes, open space, or natural features prevent through street connections, or when the objectives of connectivity are met within the neighborhood.

Arterial Streets:

19. Due to the sensitive nature of the Deschutes River corridor, the extension of Reed Market Road, between Blakely Road and Century Drive, shall be limited to a two-travel lane roadway.

20. Appropriate facilities for bike, pedestrian and transit use shall be included in any road-widening project.

21. The City shall evaluate the effect of transportation demand management (TDM) and transportation system management (TSM) measures that would successfully eliminate or delay the need for minor arterial street widening beyond the existing travel lanes within the twenty-year design life of a proposed roadway project. Transportation system computer modeling is one acceptable evaluation method that can be used to assist in the assessment of forecast travel demand and the associated vehicle travel lane needs.

TDM/TSM measures *as an alternative* to roadway widening: The TDM and TSM measures incorporated into this analysis, as an alternative to roadway widening, shall be capable of funding and fulfillment within a reasonable time period such that the subject arterial level-of-service shall not diminish below an acceptable adopted City standard.

TDM/TSM measures *AND* roadway widening: If the implementation of TDM and TSM measures from the previous analysis are determined to be insufficient in meeting the transportation system needs along the subject roadway corridor, the City shall undertake an evaluation of the consequences that additional roadway widening may have on adjoining neighborhoods as well as the benefits gained by additional street construction.

This evaluation shall include an assessment of the design features and construction options for the road widening project. The design analysis of roadway widening shall consider the impacts on all modes of travel, adjacent affected travel corridors and the impact on properties immediately adjacent to the contemplated road widening. The most effective and appropriate TDM and TSM measures recommended by the evaluation, as selected by the City Council, be implemented either in conjunction with, or before, the road widening project. The City Council after providing notice and opportunity to be heard at a public hearing shall decide whether to authorize the street widening based upon this policy and the evaluation report. Written notice shall be provided to property owners within 250 feet of the proposed widening and to affected neighborhood associations. In addition, notice of the hearing shall be posted in conspicuous locations along the proposed widening and published at least ten days prior to the hearing.

The City Council shall receive this evaluation report that makes the aforementioned analysis of TDM and TSM measures, and the evaluation of roadway widening design options, prior to considering authorization of proceeding with the road widening project.

Minor arterial street corridors shall be designated by City Council as falling into one of three classifications:
a. "Not authorized for lane expansion". These minor arterial corridors are described in the TSP, in Section 6.5.1.4 requiring a TSP amendment before being categorized as "b" or "c" as described below.

b. "Possible lane expansion". These minor arterial corridors are listed in the City's annual Capital Improvement Plan as corridors where additional travel lanes may be necessary within the 20-year planning period. Street corridors in this category may not be programmed for lane expansion in the CIP without City Council authorization.

c. "Probable lane expansion". These minor arterial corridors are listed in the City's annual Capital Improvement Plan as corridors where additional travel lanes are probably going to be necessary within the 20-year planning horizon. Street corridors in this category may not be programmed for lane expansion in the CIP without City Council authorization.

Intersection widening and improvements, that are necessary for vehicle turning lanes or pedestrian safety, are exempt from this policy.

Notwithstanding a street's categorization as "possible lane expansion" or "probable lane expansion", the City Council must comply with paragraphs 3 and 4 of Transportation System Plan Arterial Street Policy 21 prior to authorizing a road widening project.

22. The City shall involve the public, the Park District and other governmental agencies in developing a roadway design for the southern river crossing that complements the natural features of the river area.

23. The City and State shall develop and implement a plan to improve the appearance, safety and function of East 3rd Street, portions of Highway 20 and old Highway 97 when the Parkway is completed.

24. The City shall work with the State to line the entrance to the city of Bend along Highways 97, Highway 20, Century Drive and the Parkway, with large stature trees.

25. Landscaped medians should be included on all arterial streets, except where right-of-way acquisition is not possible, that incorporate left-turn refuge lanes at controlled intervals to improve community appearance, maintain system mobility and to reduce the adverse affects of wide street widths to all types of travel (Figure 28). On streets with multiple vehicle lanes and wide curb radii, pedestrian refuge islands shall be constructed to minimize street crossing distances.

26. Frontage roads shall be provided parallel to arterial streets, as illustrated on the Bend Urban Area Roadway System Plan Map, or as determined necessary by the City or State, to maintain an acceptable level of safety and carrying capacity on the arterial street system.

27. The state highway system (i.e., Highways 97 and 20, Century Drive and the Parkway) shall be designated as the through truck route system. Trucks shall be permitted on the City and County arterial street system for local trip activity, unless otherwise restricted.

