Idanha Transportation Study

CH2MHILL in association with ANGELO EATON & Associates

September 2005

Idanha Transportation Study

Idanha, Oregon

Prepared For:

Oregon Department of Transportation
Region 2
455 Airport Road SE
Salem, Oregon 97301
(503) 986-2655

City of Idanha
P.O. Box 430
111 OR 22 NW
Idanha, Oregon 97350
(503) 854-3313

Prepared By:

CH2M HILL
825 NE Multnomah, Suite 1300
Portland, Oregon 97232-2146
(503) 235-5022

Angelo Eaton & Associates
620 SW Main Street, Suite 201
Portland, Oregon 97205
(503) 224-6974

September 2005

Acknowledgements

The following people helped develop the Idanha Transportation Study for the Idanha community.

Idanha City Councilmembers
Jeff Skeeters, Mayor
Christi Ammon, Councilmember
Ben Anderson, Councilmember
Karen Clark, Councilmember
Walt Collier, Councilmember
Patricia McGrath, Councilmember

Idanha City Staff
Rosemary Wilson, City Recorder
Robyn Johnson, City Clerk

Idanha Interested Parties
Tony Hills, Citizen
Gene Slye, Torman Company

Oregon Department of Transportation
Terry Cole, ODOT Region 2 Project Manager

CH2M HILL
Kirsten Pennington, AICP
Michael Hoffmann
Andrew Barash, EIT
Tim Newkirk, EIT
Craig Grandstrom, PE

Angelo Eaton & Associates
DJ Heffernan, AICP
Katelin Brewer Colie

Contents

1. Background 1
Introduction 1
Purpose 2
Study Overview 2
Study Area 3
2. Public Involvement Process 4
Project Management Team 4
3. Project Goals 5
Project Goals 5
4. Existing Land Use & Transportation Inventory 6
Introduction 6
Roadway Characteristics 6
Collection of Traffic Volumes 9
Applicable Automatic Traffic Recorder Stations 9
Calculation of 30th Highest Hour Design Volumes 10
Intersection Operational Analysis 10
Performance Measures 10
Existing (2005) Operational Analysis 11
5. Future Transportation and Land Use Conditions 25
Introduction 25
Future (2025) No-Build Operational Analysis 25
Buildable Lands 27
Population and Employment Forecasts 27
6 Analysis of Options 31
Framework for Options Analysis 31
7 Plan Recommendations 35
Issues and Assets 35
Phase 1 Recommendations 36
Phase 2 Recommendations 41
8 Idanha Development Code Review 43
Introduction 43

Attachments

1 Traffic Operations Methodology Memorandum
2 Existing Traffic Count Data
3 Access Locations – OR 22
4 Idanha Access Management Presentation
5 Left Turn Lane Siting Criteria
6 Development Code Examples

Tables

1 OR 22 Shoulder Widths in Idanha, Oregon

2 Existing Intersection Analysis Summary – 2005 30th Highest Hour Design Volumes

3 Conditions During Reported Crashes on OR 22, January 1, 1999, through December 31, 2003

4 Collision Type and Cause for Reported Crashes on OR 22, January 1, 1999, through December 31, 2003

5 Five-Year OR 22 Crash History, January 1, 1999, to December 31, 2003

6 ODOT Spacing Standards for Statewide Highways

7 Approach Deficiency Inventory

8 2000 Summary of Land Supply

9 Future No-Build Intersection Analysis Summary – 2025 Projected 30th Highest Hour Design Volumes

10 Buildable Lands Worksheet

11 Projected Idanha Population

12 Industrial Land Needs Analysis (2015)

13 Commercial Land Needs Assessment (2015)

14 Projected New Housing Supply by Type to 2015

15 Residential Land Requirements

16 Planning Level Costs

17 Potential Funding Sources

Figures

1 Study Area

2 Existing Roadway Characteristics

3 Existing Operations

4 Existing Access Locations

5 Access Spacing Deficiencies

6 Land Use

7 Future Operations

8 ODOT Access Standards

9 Access and Section (ODOT Standards)

10 Potential Access Deviations

11 North Circulation Concept #1

12 North Circulation Concept #2

13 South Circulation Concept #1

14 Phase 1 Recommendations

1. Background

Introduction

The city of Idanha, Oregon is located along Oregon OR 22 (OR 22) in the North Santiam River Canyon of the Oregon Cascades, between Salem and Bend and just east of Detroit Lake. The North Santiam River flows through the southern portion of the city and the river canyon hillsides frame the city to the north and south. The Willamette National Forest boundary abuts the city on all sides. Idanha is located within both Marion and Linn counties. The elevation of Idanha is 1,718 feet.

OR 22 runs east-west through Idanha and functions as the city's primary roadway; the highway is designated as a statewide freight route and as a segment of a state scenic byway (the West Cascades Scenic Byway) and a national scenic byway (McKenzie Pass – Santiam Pass Scenic Byway). The portion of the city north of OR 22 includes primarily commercial and government land uses, including City Hall/library, the post office, and a general store. The portion of the city south of OR 22 includes primarily residential and industrial uses, such as homes and a prefabricated wood building manufacturing company. People living south of OR 22 must cross the highway, often on foot, to access key community facilities. There are also several parcels of undeveloped land located on both sides of the roadway. Idanha currently does not have public sewer service, but is actively pursuing the development of a system.

The population of Idanha is approximately 230. Idanha was incorporated as a city in 1949. Historically, the citizens have been dependent on the timber industry. Since the early 1980s, changes in technology and environmental regulations have reduced employment opportunities in the timber industry, affecting the economy in Idanha and the rest of the North Santiam River Canyon communities. Some recent economic development efforts have focused on the development of tourism, given that OR 22 serves as a popular route for recreational travel to Detroit Lake, Bend, and other Santiam Canyon or central Oregon locations. Other efforts have focused on business recruitment. OR 22 is one of the key elements for economic development in Idanha, as it provides access and visibility for area businesses.

Key transportation issues for Idanha have historically focused on OR 22. Major transportation-related concerns include speeding and pedestrian safety along OR 22, including crossing the highway at Main Street (near the post office). Additional concerns have included the safety of school children walking to the school bus stop at the southeast corner of Main Street and OR 22. Recently, ODOT approved the installation of a flashing yellow signal just west of the Main Street/OR 22 intersection, in front of the fire station. The signal is activated only under emergency circumstances. A crosswalk at the Main Street/OR 22 intersection was removed due to concerns that without other cues to change driver behavior, the crosswalk provided a false sense of security for pedestrians.

Purpose

The Idanha Transportation Study is intended to recommend solutions to improve the transportation system in Idanha. The City of Idanha asked the Oregon Department of Transportation (ODOT) for a study to address the following primary issues:

- Pedestrian and bicyclist safety, specifically along OR 22 through the city
- Speeding, specifically along OR 22 through the city
- Lack of street design along OR 22 that helps to create a "sense of place"

The purpose of the study was to examine alternative roadway treatments along OR 22 and other transportation solutions that could help address safety concerns while creating a sense of place through roadway design concepts or transportation solutions.

Study Overview

The Idanha Transportation Study first examines existing and future transportation system deficiencies in order to develop recommendations for improvements. Most of the study focused on OR 22, because the highway bisects Idanha and is the primary roadway through the city.

The study included analysis of the following transportation issues:

- Safety
- Traffic operations
- Geometric conditions
- Access
- Nonmotorized transportation (e.g., pedestrian and bicycle)

After examination of the existing conditions, it was determined that traffic operations are not expected to cause unacceptable congestion issues in the study area up to year 2030. Based on crash history, vehicle crash rates along OR 22 through Idanha are lower than average crash rates for similar state highways. Geometric issues with the roadway occur in several areas, including sight distance at the Church Street/OR 22 intersection and shoulder deficiencies along OR 22.

The primary transportation issues, particularly along OR 22, are:

1. A lack of access control through the main portion of the city
2. Safety issues for walkers and bicyclists, including crossing OR 22
3. Lack of roadway definition, likely leading to speeding and traffic passing on the right
4. Lack of roadway treatments and design that develop a sense of place or encourage travelers to slow down

This study provides recommendations to address these issues. Recommendations were grouped into two phases:

- Phase 1 addresses safety and nonmotorized concerns in the central city area, including a nonmotorized pathway, intersection definition, shoulder improvements to OR 22, and gateway treatments.

- Phase 2 includes longer-term access and development code recommendations to be implemented as property in Idanha develops or re-develops.

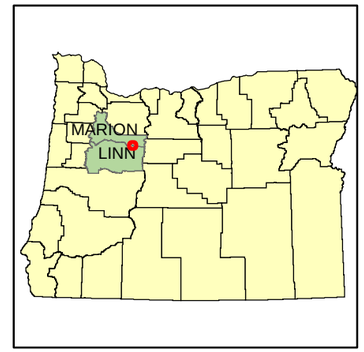
Study Area

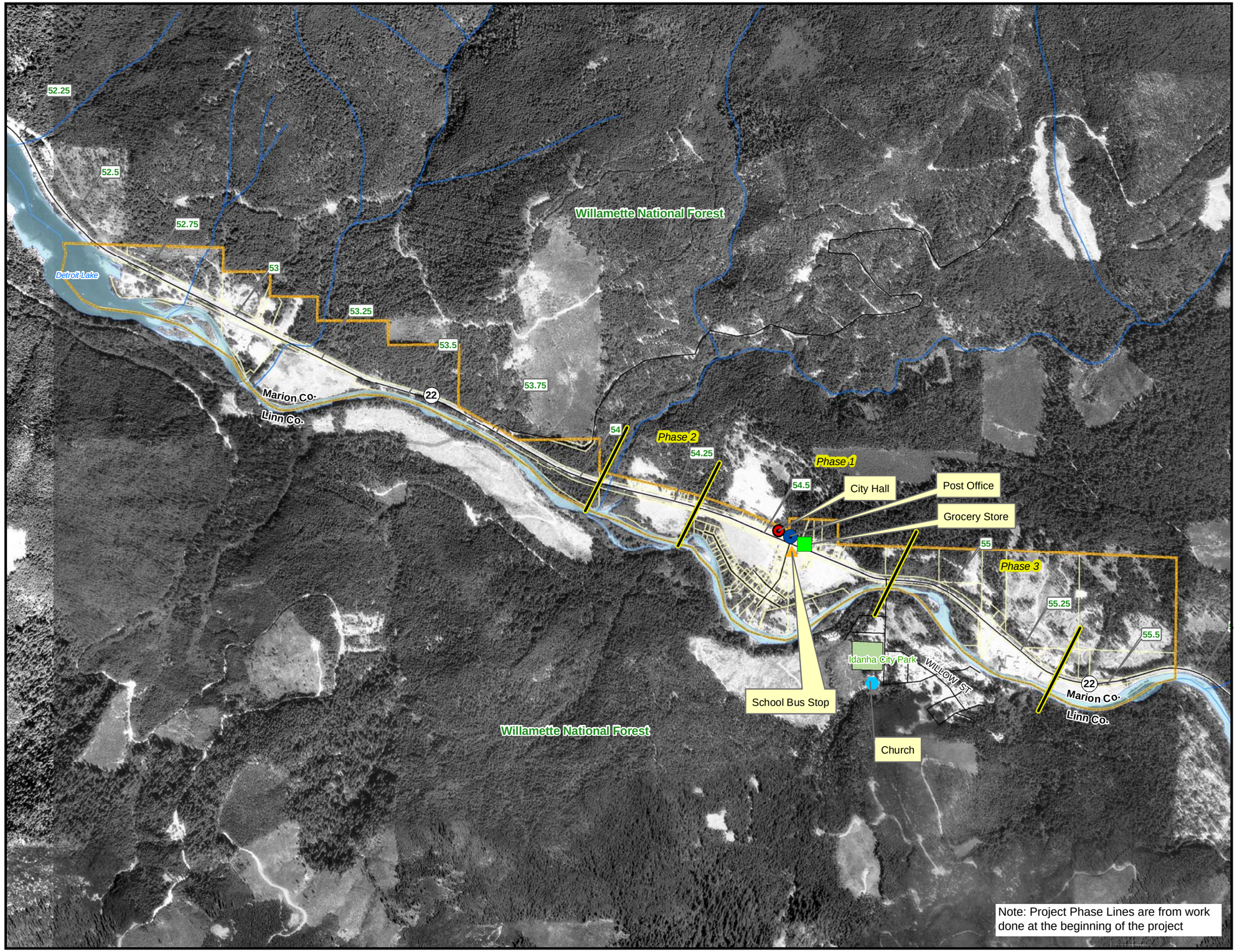
The project study area focuses on the OR 22 corridor through Idanha (approximately between mileposts 52 and 56) (Figure 1). The study area includes the following boundaries: east to the end of the industrial area south of OR 22; west to the structure over Boulder Creek; south to the Marion County line; north to the hillside. Analysis was primarily focused on the following high priority area: west to vacant parcel past Main Street; east to Church Street; south to encompass the residential areas on Main Street; north to the hillside.