28. The city of Bend shall work with ODOT to prepare an Interchange Area Management Plan (IAMP) prior to construction of a grade-separated interchange at the intersection of Cooley Road and US Highway 97.

29. When a final land use or limited land use decision determines that a right-turn lane will improve, maintain or prevent further degradation of an applicable performance standard for the intersection of an arterial with another arterial of the intersection of an arterial with an expressway, the right-turn lane shall be considered allowed by the TSP at the appropriate location, provided that if the need for the right-turn lane is caused by a specific application, the applicant shall be responsible for full payment of the costs associated with construction of the right-turn lane.

Parkway:

30. The Bend Parkway will be planned, constructed, and managed to limit direct access to the facility to meet the objectives of the Access Oregon Highway (AOH) system, to protect the integrity of the route's through capacity, and to promote public safety.

31. To maintain the viability of the existing East 3rd Street and downtown business districts, the Bend Parkway will provide convenient access to these areas in so far as this does not compromise the function of the Parkway.

32. The Bend Parkway shall, to the greatest extent possible, include landscaping, medians, separated sidewalks, and bike lanes.

Safety:

33. The City and State shall improve transportation safety for all modes through approved design practice, sound engineering principles and regulation of vehicle speeds.

34. The City shall explore with the State and implement appropriate "Intelligent Transportation System Devices".

35. The City shall take measures to ensure that traffic speeds are appropriately designated throughout the City.

36. As a part of the development process, right-of-way shall be acquired as necessary for the correction of street intersections, excessively sharp curves, or as otherwise necessary to improve the safety of a road alignment.

37. The City and State shall support efforts to educate the public regarding travel on the transportation system.

38. The City and State shall monitor transportation crash and safety issue locations, and develop and implement corrective improvement projects.

Implementation:

1. Update, expand background justification, priorities, categories and weightings in the Transportation CIP, and monitor it on a regular basis.

2. Study alternatives to improve the street grid system and east/west street connectivity in order to address future transportation needs:

a) Evaluate the need for more through routes and grid connections in the northeast section of Bend in order to preserve capacity on the 27th Street corridor - this will require the City to coordinate street extensions with the County.
b) Study the completion of the Purcell corridor and determine placement in the CIP.
c) Study the American Lane/9th Street offset intersection reconstruction.

d) Study options for the future extension of Cooley Road in the northwest quadrant of the City.

e) Study the Blakely/Brookswood connection and determine the priority in light of the Southern Bridge Crossing project.

f) Regarding the study of the Lava Road connection alternatives between Arizona and Industrial Way:

i) Before extending Lava Road between Industrial Way/Bond Street and the Colorado/Arizona couplet, the City shall conduct a study (which may be done in conjunction with a refinement plan), with public involvement from the affected neighborhood and other interested parties. This study shall include evaluating the adequacy of the street system to handle anticipated traffic loads, impacts on the affected neighborhood (located between downtown and the Old Mill District) and how those impacts could be mitigated.

ii) If the study shows that using the Lava Road extension will operate at a more acceptable level of service, minimize neighborhood cut-through traffic and that neighborhood access will be adequately accommodated, the City shall proceed with an amendment to the BUATSP (which may be done in conjunction with a refinement plan) followed by the completion of the roadway improvements and traffic mitigation measures. It is important that the study demonstrate that adverse traffic impacts on the neighborhood can be mitigated without unduly compromising the residents' ability to enter and leave the neighborhood. Consequently, the study shall include the following elements:

(1) A mitigation plan that combines traffic control and traffic calming measures that will minimize cut-through traffic through the adjacent neighborhoods while allowing neighborhood residents reasonable ingress and egress to streets adjoining the neighborhood;

(2) Analyzing the level of service at nearby intersections and making any changes that may be necessary to attain at least an acceptable level of service so long as those improvements can be accomplished within the existing pavement.

3. Install interim signals where warranted for traffic safety and enhancement of traffic flow. Complete a list of interim signalization projects and monitor on an annual basis.

4. Monitor completion of Bend Parkway impacts on local intersections and determine if additional improvements are needed.

5. Complete the current study to evaluate and produce appropriate roundabout construction and performance standards. Give special consideration to the needs of the disabled community.

6. Produce preliminary topographical and engineering alignments for future road extensions prior to acquiring right-of-way.

6.9.7 RAIL SYSTEM

Policy:

1. When railroad rights-of-way are considered for abandonment or vacation, the City, County and State shall seek the preservation of these corridors for other transportation services.

2. The City shall work with Burlington Northern Santa Fe Railway to develop and implement a plan for train scheduling to ensure that the current needs of the transportation system in the City are minimally affected.