Idanha Transportation Study

Figure 1
Study Area

Idanha, Oregon





Legend

- Idanha City Limits
- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- UGB
- Parks
- City Hall
- School Bus Stop
- Grocery Store
- Church
- Post Office
- 55.5 Milepoint
- Project Phase Boundary

N

600 0 600 1,200 Feet

CH2MHILL

File Path: \\Rosa\Proj\ODOT\323187\gis\mxds\figures\Figure_1_vicinity-map.mxd, Date: 01 17, 05 3:14:54 PM

2. Public Involvement Process

The Idanha Transportation Study was a coordinated approach between ODOT and the City of Idanha to address City of Idanha transportation concerns, in particular those on the state highway. Public involvement was a critical element to ensure that community desires, transportation system needs, and ODOT operations and safety guidance were accurately reflected through the study.

Project Management Team

Public involvement for the Idanha Transportation Study was primarily achieved through the use of a Project Management Team (PMT) that included representation from a wide range of community members. The PMT oversaw all steps of the study process. PMT members included City of Idanha Councilmembers, City of Idanha staff, other Idanha community members (including property owners along OR 22), ODOT, and consultant staff. The PMT met seven times during the project (11/22/04, 1/31/05, 2/28/05, 3/28/05, 4/18/05, 5/16/05, and 8/8/05).

The PMT developed the project goals and reviewed all of the proposed alternatives for the project. The PMT also outlined criteria that shaped the evaluation of alternative concepts for the transportation system and OR 22 corridor through Idanha.

The PMT ultimately decided that the tradeoffs associated with significant improvements within the OR 22 right-of-way (e.g., sidewalks, planter strips) were not worth pursuing at this time. The PMT felt that the decreased access to property, and the property impacts required to ensure truck access to commercial properties fronting OR 22 that would come along with access control, would be better addressed in the future as property develops along the corridor. Economic development is critical for the Idanha community at this time and the PMT was cautious about recommending alterations to the roadway that were perceived to adversely affect business access and viability.

Public Meeting

A community-wide public Open House meeting was held on 9/19/05 from 4:00 – 7:00 p.m. at Idanha City Hall. The Open House was advertised prior to the meeting by the City of Idanha. The purpose of the public meeting was to present the Idanha Transportation Study and receive feedback from the community. The meeting included information regarding project goals, existing conditions, alternatives analysis, and study recommendations. The Open House materials included several display boards and a rolling slide presentation. Comment forms were available for collecting comments. There were ten attendees, including city staff, the project team, and city councilmembers. The only comments received included concerns related to ensuring that the post office access is preserved.

3. Project Goals

Project Goals

The Idanha Transportation Facility Plan Project Management Team agreed at their meeting on 1/31/05 that the Transportation Facility Plan should be consistent with the following goals:

Goals from the Idanha Downtown Master Plan

- Create a unique image for downtown Idanha, possibly using a design theme.
- Provide people-friendly amenities such as landscaping, streetlighting, tasteful signage, and attractive public spaces.
- Improve traffic circulation conditions, especially access to OR 22 and bus service.

Project Goals

- Develop solutions that include attractive gateways to the city and encourage a "sense of place."
- Work to exceed safety standards for all modes of transportation (vehicle, bicycle, pedestrian).
- Promote solutions that are compatible with attracting investment and interest in the community.
- Develop a transportation plan that is compatible with the City's Comprehensive Plan.
- Plan solutions that allow for flexibility in future development.
- Coordinate with the Mid-Willamette Valley Council of Governments (MWVCOG) and regional planning efforts.

4. Existing Land Use & Transportation Inventory

Introduction

This section includes an inventory and description of existing transportation facilities and current land uses. The examination of existing conditions was used to identify deficiencies and as a baseline to develop proposed alternatives for transportation solutions in Idanha.

The transportation system inventory revealed no existing operational deficiencies and no specific crash location issues. However, the inventory did point to access spacing deficiencies, deficient shoulder widths along OR 22, lack of pedestrian and bicycle facilities, and lack of roadway edge definition, especially at intersections.

The land use inventory revealed a large amount of vacant/developable land in Idanha in all land use categories. Some land is not developed to full capacity because pending the development of a public sewer system, land parcels must accommodate septic systems.

Transportation System Inventory

Data for the transportation system inventory is drawn from a site visit on December 17, 2004; discussions with City of Idanha staff; Marion County and Linn County Geographic Information Systems (GIS) information; the *Idanha Comprehensive Plan* (February 2002); ODOT State Highway Inventory Reports; and ODOT Digital Video Log information.

The following transportation facility attributes are described:

- Roadway facilities
- Pedestrian facilities
- Bicycle facilities
- Transit facilities

Figure 2 shows transportation facility characteristics in the study area, including speed limit, stop control and signals, shoulder widths, and lane widths.

Roadway Characteristics

Ownership

Existing public roadways within the city limits of Idanha are owned and maintained by two different jurisdictions: ODOT and the City of Idanha. As owners of a roadway, jurisdictions are responsible for the following:

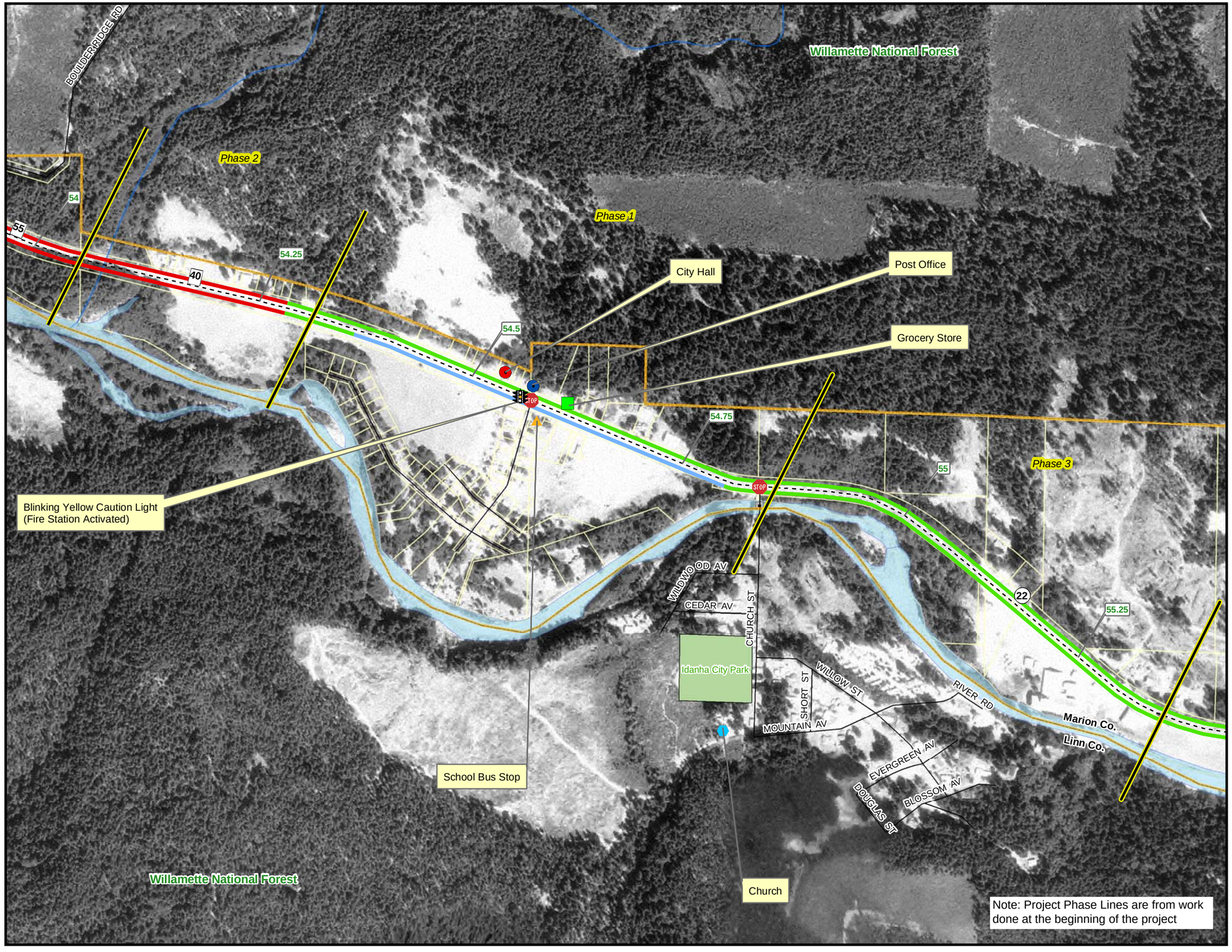
- Establishing the functional classification
- Maintenance
- Approving construction and access permits

ODOT owns OR 22. The City of Idanha owns all other roads inside city limits.

Idanha Transportation Study

Figure 2
Existing Roadway Characteristics
OR 22

Idanha, Oregon



Legend

- Idanha City Limits
- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- UGB
- Parks
- Hwy. 22 Centerline
- Bridges

Shoulder Width - Paved

- 1’
- 4’
- 6’

- Flashing Yellow Light
- Stop Sign
- City Hall
- School Bus Stop
- Grocery Store
- Church
- Post Office
- 55.5 Milepoint
- Project Phase Boundary

N

300 0 300 600 Feet

CH2MHILL

File Path: P:\ODOT\323187\gis\mxds\figures\Figure_2_Existing Transpo_Facilites_along_hw22.mxd, Date: 01 17, 05 1:18:45 PM

Functional Classification

Functional classification defines a street's role and context within the overall transportation system. In addition, it defines the desirable roadway width, right-of-way needs, access spacing, and appropriate type of pedestrian and bicycle facilities.

Arterials. Arterials are the highest classification of street and serve larger volumes of regional traffic at greater speeds. Arterials serve as the major truck routes and emphasize regional mobility over access.

OR 22 through Idanha is functionally classified by ODOT as a Rural Principal Arterial. OR 22 is designated as both a State Freight Route and Scenic Byway. OR 22 is also part of the National Highway System (NHS). OR 22, which is the only arterial located in Idanha, is the primary street through the city and is the focus of commercial activity.

Collectors. Collector streets are an intermediate class of street that typically serve as the most direct link between local roadways and the arterial system. According to the City of Idanha Comprehensive Plan, the following Collector streets are located in the city of Idanha:

- Main Street
- Church Street[1]
- Mountain Avenue
- Blowout Road

Local Streets. Local streets carry lower volumes of traffic than collectors and arterials and provide direct access to neighborhoods and homes. Local streets generally feed into collector streets. Access is the most important role of local streets. According to the Idanha Comprehensive Plan, the following Local streets are located in the city of Idanha:

- Short (2nd) Street
- Riverside Drive[2]
- River Road
- 1st Street
- Evergreen Avenue
- Douglas Street
- Blossom Avenue
- Mt. Jefferson Street

OR 22 Roadway Inventory

Travel Lanes

ODOT *Highway Design Manual* (HDM) standards applicable to OR 22 through Idanha call for a width of traveled way of 24 feet.[3] OR 22 consists of two travel lanes that are 12 feet wide throughout the study area, and therefore meets standards for lane widths. Two 16-foot southbound left turning lanes are present at the intersection of OR 22 and Blowout Road.

---

[1] Church Street is identified as a Local Street in the *Idanha Comprehensive Plan* (February 2002), but according to City staff and City Council, it should be classified as an Arterial.

[2] Riverside Drive is identified as an Arterial in the *Idanha Comprehensive Plan* (February 2002), but according to City staff and City Council, it should be classified as a Local Street – it is intended to serve as a public trail leading to a new park facility near the river in the future.

[3] Source: *Oregon Highway Design Manual*, Table 7-2

Shoulders

HDM standards applicable to OR 22 call for shoulder widths of 8 feet.[4] Shoulder widths along this segment of OR 22 are striped but generally do not meet HDM width standards. OR 22 shoulder widths in the study area are listed in Table 1.

TABLE 1
OR 22 Shoulder Widths in Idanha, Oregon

Milepost (MP) to MP	Westbound Lane Outer Shoulder Width (in feet)	Eastbound Lane Outer Shoulder Width (in feet)	HDM Standards Met?	
			Left	Right
52.00 to 52.74	1	1	No	No
52.74 to 52.78	1	8	No	Yes
52.78 to 52.84	6	8	No	Yes
52.84 to 52.91	6	4	No	No
52.91 to 52.96	4	8	No	Yes
52.96 to 53.00	6	8	No	Yes
53.00 to 53.02	2	8	No	Yes
53.02 to 54.09	1	1	No	No
54.09 to 54.54	4	6	No	No
54.54 to 56.00	4	4	No	No

Speed Limit

Speed limits on OR 22 through the Idanha study area range from 40 miles per hour (mph) in the central area (the 40 mph zone extends from approximately 1,000 feet east of Church Street to approximately 1,000 feet west of Main Street) to 55 mph outside of this area.

Intersections

The following public streets intersect with OR 22 in the study area: Blowout Road, Boulder Ridge Road, Main Street, and Church Street. Each of these streets is stop-controlled at its intersection with OR 22.

Traffic Control

There are no traffic signals on OR 22 in Idanha. In addition to the stop signs present at street intersections, the following traffic control devices are located along OR 22 in the Idanha study area.

- The two travel lanes of OR 22 are divided by a double-yellow line.
- A blinking yellow caution light is present outside the fire engine garage downtown.
- Left- and right-hand turning lanes are present at the intersection of OR 22 and Blowout Road.

Parking

Several areas adjacent to OR 22 are used as informal parking areas. These areas have trails leading down to the North Santiam River and are generally used by anglers and other people wishing to

[4] Source: *Oregon Highway Design Manual*, Table 7-2

access the river. It is difficult in many locations, especially near the center of town, to differentiate between the roadway shoulder and off-street parking areas.

City Roadway Characteristics

City roads within Idanha are all two-way unstriped streets, generally paved, and range in paved width from approximately 8 feet to 12 feet (Main Street and Church Street). City streets are posted at 25 mph. Vehicles park on the side/shoulder of the roadways. There are no existing pedestrian or bicycle facilities along city streets.

Existing Traffic Operations - OR 22

This section describes the operational characteristics of OR 22 in the city of Idanha. It includes discussions of the data collected, calculation of the 30th highest hour traffic volumes (which approximate peak-hour traffic, per ODOT recommendations), and existing intersection operations analysis results.

Collection of Traffic Volumes

Manual turning movement counts were collected for the following unsignalized intersections on January 11, 2005:

- *OR 22 and Blowout Road:* Counted for 2 hours from 4 PM to 6 PM. This intersection is unsignalized, with a stop sign on the approach from Blowout Road to OR 22. This intersection is located at the far western end of the city. It accesses OR 22 from the north and south. There are left turn lanes on OR 22 at this intersection.
- *OR 22 and Main Street:* Counted for 16 hours from 5 AM to 9 PM. This intersection is unsignalized, with a stop sign on the approach from Main Street to OR 22. Main Street approaches from the south. Directly north of Main Street is a private driveway that leads directly to the post office. This access to the post office is undefined, and blends with accesses to other properties to the east and west. There are no turn lanes at this intersection.
- *OR 22 and Church Street:* Counted for 2 hours from 4 PM to 6 PM. This intersection is unsignalized, with a stop sign on the approach from Church Street to OR 22. Church Street approaches from the south, and forms a "T" intersection with OR 22; there is no approach from the north. There are no turn lanes at this intersection.

Applicable Automatic Traffic Recorder Stations

A review of ODOT's permanent Automatic Traffic Recorder (ATR) stations was conducted to determine seasonal variation patterns in traffic volumes along OR 22. There are no permanent stations located within the study area, but one ATR station (Detroit, #24-015) is located one mile west of the study area at milepost 51.30. This ATR station was approved by ODOT for usage for this project. Attachment 1 includes a methodology memorandum that details assumptions and methods for existing and future operations analysis.

Calculation of 30th Highest Hour Design Volumes

The peak-hour turning movement counts collected on January 11, 2005, were seasonally adjusted to represent the 30th highest hour design volumes using data[5] from the Detroit ATR station. The seasonal adjustment factor was calculated to be 2.20. This is an ODOT required procedure to achieve a consistent hour of analysis that accounts for traffic volumes collected at different times of the year. Therefore, although the traffic counts were completed in the winter, the traffic volumes are adjusted to account for summer volumes, based on comparisons to traffic near Detroit Lake on OR 22. Traffic count data are provided in Attachment 2.

In addition to the seasonal factor adjustment, trips were added to the intersections along OR 22 to account for the campground and recreational vehicle park entrance at Church Street, which is used during the summer months. It was necessary to add these trips to the 30th highest hour traffic volumes because the traffic counts were collected during a time when the park is not active. The additional trips were determined by using the 2003 Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 7th Edition. Fifteen trips were added (10 in and 5 out) based on ITE Land Use Code 416 for a Campground/RV Park of similar nature and size.

Next, the design volumes were adjusted along OR 22 to demonstrate a balanced system between adjacent study intersections. These balanced 30th highest hour turning movement volumes were input into the operational analysis.

Intersection Operational Analysis

A Synchro model was constructed for the study area based on existing roadway channelization, field observations, and the balanced 30th highest hour design volumes. This model was used to assess existing operations along the highway.

The Synchro model uses the methodology in the 2000 *Highway Capacity Manual* (HCM) to analyze both signalized and stop-controlled intersections. The model also computes the volume-to-capacity (V/C) ratio necessary to determine whether the intersection meets the applicable mobility standard from the *Oregon Highway Plan*.

Performance Measures

The *Oregon Highway Plan* outlines specific performance measures to be maintained along ODOT facilities as part of the mobility standards. These standards are aimed at maintaining mobility along important roadway sections and vary according to functional classification, location, and role within the National Highway System.

The following mobility standards are applicable for the study intersections:

- **OR 22, from milepost 52.56 to milepost 54.33 and 55.05 to 55.64**: Volume-to-capacity ratio of 0.70 given its categorization as a Statewide, National Highway System, Freight Route and Inside Urban Growth Boundary, Non-MPO (not within a metropolitan planning organization) outside of Special Transportation Areas (STAs), where non-freeway speed limit ≥45 mph.
- **OR 22, from** milepost **54.33 to milepost 55.05**: Volume-to-capacity ratio of 0.75 given its categorization as a Statewide, National Highway System, Freight Route and Inside Urban Growth Boundary, Non-MPO outside of STAs where non-freeway speed limit <45 mph.

[5] The 2003 seasonal factor tables from the ODOT website were used.

- **Blowout Road,** Main **Street, and Church Street**: Volume-to-capacity ratio of 0.85 given their categorization as District/Local Interest Roads and Inside Urban Growth Boundary, Non-MPO outside of STAs where non-freeway speed limit <45 mph.

Existing (2005) Operational Analysis

Existing (2005) V/C ratios were computed for all three study intersections based on the balanced 30th highest hour design volumes. Table 2 shows these results and compares them to the applicable mobility standards. The intersection with the worst peak-hour result was Blowout Road, which was still far within the accepted mobility standard. The results of the existing (2005) operational analysis show that each intersection approach meets the applicable roadway mobility standard and operates very well. All V/C ratios are below 0.20. Figure 3 shows existing traffic turning volumes and operations analysis results.

TABLE 2
Existing Intersection Analysis Summary - 2005 30th Highest Hour Design Volumes

	OR 22 Approaches		Cross Street Approaches	
Intersection	**V/C Ratio**	**Mobility Standard**	**V/C Ratio**	**Mobility Standard**
OR 22 at Blowout Road	0.16	0.70	0.12	0.85
OR 22 at Main Street	0.14	0.75	0.06	0.85
OR 22 at Church Street	0.13	0.75	0.10	0.85

Note: Results are reported for the movement with the highest V/C Ratio.