Table 12
Street Functional Classification System
Typical Characteristics

Functional Classification	Projected Daily Traffic (Typical)	F.C. Spacing (Typical)	Trip Length (Typical)	Vehicle Lanes (Typical)	Bike Lanes	Sidewalks	Parking Permitted (Typical)
Arterial:							
Expressway	20,000 - 45,000+	5+ Miles	Over 5 miles	5	Yes	Yes Both sides	No
Principal Arterial	15,000 - 40,000	2+ Miles	Over 2 miles	5	Yes	Yes Both sides	No
Major Arterial	10,000 - 30,000	1-2 Miles	Over 1 mile	3-5	Yes	Yes Both sides	No
Minor Arterial	5,000 - 18,000	1/2-1 Miles	Over 1 mile	2-5	Yes	Yes Both sides	No*
Major Collector	1,500 - 9,000	1/2 Mile	Under 1 mile	2-3	Yes	Yes Both sides	No*
Industrial Streets	500 - 3,000	Not applicable	Varies	2	Not required	Yes Both sides	Yes
Local Street	< 1,500	300-600 feet	Under 1/2 mile	2	Not required	Yes Both sides	Yes
Frontage Road	Varies	Not applicable	Varies	2	Not required	Yes Both sides	Yes** if adequate width provided
Alley	< 400	Not applicable	Not applicable	1 1/2	Not applicable	Not applicable	Yes** if adequate width provided

* Parking permitted if approved by local jurisdiction

** Parking permitted adjacent to the facility but NOT obstructing the travelway

Figure 28
Arterial Streetscape
Typicals

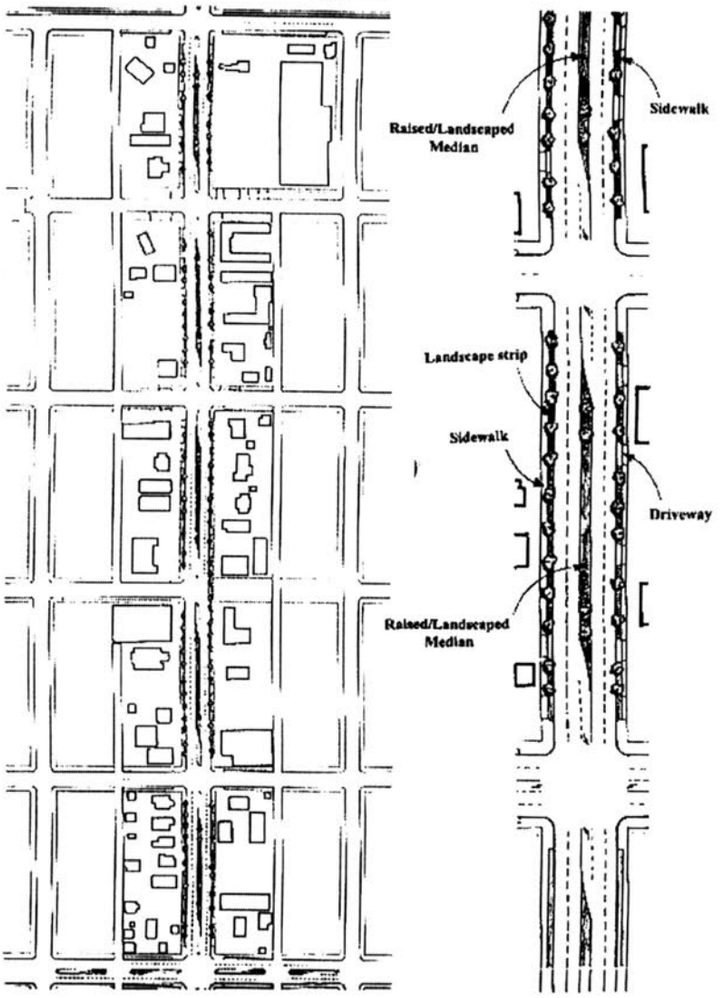
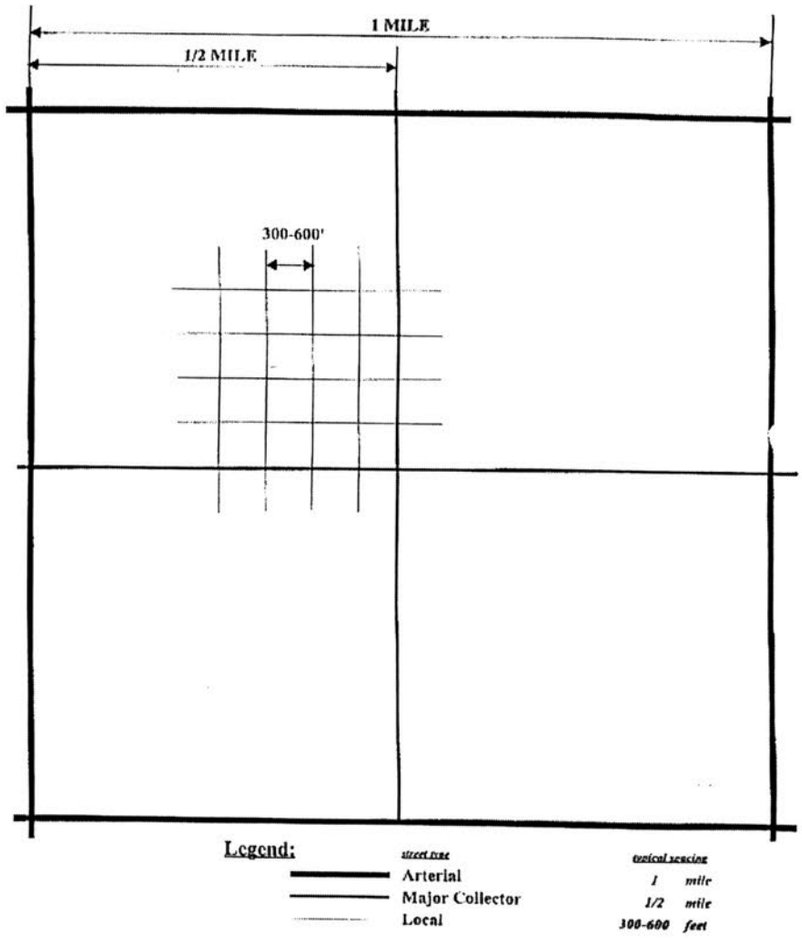


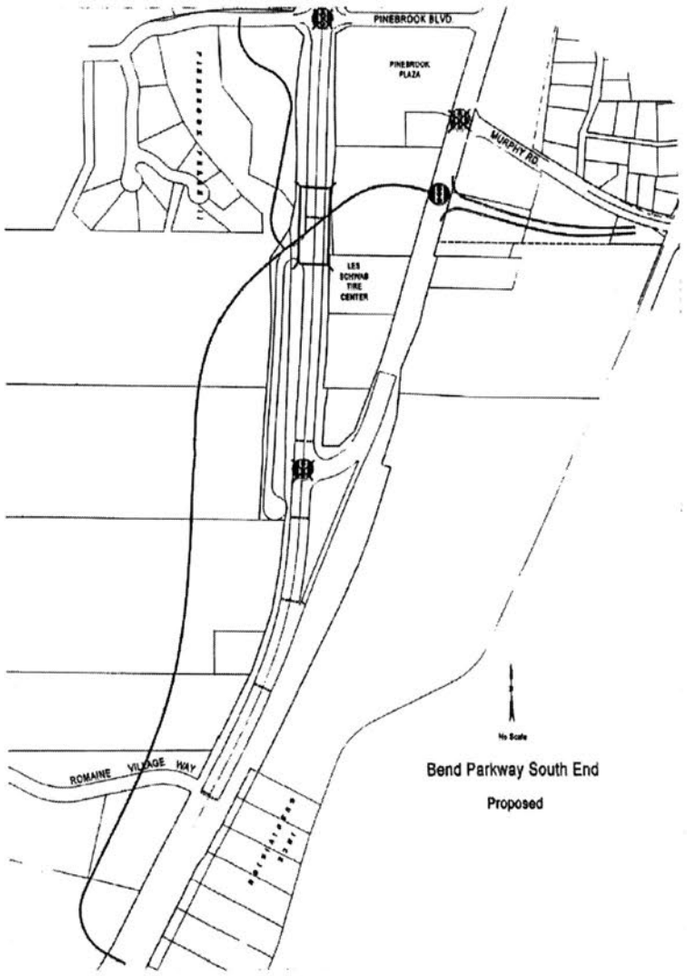
Figure 29
Street Grid System
Typical Street Spacing



Page 115: [1] Deleted David Knitowski 7/17/2006 5:00 PM

Figure 26

Bend Parkway - South End
Proposed Frontage Road System and Extension of Murphy Road


PINEBROOK BLVD.
PINEBROOK PLAZA
MURPHY RD.
LES SCHWAB TIRE CENTER
ROMAINE VILLAGE HWY
No Scale
Bend Parkway South End
Proposed

Page Break

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ORDINANCE NO. NS-2033

AN ORDINANCE ESTABLISHING CITY OWNED PUBLIC FACILITY CAMPUSES AS TOBACCO FREE

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. Bend Code Chapter 5 is amended by adding new sections 5.800 through 5.830 as follows:

5.800 Purpose.

5.800(1) The City of Bend recognizes the need for a well-defined and enforceable tobacco-free public campus ordinance. The purpose of this ordinance is to protect the public health, safety and welfare by prohibiting tobacco use on City owned campuses.