Crash Analysis – OR 22

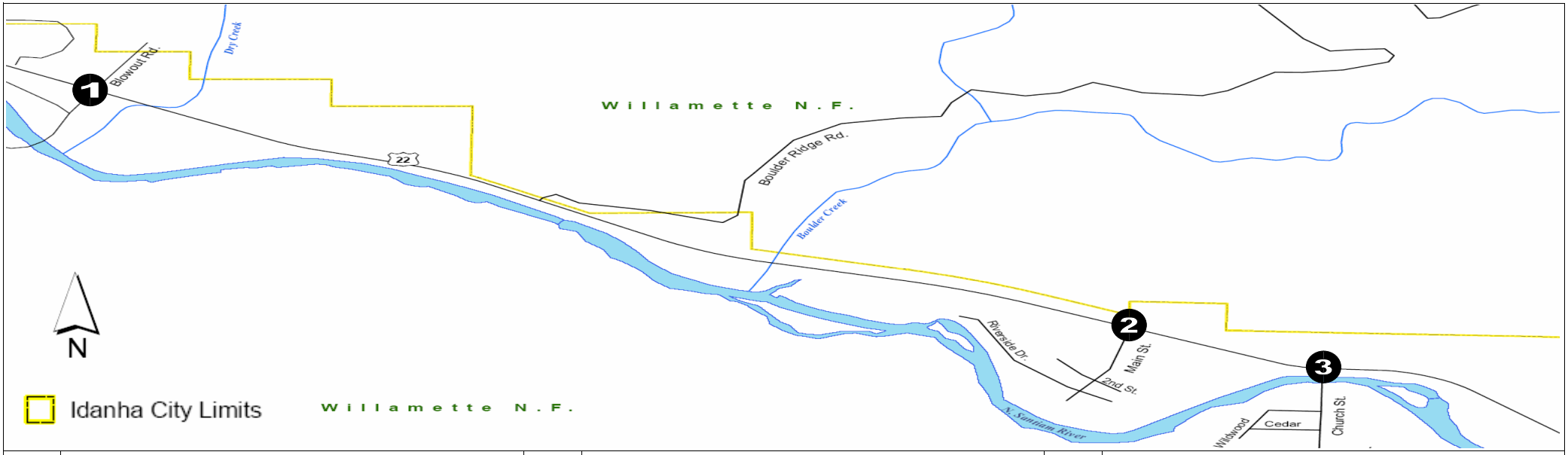
Crash History

Vehicle crash data for the section of OR 22 from milepost 52.56 to milepost 55.64 were analyzed for the years 1999 to 2003, the most recent 5-year crash history available.[6] The crash data were analyzed to determine where, when, how, and how often collisions took place. The following discussion includes the crash rates and any significant patterns that emerged from this analysis.

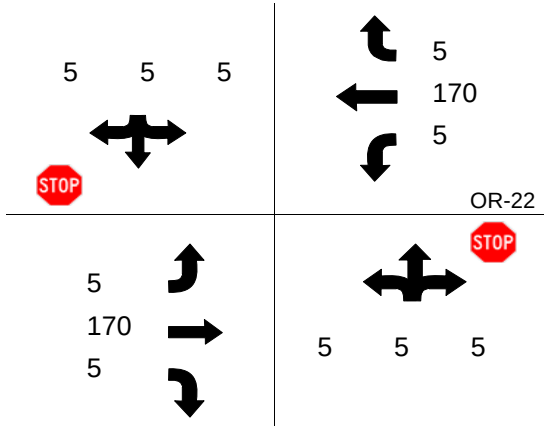
A total of six crashes reported for the 5-year period occurred along the study section of OR 22 and all occurred in 1999 and 2000. Of the total, four crashes resulted in an injury and two resulted in property damage only. No fatalities were reported.

Five of the six crashes occurred during dry, clear conditions in daylight and the sixth occurred in cold, icy conditions in daylight. Table 3 shows the roadway conditions during the reported crashes.

[6] The ODOT Crash Analysis and Reporting Unit provided the data.

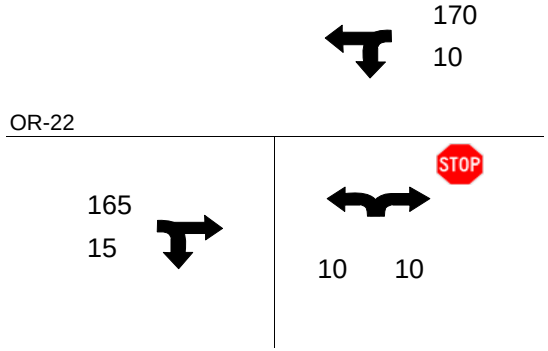


1 Blowout Road and OR-22



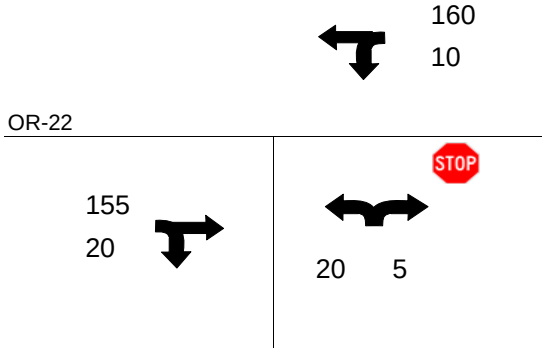
Major Street V/C Ratio: 0.16 Minor Street V/C Ratio: 0.12

2 Main Street and OR-22



Major Street V/C Ratio: 0.14 Minor Street V/C Ratio: 0.06

3 Church Street and OR-22



Major Street V/C Ratio: 0.13 Minor Street V/C Ratio: 0.10

LEGEND

25 → 2005 PM Peak Hour Traffic Volumes

2 Intersection Number

Existing Lane Channelization

Note: All V/C ratios are less than the Oregon Highway Plan mobility standards.

Figure 3

Existing (2005) PM Peak Traffic Operations

Idanha Transportation Study

CH2MHILL

TABLE 3
Conditions During Reported Crashes on OR 22, January 1, 1999, through December 31, 2003

Condition	Number of Accidents	Percentage (100.0 Total)
Light		
Day	6	100.0
Roadway Surface		
Dry	5	83.3
Ice	1	16.7
Weather		
Clear	5	83.3
Cold	1	16.7

The crash types along OR 22 in the past 5 years are evenly split between rear-end and fixed object crashes. Most of the accidents reported were caused by "driving too fast for conditions." Drugs or alcohol was the cause of one crash. Table 4 summarizes both the collision type and cause of the crash.

TABLE 4
Collision Type and Cause for Reported Crashes on OR 22, January 1, 1999, through December 31, 2003

Description	Number of Accidents	Percentage (100.0 Total)
Collision Type		
Rear End	3	50.0
Fixed Object	3	50.0
Crash Cause		
Speed too fast for conditions	3	50.0
Followed too closely	2	33.3
Alcohol or Drug involved	1	16.7

The crash data were also used to investigate crashes by month, day-of-week, and time-of-day. Four of the six crashes occurred in July. One crash occurred on each day of the week, except for Wednesday. Four crashes occurred between the hours of 2:00 PM and 9:00 PM. These crashes generally coincided with the highest amount of daily traffic, given that the peak-hour counts showed 4:00 PM to 5:00 PM as the most traveled hour and July as the most traveled month.

Four of the six crashes occurred in a one-mile segment starting on the west city limits and three were recorded at one location, milepost 52.70. These three crashes involved drivers in vehicles traveling too fast for the conditions and two involved single vehicles leaving the roadway and striking a tree, bush, or shrubs. The third crash at this location was a rear-end type collision. This

location is just east of a gentle curve, which likely contributes to the collision occurrences. It also coincides with the western Idanha city limits, near Blowout Road.

Five crashes occurred on a straight section of roadway. One of the crashes occurred at the intersection with Main Street. This crash occurred in January 2000 and was a rear-end type crash involving two vehicles traveling eastbound on OR 22. The driver of the second vehicle was stopped in traffic, not waiting to make a turn, when the driver of the first vehicle struck the second. The driver of the first vehicle was recorded as following too closely.

Crash Rates

Crash rates, expressed in "crashes per million vehicle-miles traveled," are used to compare the crash experience of one roadway segment to another. This rate expresses how many crashes might be expected of vehicles traveling through a particular section of roadway for a cumulative total of one million miles.

The study section of OR 22 was analyzed for the entire length of the study section based on reported crashes between 1999 and 2003, as shown in Table 5.

TABLE 5
Five-Year OR 22 Crash History, January 1, 1999, to December 31, 2003

Description	Milepost From	Milepost To	Segment Length (miles)	2001 Average Annual Daily Traffic (AADT)	Crashes (total 5 years/ average annual)	Average Annual Crash Rate (crashes per million vehicle-miles)	Statewide Crash Rate for Principal Arterial, Rural City[1]
West City Limits to East City Limits	52.56	55.64	3.08	3,200	6/ 1.2	0.33	1.28

[1] From Table IV of 2003 State Crash Rate Tables.

The study section of OR 22 is classified as a Rural Principal Arterial and Idanha is a Rural City. ODOT has computed a statewide crash rate of 1.28 for principal arterials in rural cities. The overall study section crash rate of 0.33/year is significantly less than the Rural City, statewide crash rate.

Safety Prioritization Index System (SPIS)

In addition to crash rates, ODOT also assesses roadway safety via the Safety Prioritization Index System (SPIS). Data for the SPIS system are generated annually, based on the most recently available 3 years of crash data, and are used to identify hazardous locations along state highways. They can be used to calculate a relative score that takes into account crash frequency, crash rate, and crash severity. SPIS scores are computed for tenth-of-a-mile sections. The scores for different roadway segments can be compared to determine where safety improvement funds might best be spent. Typically, ODOT places the highest priority locations where SPIS scores fall within the top 10 percent in the entire state.

There were no sites within the study section that appeared in the top 10 percent of the SPIS scoring between 2001 and 2003.

The safety analysis shows that there was a speeding problem at milepost 52.70 in 1999 and 2000, but evidence that the problem continued is absent, perhaps due to additional signage that has been added.

Speeding

Many vehicles observed during the field visit appeared to be exceeding the speed limit in the city center area. According to Police Chief Gary Will (City of Turner), who participated in enforcement efforts in Idanha with the Marion County Interagency Traffic Team during summer 2005, 21 speeding citations were issued in 7 hours over the July 4th weekend between the post office and country store. One of those cited was an Idanha resident. According to Chief Will, approximately 50 percent of drivers were driving at least 5-10 mph over the speed limit. The highest speed recorded was 25 miles over the speed limit, and the lowest speed recorded and given citation was 16 miles over the speed limit. The reasons most commonly given Chief Will by speeders included: (1) drivers did not know they were in a city, and (2) there were no speed limit signs. Chief Will noted that speeding is a problem statewide in areas without dedicated police forces.