5.800(2) In 1993, the Environmental Protection Agency (EPA) classified environmental tobacco smoke as a Group A carcinogen, that is, a substance known to cause cancer in humans. The EPA recognizes no safe level of exposure for Group A carcinogens.

5.800(3) Smokeless tobacco, commonly referred to as 'spit' tobacco also poses a sanitation and health risk due to the tobacco product's mix with human saliva and the unsanitary habit of product disposal (in open containers or directly onto walking surfaces).

5.800(4) In light of these findings, all City of Bend campuses shall be tobacco-free.

Definitions.

5.805(1) City Campuses – Any City or BURA owned/leased facility where official business is conducted. This includes the interior and exterior of City/BURA buildings including but not limited to City Hall, Public Works/Police, Fire Departments, Municipal Airport, and Hawthorne Station site and as to the exterior of buildings from the edge of the building to the public sidewalk including parking lots. City Campuses do not include the public sidewalk within the public right of way.

5.805(2) Tobacco product – Any tobacco cigarette, cigar, pipe tobacco, smokeless tobacco, chewing tobacco, or any other form of tobacco which may be utilized for smoking, chewing, inhalation, or other means of ingestion.

Tobacco-use prohibited on City Campuses.

5.810 The City of Bend prohibits the use of tobacco products of any form throughout all City campuses.

5.810(1) "Tobacco Free Campus" signs will be posted at all City campus entrances.

5.810(2) Tobacco receptacles will be placed at the "Tobacco Free Campus" sign locations at entrances to City Campuses as a receptacle for tobacco products.

5.815 Removal from Premises.

Any City Police Officer, City Code Enforcement Officer, City Manager or his/her designated representative shall have the authority to request that City employees or members of the public discontinue use of tobacco products on City Campuses. Any person who fails to discontinue use of their tobacco products immediately upon request is required to immediately leave the City Campus. Any person who continues to use tobacco products on a City Campus after being requested to cease such use shall be in violation of Criminal Trespass in the Second Degree as provided by ORS 164.245.

5.820 Complaints.

The City Manager or his/her designee shall have the authority to investigate and any all complaints alleging violation of this Chapter or administrative rules adopted hereunder.

5.825 Severability.

If any provision of this ordinance, or its application to any person or circumstance is declared invalid or unenforceable, the remainder of the Ordinance and its application to other persons and circumstances, other than that which has been held invalid or unenforceable, shall not be affected, and the affected provision of the ordinance shall be severed.

Section 2. This ordinance shall be effective on March 1, 2007.

Read for the first time the 15th day of November, 2006.

Read for the second time the 6th day of December, 2006.

Placed upon its passage the 6th day of December, 2006.

YES: 7 NO: 0 ABSTAIN: 0

Authenticated by the Mayor the 6th day of December, 2006.

Bill Friedman, Mayor

Attest:

City Recorder Patricia Stell

ORDINANCE NO. NS-2034

AN ORDINANCE AMENDING THE BEND URBAN AREA ZONING MAP BY CHANGING THE ZONING DESIGNATION OF TWO PARCELS OF LAND TOATLING 5.89 ACRES SOUTH OF HARDY ROAD EAST OF O. B. RILEY ROAD FROM SR 2 ½, RESIDENTIAL SUBURBAN LOW DENSITY TO RS RESIDENTIAL URBAN STANDARD DENSITY.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Bend City Council has held a public hearing, considered the Hearings Officer's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Findings and Decision of the Hearings Officer dated November 6, 2006, file number PZ-06-412.

Section 2. The Bend Urban Area Zoning Map is hereby amended by changing the designation of the properties shown in "Exhibit A" and described in "Exhibit B" and "Exhibit C" from Residential Suburban Low Density (SR 2 ½) to Residential Urban Standard Density (RS).

Read for the first time the 15th day of November, 2006.

Read for the second time the 6th day of December, 2006.

Placed upon its passage the 6th day of December, 2006.

YES: 7 NO: 0

Authenticated by the Mayor the 6th day of December, 2006.