Safety – Additional Field Observations and Local Information

The following field observations and local information are related to safety on OR 22 through Idanha:

- Sight distance is poor for motorists turning eastbound onto OR 22 from Church Street. In general, sight conditions in the vicinity of the intersection of OR 22 and Church Street are poor. This is due to a curve and the proximity of the roadway to the Santiam River. Residents feel there is poor sight distance along OR 22 near the east end of the city.
- Recent and faded truck tire marks were observed in the open shoulder area near the city center, indicating that vehicles have swerved across the shoulder area of the highway.
- According to City of Idanha staff, vehicles tend to pass on the right in both directions near the city center, but especially in the westbound lane where a large swath of uncontrolled access pavement exists.
- According to City of Idanha staff, crossing OR 22 is dangerous at OR 22 and Main Street. Children wait for school buses at the southeast corner of this intersection and often need to cross the highway.

Access Conditions – OR 22

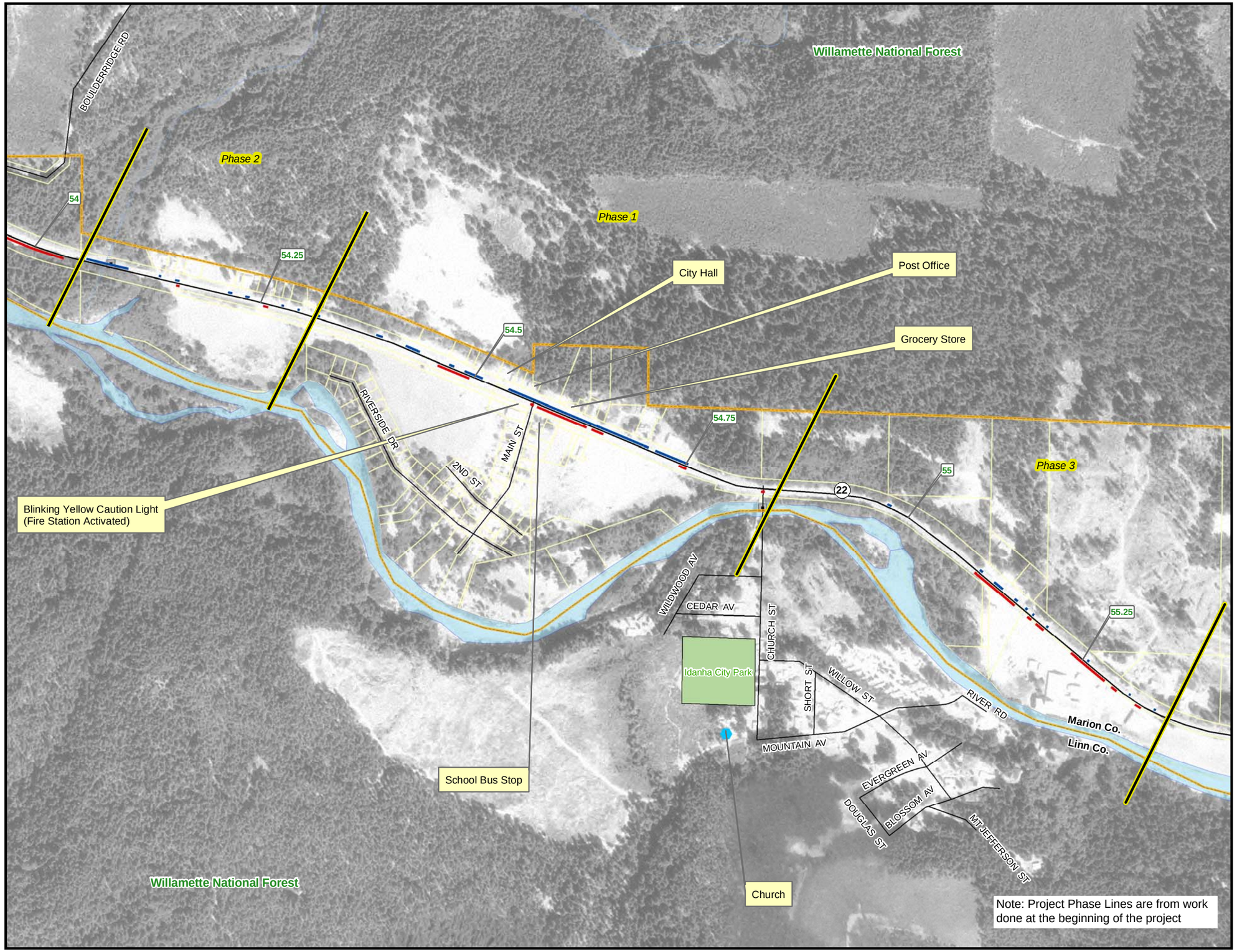
Attachment 3 catalogues all public and private access points along OR 22 in the city of Idanha, and also lists all existing approach permits, per ODOT records. Access points include local street approaches, forest road approaches, commercial and residential driveway approaches, and other points where there are at-grade vehicular accesses to OR 22. Access point locations along OR 22 in the study area are shown in Figure 4. In general, there is very little access control in place in the study area. Accesses do not meet ODOT access spacing standards. There is a 900-foot-wide access to the highway in the middle of the city. Despite the substandard access control, however, the crash analysis does not suggest safety issues within the city, and the operations analysis does not identify operational issues. Operational and safety conditions should be monitored to determine if congestion or the number of crash incidents worsens.

Access management involves planning the location, design, and operation of driveways, medians and intersections for the purpose of providing access to land, while simultaneously preserving the safety and efficiency of a roadway for its users. The concept of access management concentrates on

Idanha Transportation Study

Figure 4
Existing Accesses to OR 22

Idanha, Oregon



Legend

Access Locations to Highway 22

- South Side Approaches
- North Side Approaches
- Idanha City Limits
- Hwy. 22 Centerline
- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- Parks
- City Hall
- School Bus Stop
- Grocery Store
- Church
- Post Office
- 55.5 Milepoint
- Project Phase Boundary

* Width of line on map represents acutal width of access to highway

N

300 0 300 600 Feet

CH2MHILL

File Path: P:\ODOT\323187\gis\mxds\figures\Figure_2_Existing Transpo_Facilites_along_hw22.mxd, Date: 01 17, 05 2:48:45 PM

Santiam River

Figure 6. Land Use

City of Idanha
Land Use Map, 1997

City Limits
Urban Growth Boundary

Idanha Land Use
- Commercial
- Commercial-Recreation
- Industrial
- Light Industrial
- Public
- Residential
- Residential- Restricted Development

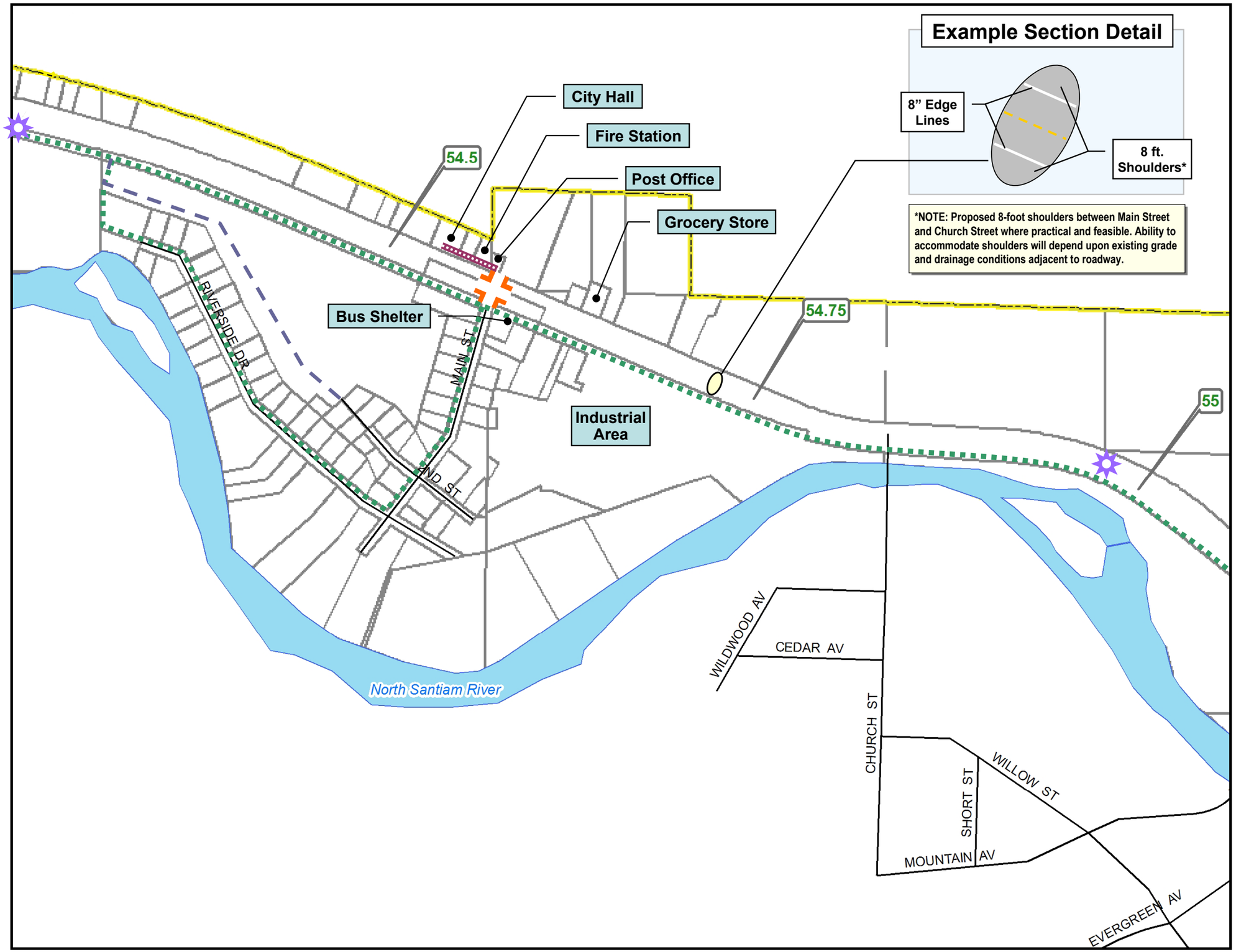
600 0 600 1200 Feet

This Map Prepared By:
Mid-Willamette Valley
Council of Governments
105 High Street SE
Salem, OR 97301
ph: 503.588.6177
fax:503.588.6094
mwvcog@open.org
www.open.org/cog

July 2000

Idanha Transportation Study

Figure 14
Phase 1 Recommendations
Idanha, Oregon



Legend

- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- Idanha City Limits
- 55.5 Milepoint
- Gateway Location
- Proposed Multi-Use Regional Trail
- 2nd Street Extension (Phase 2 Project)
- Off-Street Pedestrian Connection
- Intersection Definition

N

0 150 300 450

CH2MHILL

restricting the number of direct accesses to major surface streets, providing reasonable indirect access, effectively designing driveways, and enforcing safe and efficient spacing and location of driveways.