Bill Friedman, Mayor

ATTEST:

Patricia Stell, City of Bend Recorder

EXHIBIT A

EXHIBIT B

Legal Description:

Parcel 2 of PARTITION PLAT NO. 1995-9, located in the Southeast Quarter (SE ¼) of Section 17, Township 17 South, Range 12, East of the Willamette Meridian, Deschutes County, Oregon, and being a portion of Lot 18, GLEN VISTA, Deschutes County, Oregon.

EXHIBIT C

Legal Description:

THE NORTH 20 FEET OF TRACT 21, GLEN VISTA, DESCHUTES COUNTY, OREGON, EXCEPT THE EASTERLY 227.85 FEET AND THE EASTERLY 227.85 FEET OF TRACT 21, AND THE WESTERLY 150.0 FEET OF TRACT 20, GLEN VISTA, DESCHUTES COUNTY, OREGON.

WAIVER OF REMONSTRANCE TO
THE FORMATION OF A LOCAL IMPROVEMENT DISTRICT OR OTHER
SHARED FINANCING MECHANISM FOR IMPROVEMENT OF O. B. RILEY
ROAD TO CITY OF BEND COLLECTOR STANDARDS

STATE OF OREGON)
) ss File No. PZ 06-412
County of Deschutes)

WHEREAS, Donna M. Pearson, hereinafter Owner, seeks approval of a zone change in City of Bend land use file PZ 06-412 for the following described real property located within the Bend city limits, of Deschutes County, Oregon;

Parcel 2 of PARTITION PLAT NO. 1995-9, located in the Southeast Quarter (SE ¼) of Section 17, Township 17 South, Range 12, East of the Willamette Meridian, Deschutes County, Oregon, and being a portion of Lot 18, GLEN VISTA, Deschutes County, Oregon.

WHEREAS, the City of Bend, has conditioned approval of PZ 06-412 on the recording of Owner's Waiver of Remonstrance to the Formation of a Local Improvement District for the completion of said public improvements at some future date, as provided in the City of Bend land use decision dated November 6, 2006;

NOW THEREFORE,

1. Owner hereby waives its rights, as provided under Bend City Code, and ORS Sections 223.117, 223.118, 223.389 and ORS 223.391 to have its written or oral objection to a proposed local improvement counted for purposes of determining whether there are, by law, sufficient objections to force the relevant governing body to abandon the proposed improvement, including but not limited to the formation of a local improvement district. Owner, however, does not waive its right to submit written testimony or to appear before the Bend City Council at any public hearing to object or otherwise testify about the whether the assessment against the subject property represents that property's proportionate share of the improvement. Further, Owner does not waive the right to remonstrate against any LID or other financing mechanism that results in an assessment of more than $4,733 per residential lot. This waiver will not be effective unless the resolution, ordinance or other instrument creating the LID limits the final LID assessment to a maximum of $4,733 per residential lot.

2. It is the intent of Owner that this Waiver of Remonstrance shall be a condition and covenant that shall run with the land and be binding upon the real property described herein above and shall be binding upon Owner's heirs, executors, assigns and successors.

IN WITNESS WHEREOF, this document is executed this _____ of _____, 2006.

Donna M. Pearson

_____

STATE OF OREGON)
) ss
County of Deschutes:)

I certify that I know or have satisfactory evidence that Donna M. Pearson is the person who appeared before me, and said person acknowledged that she signed this instrument and acknowledged it to be his free and voluntary act for the uses and purposes mentioned in this instrument.

DATED this _____ day of _____, 2006

_____
Notary Public for Oregon
My commission expires: _____

ACCEPTANCE BY CITY OF BEND

Accepted:_____
Harold A. Anderson, City Manager

STATE OF OREGON)
) ss
County of Deschutes)

This instrument was acknowledged before me on _____
by _____.

_____
Notary Public for Oregon
My commission expires: _____

WAIVER OF REMONSTRANCE TO
THE FORMATION OF A LOCAL IMPROVEMENT DISTRICT OR OTHER
SHARED FINANCING MECHANISM FOR IMPROVEMENT OF O. B. RILEY
ROAD TO CITY OF BEND COLLECTOR STANDARDS

STATE OF OREGON)
) ss File No. PZ 06-412
County of Deschutes)

WHEREAS, Brian J. Brawner and Debra J. Brawner, hereinafter Owner, seeks approval of a zone change in City of Bend land use file PZ 06-412 for the following described real property located within the Bend city limits, of Deschutes County, Oregon;

THE NORTH 20 FEET OF TRACT 21, GLEN VISTA, DESCHUTES COUNTY, OREGON, EXCEPT THE EASTERLY 227.85 FEET AND THE EASTERLY 227.85 FEET OF TRACT 21, AND THE WESTERLY 150.0 FEET OF TRACT 20, GLEN VISTA, DESCHUTES COUNTY, OREGON.

WHEREAS, the City of Bend, has conditioned approval of PZ06-412 on the recording of Owner's Waiver of Remonstrance to the Formation of a Local Improvement District for the completion of said public improvements at some future date, as provided in the City of Bend land use decision dated November 6, 2006;

NOW THEREFORE,

1. Owner hereby waives its rights, as provided under Bend City Code, and ORS Sections 223.117, 223.118, 223.389 and ORS 223.391 to have its written or oral objection to a proposed local improvement counted for purposes of determining whether there are, by law, sufficient objections to force the relevant governing body to abandon the proposed improvement, including but not limited to the formation of a local improvement district. Owner, however, does not waive its right to submit written testimony or to appear before the Bend City Council at any public hearing to object or otherwise testify about the whether the assessment against the subject property represents that property's proportionate share of the improvement. Further, Owner does not waive the right to remonstrate against any LID or other financing mechanism that results in an assessment of more than $4,733 per residential lot. This waiver will not be effective unless the resolution, ordinance or other instrument creating the LID limits the final LID assessment to a maximum of $4,733 per residential lot.
2. It is the intent of Owner that this Waiver of Remonstrance shall be a condition and covenant that shall run with the land and be binding upon the real property described herein above and shall be binding upon Owner's heirs, executors, assigns and successors.

IN WITNESS WHEREOF, this document is executed this _____ of _____, 2006.

Debra J. Brawner

_____

STATE OF OREGON)
) ss
County of Deschutes:)

I certify that I know or have satisfactory evidence that Debra J. Brawner is the person who appeared before me, and said person acknowledged that she signed this instrument and acknowledged it to be his free and voluntary act for the uses and purposes mentioned in this instrument.

DATED this _____ day of _____, 2006

_____
Notary Public for Oregon
My commission expires: _____

Brian J. Brawner

_____

STATE OF OREGON)
) ss
County of Deschutes:)

I certify that I know or have satisfactory evidence that Brian J. Brawner is the person who appeared before me, and said person acknowledged that he signed this instrument and acknowledged it to be his free and voluntary act for the uses and purposes mentioned in this instrument.

DATED this _____ day of _____, 2006

_____
Notary Public for Oregon
My commission expires: _____

ACCEPTANCE BY CITY OF BEND

Accepted:_____
Harold A. Anderson, City Manager

STATE OF OREGON)
) ss
County of Deschutes)

This instrument was acknowledged before me on _____
by _____.

_____
Notary Public for Oregon
My commission expires: _____

ORDINANCE NO. NS-2035

AN ORDINANCE AMENDING THE CITY OF BEND ZONING ORDINANCE NO. NS-1178, BY CHANGING THE ZONING MAP DESIGNATION OF CERTAIN REAL PROPERTY FROM RESIDENTIAL SUBURBAN LOW DENSITY (SR 2 1/2) ZONE TO URBAN STANDARD DENSITY (RS) ZONE.

THE CITY OF BEND ORDAINS AS FOLLOWS:

Section 1. The Bend City Council has held a public hearing, considering the Hearings Officer's findings and record, and has found that there is a public need and benefit for the proposed change. The Bend City Council adopts the Decision and Recommendation of the Hearings Officer dated November 3, 2006, File Number PZ-06-429 and 06-430.

Section 2. Section 7(1) of Ordinance NS-1178 and the Zoning Map of the City of Bend are amended by changing the designation of the property described in Exhibit "A" and depicted on Exhibit "B" from SR 2 1/2, Suburban Low Density Residential to RS, Urban Standard Density Residential.

Read for the first time the 15th day of November, 2006.

Read for the second time the 6th day of December, 2006.

Placed upon its passage the 6th day of December, 2006.

YES: 7 NO: 0

Authenticated by the Mayor the 6th day of December, 2006.