A variety of techniques are available for achieving access control. They include geometric design considerations (such as medians and channelized islands that prohibit certain turning movements); consolidation actions (such as joint use of driveways and service roads); and other actions such as removal and relocation of existing access and the introduction of auxiliary lanes for left and right turns. Attachment 4 includes a presentation regarding access management and its effect on the roadway system.

Existing Accesses

There are approximately 61 approaches to OR 22 within Idanha city limits. Of this number:

- 23 are commercial/industrial driveways
- 19 are residential driveways
- 8 are vehicle pullouts (including informal parking areas)
- 5 are public roads
- 3 are Forest Service roads
- The remaining approaches include a single large swath of uncontrolled highway access in the center of the city (which includes City Hall, the Idanha Post Office, a grocery store, a residence, and a commercial establishment) and other approaches whose purpose was not identifiable.

Access Spacing Deficiencies

Access management treatments are concerned with preserving adequate mobility and ensuring adequate safety. The two concerns are directly connected. For example, a series of closely spaced driveways onto a highway may result in delays for motorists (a mobility problem) due to the multiple points of merging traffic. At the same time, the likelihood of an accident increases under these conditions (a safety problem). Access management treatments can often address both concerns simultaneously. Along OR 22 in the Idanha study area, a combination of insufficient spacing between existing approaches and a lack of highway access control in the city center area contributes to a "free-for-all" environment.

Spacing Standards

1999 Oregon Highway Plan (OHP) Criteria

OR 22 in Idanha is functionally classified by ODOT as a Rural Principal Arterial of Statewide Significance. OR 22 is designated as both a State Freight Route and Scenic Byway and is part of the National Highway System (NHS). OR 22 is the only arterial located in Idanha and is the focus of commercial activity.

Division 51 (OAR 734-051-0010 through 734-051-0560) specifies access management spacing standards for ODOT facilities. The standards are based on the functional classification of the highway, the general type of land use (i.e., rural, urban), and the posted speed. Spacing standards relevant to OR 22 inside the city limits of Idanha, where speeds range from 40-55 mph, are shown in Table 6.

TABLE 6
ODOT Spacing Standards For Statewide Highways

	Rural		Urban			
Posted Speed (mph)	Expressway (ft)	Other (ft)	Expressway (ft)	Other (ft)	UBA (ft)	STA (ft)
≥55	5,280	1,320	2,640	1,320		
50	5,280	1,100	2,640	1,100		
40 & 45	5,280	990	2,640	990		
30 & 35		770		770	720	*
≤25		550		550	520	*

*See Oregon Highway Plan, Appendix C, "Notes on Tables 13, 14, and 15", note #4

Figure 5 shows access spacing deficiencies within Idanha. Table 7 lists the approaches to OR 22 inside the city limits of Idanha that have substandard access spacing. (For this table, if a space between two approaches is substandard, both approaches involved are identified as not meeting the standard.)

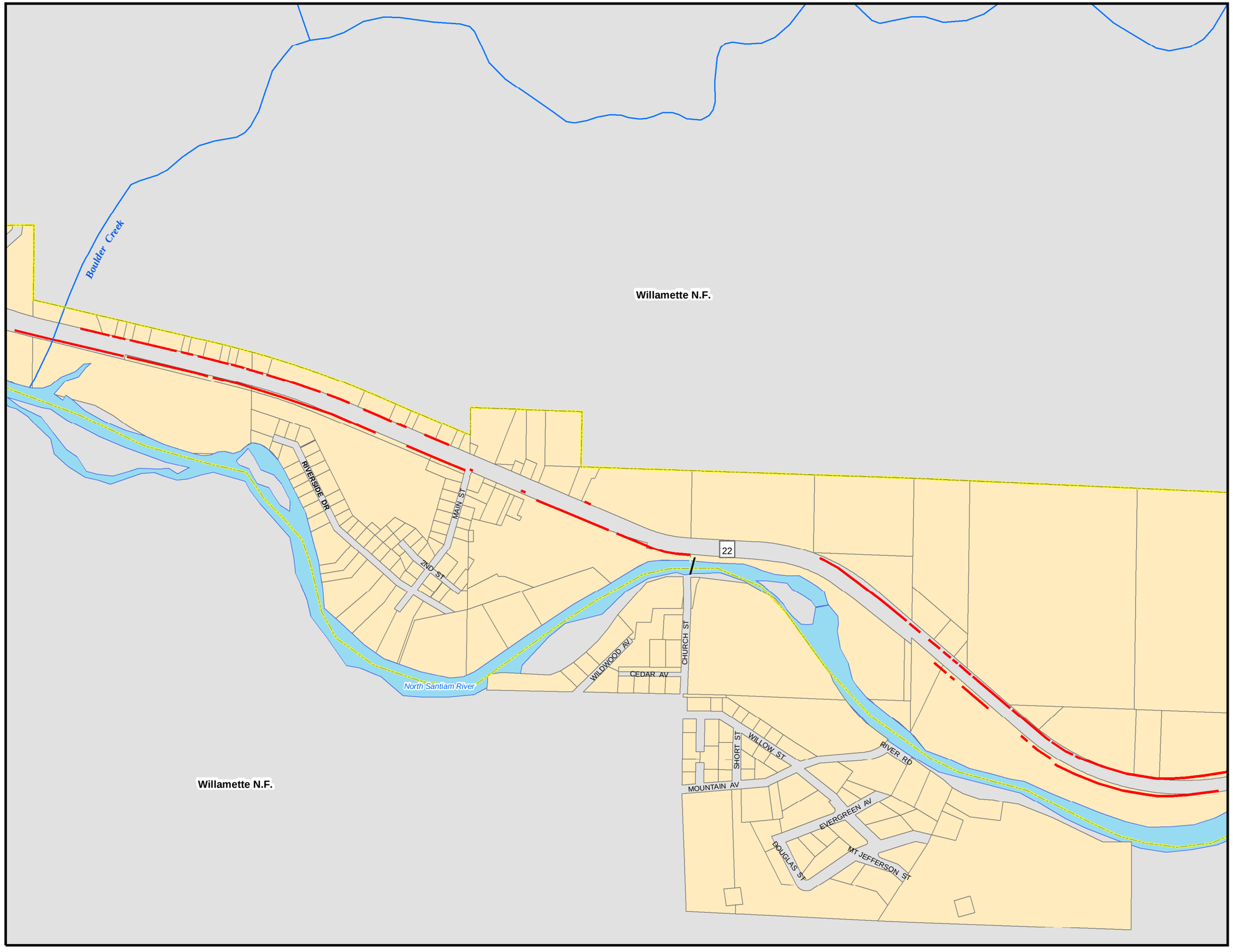
TABLE 7
Approach Deficiency Inventory

Side of Hwy by Travel Direction	Milepoint*	Type of Service	Approach Material	Throat Width (ft)
OR 22 Westbound				
Westbound	56.01	Residential	paved	50
Westbound	55.89	Turnout	gravel	180
Westbound	55.54	Road (closed off with boulders)	paved	60
Westbound	55.34	Residential	paved	14
Westbound	55.31	Residential	paved	12
Westbound	55.25	Residential	paved	14
Westbound	55.19	Forest service road	paved	14
Westbound	55.17	Residential	paved	12
Westbound	55.16	Residential	paved	15
Westbound	55.15	Commercial	paved	23
Westbound	55.12	Commercial	paved	65
Westbound	55.10	Residential	paved	22
Westbound	54.98	Commercial	paved	25
Westbound	54.73	Commercial/Industrial	gravel	205

Idanha Transportation Study

Figure 5
Access Spacing Deficiencies

Idanha, Oregon



Legend

- Deficient Access Spacing
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax Lots
- Idanha City Limits
- Bridge

0 200 400 600 800 Feet

CH2MHILL

TABLE 7
Approach Deficiency Inventory

Side of Hwy by Travel Direction	Milepoint*	Type of Service	Approach Material	Throat Width (ft)
Westbound	54.62	Large pullout area –includes: single family residence, grocery store, post office	4 ft paved, remainder gravel	875
Westbound	54.50	Commercial (coffee kiosk); City Hall	paved	105
Westbound	54.47	Commercial	paved	30
Westbound	54.42	Commercial	paved	75
Westbound	54.38	Other	paved	40
Westbound	54.42	Other	paved	75
Westbound	54.32	Residential	gravel	20
Westbound	54.29	Residential	gravel	14
Westbound	54.27	Residential	gravel	14
Westbound	54.23	Residential	paved	25
Westbound	54.21	Residential	gravel	25
Westbound	54.15	Residential	gravel	25
Westbound	54.13	Residential	gravel	15
Westbound	54.08	Turnout	gravel	250
Westbound	53.71	Boulder Creek Road	paved	45
Westbound	53.23	Forest service road and Turnout	gravel	250
Westbound	53.13	Commercial/Industrial	paved	40
Westbound	53.09	Residential	paved	40
Westbound	53.06	Residential	paved	40
OR 22 Eastbound				
Eastbound	52.96	Blowout Road	paved	28
Eastbound	53.22	Gravel Pit	gravel	30
Eastbound	53.23	Gravel Pit	paved	20
Eastbound	53.26	Gravel Pit	gravel	200
Eastbound	53.35	Parking Lot	gravel	30
Eastbound	53.44	Turnout	gravel	100
Eastbound	53.54	Turnout	gravel	200
Eastbound	53.68	Turnout	gravel	350
Eastbound	53.71	Boulder Creek Road	paved	45
Eastbound	53.95	Informal Parking/Turnout	gravel	800

TABLE 7
Approach Deficiency Inventory

Side of Hwy by Travel Direction	Milepoint*	Type of Service	Approach Material	Throat Width (ft)
Eastbound	54.15	Vacant lot	gravel	20
Eastbound	54.26	Vacant lot	gravel	30
Eastbound	54.48	Commercial	gravel	200
Eastbound	54.54	Main Street	paved	22
Eastbound	54.60	Commercial -Vacant Lot	gravel	310
Eastbound	54.65	Commercial	paved	75
Eastbound	54.75	Turnout	paved	50
Eastbound	54.80	Church Street	paved	22
Eastbound	55.12	Commercial - Parking Lot	gravel	300
Eastbound	55.17	Commercial - Parking Lot	paved	30
Eastbound	55.19	Commercial/Industrial - vacant mill	paved	60
Eastbound	55.26	Commercial/Industrial- vacant mill	paved	250
Eastbound	55.28	Residential	paved	40
Eastbound	55.30	Commercial/Industrial - vacant	paved	40
Eastbound	55.33	Commercial/Industrial - vacant	paved	40
Eastbound	55.52	Turnout/Vacant lot	paved	45
Eastbound	55.89	Residential	paved	80
Eastbound	56.01	Residential	paved	40

*Access milepoint number represents approximate center point of access approach.