Bill Friedman, Mayor

ATTEST:

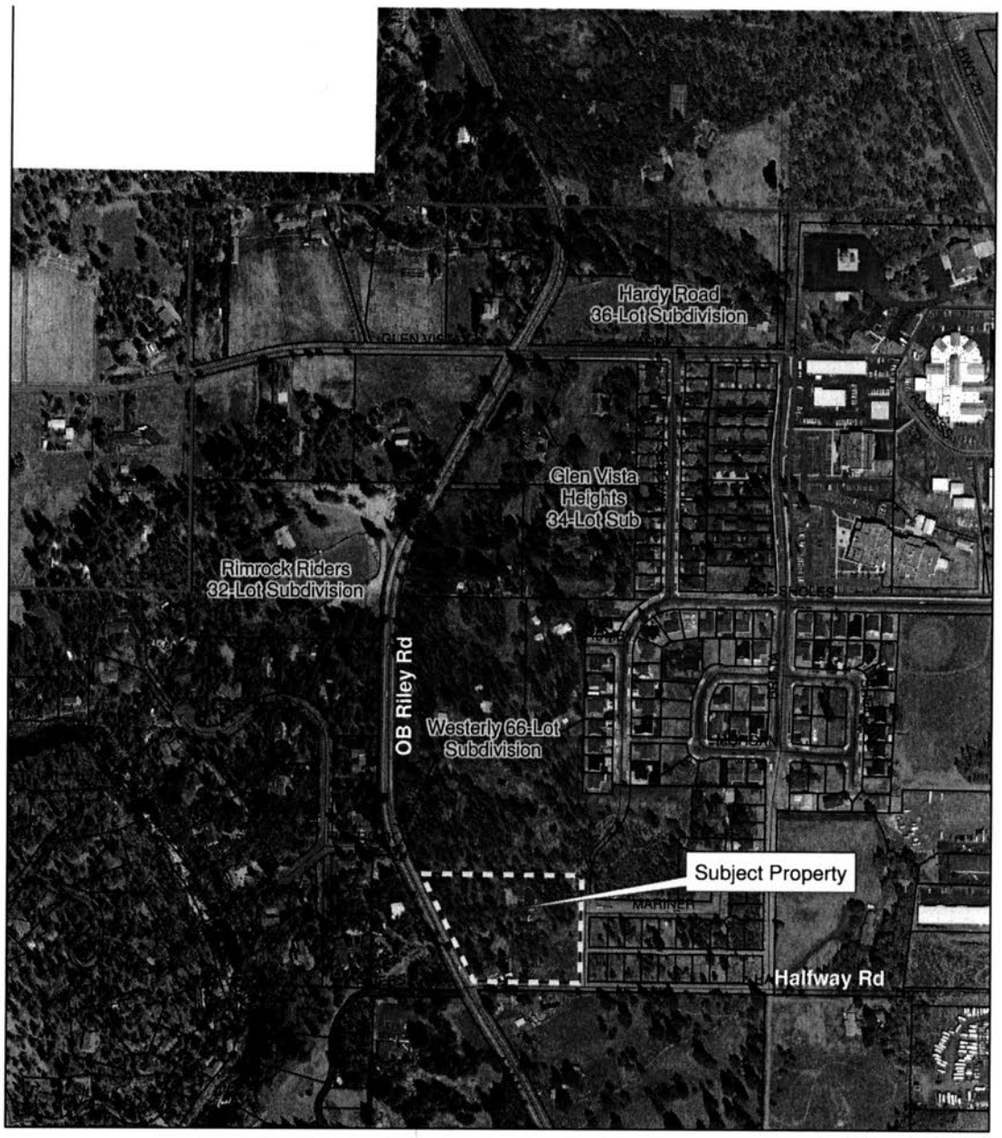
Patricia Stell, City of Bend Recorder

EXHIBIT "A"

A portion of the Southwest Quarter of the Southeast Quarter (SW1/4 SE1/4) of Section 17, Township 17 South, Range 12 East of the Willamette Meridian, Deschutes County, Oregon, described as follows:

BEGINNING on the Easterly boundary of the Old Dalles California Highway, and 30.0 feet North of the South line of the Southwest Quarter of the Southeast Quarter (SW1/4 SE1/4) of Section 17, Township 17 South, Range 12, East of the Willamette Meridian; thence South 89°55'44" East parallel with said South line for a distance of 363 feet more or less to a point which is 694.35 feet South 89°55'44" East and 30.00 feet North of the Southwest corner of said Southwest Quarter of the Southeast Quarter (SW1/4 SE1/4); thence North for a distance of 360.0 feet; thence North 89°55'44" West to the East boundary of the Old Dalles California Highway; thence Southeasterly along the East boundary of said highway to the point of beginning.

EXCEPTING that portion conveyed to Deschutes County by deed recorded July 5, 1974 in Book 208, Page 117, Deed records.


Hardy Road
36-Lot Subdivision
Glen Vista
Heights
34-Lot Sub
Rimrock Riders
32-Lot Subdivision
OB Riley Rd
Westerly 66-Lot
Subdivision
Subject Property
Halfway Rd
PZ 06-429 and 06-430 Alterra Investments
City Limits
0 250 500
Feet
N
Imagery acquired March 2004. Map prepared 11/2/06.