In addition to deficient spacing between approaches, access deficiencies also arise when the driveway or intersection approaches themselves are too wide. In Idanha, an approximately 900-foot-wide approach to the highway exists along the westbound lane of OR 22 in the city center. The lack of highway access control in this area creates a situation where vehicles can turn off and pull onto the highway anywhere within this 900-foot segment. The resulting conditions include:

- Driver uncertainty – without delineated driveways, motorists do not have clear directional cues in regard to accessing particular properties.
- Potential pedestrian/bicycle conflicts – pedestrians and bicyclists have no physical buffer to protect them from vehicles entering and exiting the highway.

Pedestrian and Bicycle Facilities

There are few designated pedestrian and bicycle facilities in Idanha. Pedestrian and bicycle issues include a lack of controlled vehicle access points along OR 22, which can lead to conflicts with pedestrians and bicyclists as noted above; shoulder width deficiencies; and issues related to crossing OR 22.

Pedestrian Facilities

Pedestrian facilities that are accessible and comfortable to use are an essential component of the transportation system. Pedestrian safety and connectivity is particularly relevant to Idanha. As the 1995 *Oregon Bicycle and Pedestrian Plan* (OBPP) explains, virtually everyone is a pedestrian at some point during the day, and therefore almost everyone benefits from accessible facilities. Pedestrians include children walking to and from school, people using wheelchairs or other forms of mobility assistance, people walking to lunch, and people walking to and from their vehicles. In addition, walking meets the commuting, recreational, and social transportation needs for a portion of the population that do not or choose not to drive. A community's pedestrian system also offers recreational opportunities for both local and out-of-town users, potentially stimulating economic growth and tourism.

According to the OBPP, pedestrian facilities are any facilities used by a pedestrian. These types of facilities include walkways, traffic signals, crosswalks, curb ramps, and other amenities such as illumination or benches.

There are presently no formal bicycle or pedestrian facilities in the city of Idanha. This is potentially most problematic in the city center area on OR 22, the focal point of potential pedestrian and bicycle trips. City center amenities are located on the north side of the highway, whereas Idanha's residential areas are located south of the highway.

- ***Sidewalks/curbs:*** Sidewalks are located along roadways, are separated from the roadway with a curb and/or planting strip, and have a hard, smooth surface, such as concrete. ODOT standard sidewalk width is 6 feet along major roadways. Currently there are no sidewalk or curb facilities adjacent to OR 22 or along any of the other streets in the Idanha study area.

- ***Shared use paths:*** Shared use paths are used by a variety of non-motorized users, including pedestrians, cyclists, skaters, and runners. Shared use paths may be paved or unpaved, and are often wider than the average sidewalk (i.e., 10 to 12 feet). Currently there are no shared use paths in Idanha. However, the proposed Lyons-Idanha Trail, a shared use facility, is planned to be built in the existing greenway south of OR 22 between the highway and the North Santiam River.

- ***Roadway shoulders****:* Roadway shoulders serve as pedestrian routes in many rural Oregon communities. On roadways with low traffic volumes (i.e., less than 3,000 vehicles per day), roadway shoulders are often adequate for pedestrian travel.[7] These roadways should have shoulders wide enough so that both pedestrians and bicyclists can use them, usually 6 feet or greater. Pedestrians seeking to access the downtown core in Idanha currently rely on roadway shoulders to accommodate their travel. Both eastbound and westbound shoulders of OR 22 through Idanha are paved, but vary in width through the study area. In general, foglines have faded significantly. The segment of OR 22 including the downtown of Idanha (approximately

[7] Average Daily Traffic (ADT) along OR 22 through Idanha was recorded at approximately 3,400 between 1998-2002. (Source: ODOT Crash Analysis Unit)

MP 54.28 to 54.80) has 4-foot shoulders on the north and south sides of the highway, with a short segment of 6-foot shoulders on the north side.

- ***Crosswalks:*** There are currently no pedestrian crosswalks in Idanha. There used to be a painted crosswalk across OR 22, but it was removed per ODOT policy related to pedestrian safety on state highways.
- ***Traffic control:*** OR 22 through Idanha is not stop-controlled and is unsignalized. Currently, there are no pedestrian/bicycle traffic control measures in place along OR 22. Public approach roadways to OR 22 have stop signs.
- ***Informal paths:*** There are several informal paths located on undeveloped land parallel to OR 22 in Idanha. Examples of this can be seen alongside eastbound OR 22 just west of Main Street and just east of Church Street.

Bicycle Facilities

Bicycles are allowed on all of the roadways in Idanha and the surrounding areas. According to AASHTO's *Guide for the Development of Bicycle Facilities* (1999) and the *Oregon Bicycle and Pedestrian Plan* (1995), there are several different types of bicycle facilities. Bicycle facilities are an indicator of a community's health and attractiveness to residents and visitors, in particular the young and elderly. Bikeways, such as striped bicycle lanes or signed bikeways, are distinguished as preferential roadways that have facilities to accommodate bicycles. Shared use paths are facilities separated from a roadway for use by cyclists, pedestrians, skaters, runners, or others. Shared use paths were discussed previously in the overview of pedestrian facilities located in the city of Idanha.

Currently, there are no dedicated (striped) bicycle lanes or signed bikeways in the study area.

The following bicycle facilities are found in Idanha:

- ***Shoulder bikeway:*** Shoulder bikeways are paved roadways that have striped shoulders wide enough for bicycle travel. ODOT recommends a 6-foot paved shoulder to adequately provide for bicyclists; 4-foot minimum in constrained areas. Roadways with shoulders narrower than 4 feet are considered shared roadways. Sometimes shoulder bikeways are signed to alert motorists to expect bicycle travel along the roadway. As mentioned previously, OR 22 has paved shoulders of varying width in the city of Idanha. Consequently, in terms of their functionality for bicyclists, some sections of the highway would be considered "shoulder bikeway" and others "shared roadway." Many of the paved shoulders along OR 22 are covered with gravel from adjacent parking areas and pullouts, detracting from their suitability and safety for bicycling.
- ***Bicycle parking facilities*** encourage cyclists to stop at destinations such as businesses and public facilities. Secure, well-designed bicycle parking helps prevent theft. Currently, bicycle parking is provided outside the grocery store in Idanha.

Pedestrian and Bicyclist Destinations

Major pedestrian and bicycle destinations located in Idanha are as follows:

- **City Hall**—Located along OR 22, the Idanha City Hall building provides all city administrative services and also contains a city library. There is a rough concrete pathway traversing the front of City Hall property.

- **School bus stop**—Idanha is part of the Santiam Canyon School District (K-12). Students catch school buses at the southeast corner of OR 22 and Main Street. There is a bus shelter at this location but there are no pedestrian or bicycle facilities at or to this location.
- **Parks**—Idanha City Park is located east of Church Street, on the south side of the river. The park does not have any pedestrian or bicycle facilities fronting its property.
- **Shopping**—The grocery store in Idanha, located along OR 22, does not have any pedestrian or bicycle facilities connecting to its property. The store has a bicycle rack that can accommodate approximately 4 or 5 bicycles.

Transit Facilities

Chemeketa Area Regional Transportation System (CARTS)

The CARTS program is a partnership between Marion, Polk, and Yamhill counties. CARTS operates a regional point-deviated, fixed-route service in south Marion County called the "Canyon Connect". CARTS does not currently provide service to Idanha. The closest Canyon Connect bus route stop is at the Gates Park and Ride, roughly 22 miles to the west. CARTS services to rural Marion County are carried out by Wheels Community Transportation.

Cherriots

The Salem Area Mass Transit District (Cherriots) does not currently provide service to Idanha. The closest transit stop to Idanha is bus route #6, which stops at Lancaster and Carson in southeast Salem. Cherriots connects with CARTS/Wheels Community Transit to provide rider flexibility.

Dial-A-Ride Services

Wheels Community Transportation provides dial-a-ride services to all Marion County residents, including Idanha. Service is available to those individuals in need of transportation for medical appointments, employment, education purposes, and nutritional shopping. In addition, service is provided for persons receiving medical assistance in Portland.

Wheels of Joy provides dial-a-ride services to North Santiam area residents, including Idanha, requiring special assistance transportation to and from medical facilities throughout the region.

Rail Facilities

There are no passenger or freight rail facilities located within the city of Idanha.

City-Identified Transportation System Issues

There are several transportation issues that the City has identified, as listed below.

- Speeding on OR 22: the City and law enforcement officials (Marion County Interagency Traffic Team) have noted that motorists frequently exceed the posted speed limit through the city center of Idanha, where the current posted speed is 40 miles per hour. The painting of double-yellow center lines has helped some, but speeding remains an issue of concern.
- Lack of pedestrian and bicycle facilities on OR 22: conditions are unsafe for pedestrians and bicyclists traveling from the south side of OR 22 to use services located on the north side of the highway in the city center.

- Poor sight distance on OR 22 at Church Street: the City has noted that poor sight distance conditions exist (possibly resulting from a combination of horizontal and vertical grade curvature).
- Highway motorists using shoulders to pass other vehicles: City officials have reported that motorists, including large trucks, pass other vehicles on the right on the OR 22 segment through the city. This situation is a safety concern for pedestrians using city center services, in particular for children waiting for school buses.

Field-Team-Identified Transportation System Issues

Additional general transportation system issues identified during a field visit to Idanha include:

- Inadequate spacing between highway access approaches;
- Lack of access control in city center; and
- Inadequate shoulder widths along segments of OR 22.

Land Use Inventory

The study area covers the heart of the city and includes most lands that abut OR 22. It includes roughly half of the total acreage in the city. The land use inventory relied on information contained in the City's Comprehensive Plan (February 2002) and in the City's Development Code, as well as information from the Marion and Linn county GIS databases.

Existing Land Uses

General existing land uses in Idanha are depicted in Figure 6. Land use districts in the city of Idanha are as follows:

- Commercial (C)
- Commercial-Recreation (C-R)
- Industrial (I)
- Light Industrial (LI)
- Public (P)
- Residential (R)
- Restricted Development Overlay (RD)

The City's Urban Growth Boundary (UGB) was established in 1978 and modified in 1993. The land supply within the Idanha UGB is estimated at 406 acres (including right-of-way and water bodies). Table 8 summarizes the land supply in Idanha by general land use category; some of the comprehensive plan categories have been combined for simplicity.

Residential Land Uses

The Comprehensive Plan map designates approximately 200 acres of land as residential, which includes the Residential (R) zoning designation. Most residential land is outside the study area on the south side of the Santiam River. Residential land in the study is located south of OR 22 toward the west end of town clustered along Main Street. A portion of the R-zoned land west of Main Street has a Restricted-Development (R-D) overlay because there are steep slopes and a flood hazard that is within roughly 50 feet of the high water line of the North Santiam River. There are a few R-zoned parcels located north of OR 22 across from Main Street.

TABLE 8
2000 Summary of Land Supply

Comprehensive Plan Designation	Vacant Land (acres)	Developed Acres (conforming uses)	Developed Acres (non-conforming uses)	Total Land (acres)
Residential	160	24	16	200
Commercial	66	81	4	151
Industrial	27*	7	1	35
Public	1	1	1	3
School/Park	0	4	0	4
Other	0	13	0	13
TOTAL	**254**	**130**	**22**	**406**

* Includes a 16-acre site that has received approval for the construction of an RV park (T10-R6e-17B T.L. 1000).

The Residential (R) zoning district allows single family dwellings (including manufactured homes) and duplexes outright, as well as a broad range of residential-related uses, such as home businesses, day care, public utilities, and parks. "Transitional" uses, which include churches and community buildings, are permitted outright when they abut an industrial or commercial property. Conditional uses include churches, multi-family dwellings, and golf courses, among others.

Commercial Land Uses

Approximately 151 acres of land in Idanha are zoned either Commercial (C) or Commercial Recreation (CR). The Comprehensive Plan estimates that 85 acres of Commercial land are developed and 66 acres are vacant, although many "developed" parcels in reality are not developed entirely to capacity because of the need for on-site septic drainfields. It is unclear from the Comprehensive Plan whether or not these acreage figures include the Commercial-Recreational (CR) zoning designation. The CR-zoned land extends from Boulder Creek to the west end of town along OR 22 and is outside the study area. Most of the C-zoned land is inside the study area.

The CR zone is intended for tourism-oriented uses such as bed and breakfasts, marinas, and souvenir/gift shops. The C-zoned land is found on both sides of OR 22 starting near its intersection with Main Street. Both districts have specific development and design standards related to building orientation, siding materials, and other architectural and siting details. In general the C zone allows a broader range of retail and office commercial land uses than the CR zone.

Industrial Land Uses

According to the 2002 Idanha Comprehensive Plan, eight of the 35 total Industrial-zoned acres in Idanha are developed, leaving 27 acres of I-zoned land vacant. Similar to the existing commercial land use section, it is not clear in the Comprehensive Plan whether this includes acres in the Industrial (I) as well as the Light Industrial (LI) zone. The Comprehensive Plan includes no specific information about LI-zoned land.

The majority of the industrial land is located on the east side of Idanha and is in the study area. Large parcels of I-zoned property abut the north side of OR 22 from near Church Street east to the city limits. Most of the LI-zoned property is on the opposite side of OR 22, between the road and

the north bank of the Santiam River. A single parcel of LI-zoned land is located outside the study are near the west end of Idanha. The I zone allows heavy manufacturing and wood products facilities. The LI zone allows a more limited set of industrial and commercial uses.

Public Land Uses

Idanha has one Public (P) zoning district, which includes approximately 2 acres of land in the study area. The P-zoned parcels are located in the southeast part of the city near the residential area adjacent to the Santiam River. Allowed uses in the P zone include publicly-owned buildings and facilities, public outdoor recreation facilities, public utility structures and buildings, schools, hospitals, and civic organizational facilities.

5. Future Transportation and Land Use Conditions

Introduction

Along with examination of existing transportation and land use conditions, it is important that planning efforts take into account future population, employment, and traffic forecasts. This results in efficient spending of public dollars; if transportation improvements account for the future, they are not likely to face the immediate need to be rebuilt. The analysis of future traffic operations for the Idanha area showed that there are no expected operational deficiencies during the peak hour at least until 2030, based on the Idanha Comprehensive Plan and ODOT-approved traffic growth projections. The buildable land analysis showed that there is sufficient land within the City's urban growth boundary to accommodate estimated land use needs for the next 20 years.

Attachment 5 includes an analysis of the potential for siting a left turn lane at the Main Street/ OR 22 intersection. Although this location does not currently meet *Highway Design Manual* criteria for siting a left turn lane, this could change in the future if access spacing is implemented or if development occurs near the intersection (e.g., the vacant parcel to the southeast). The City of Idanha should monitor these conditions for triggering re-evaluation of a left turn lane at this location, and should require new development near this intersection to submit a traffic impact analysis.

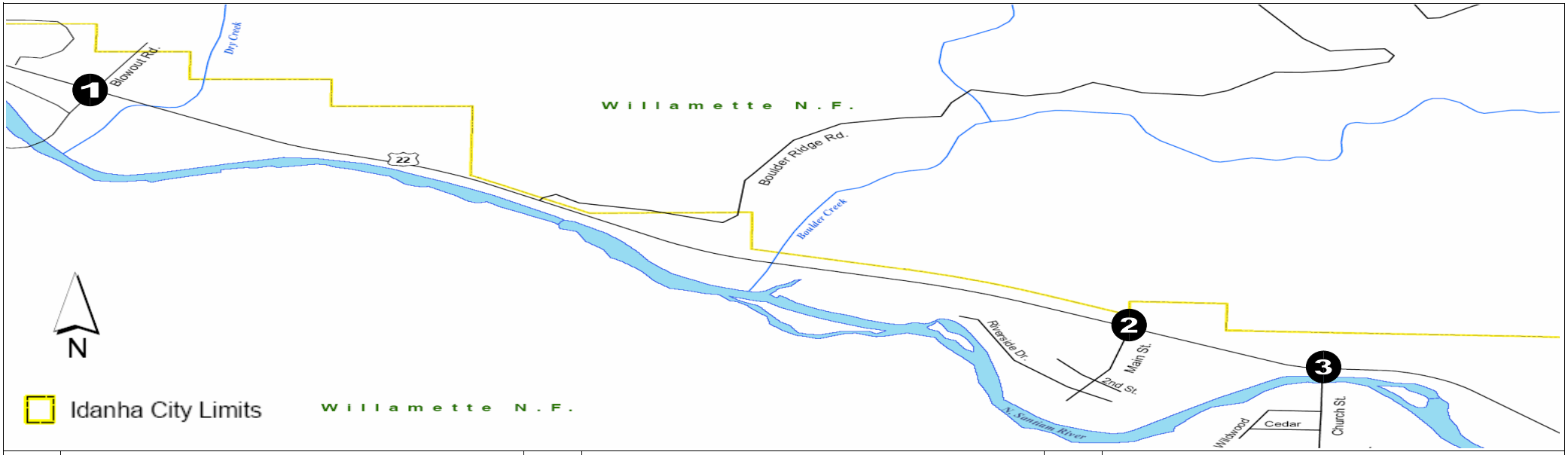
Future Traffic Operations Conditions – OR 22

Future operational analysis was conducted to determine if the Idanha area can expect traffic operations in year 2025 to require roadway improvements. The analysis was completed assuming that no operational roadway improvements on OR 22 would be made between 2005 and 2025 ("no-build"). No future operational deficiencies were found at the study area intersections.

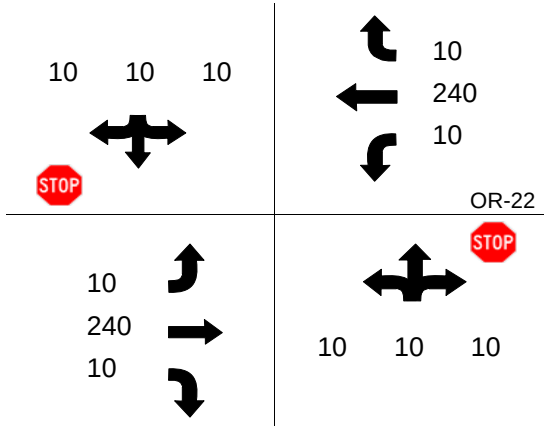
Future (2025) No-Build Operational Analysis

Future (2025) no-build V/C ratios were computed for all three study intersections (OR 22/Blowout Road, OR 22/Main Street, OR 22/Church Street) based on projected 30th highest hour design volumes. Future volume tables provided by ODOT were used to determine the expected background traffic growth rate of 2.0 percent per year, which was approved by ODOT. The future traffic volumes are consistent with the expected employment and population growth as identified in the Idanha Comprehensive Plan (2002). This growth rate was applied for 20 years to the balanced 2005 30th highest hour design volumes to obtain the 2025 projected design volumes, as shown in Figure 7.

Table 9 shows these results and compares them to the applicable roadway mobility standards. The results of the Future (2025) no-build operational analysis show that each intersection approach meets the applicable mobility standard and continues to operate well. Therefore, there are no operational improvements required as part of the alternative development process of this project.

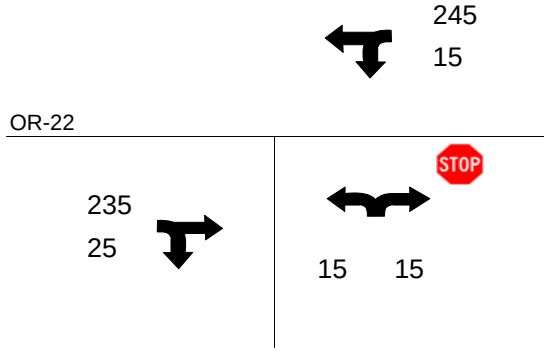


1 Blowout Road and OR-22



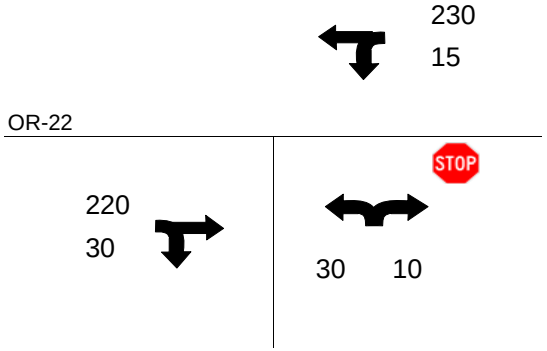
Major Street V/C Ratio: 0.23 Minor Street V/C Ratio: 0.33

2 Main Street and OR-22



Major Street V/C Ratio: 0.21 Minor Street V/C Ratio: 0.11

3 Church Street and OR-22



Major Street V/C Ratio: 0.18 Minor Street V/C Ratio: 0.20

LEGEND

25 → 2025 PM Peak Hour Traffic Volumes

2 Intersection Number

Existing Lane Channelization

Note: All V/C ratios are less than the Oregon Highway Plan mobility standards.

Figure 7

2025 No Build PM Peak Traffic Operations

Idanha Transportation Study

CH2MHILL

TABLE 9
Future No-Build Intersection Analysis Summary - 2025 Projected 30th Highest Hour Design Volumes

Intersection	OR 22 Approaches		Cross Street Approaches	
	V/C Ratio	Mobility Standard	V/C Ratio	Mobility Standard
OR 22 at Blowout Road	0.21	0.70	0.11	0.85
OR 22 at Main Street	0.18	0.75	0.20	0.85
OR 22 at Church Street	0.23	0.75	0.33	0.85

Note: Results are reported for the movement with the highest V/C ratio.

Future Land Use Conditions

Future land use conditions in Idanha are based on the land use inventory described in the previous section, which is based on information contained in the City's Comprehensive Plan (February 2002) and in the City's Development Code, as well as information from the Marion and Linn county GIS databases.

The description of future land use conditions focuses on the following issues in the Idanha study area:

- Proposed land uses
- Buildable lands estimate
- Population and employment forecasts for Idanha
- Industrial, commercial, and residential lands needs

Proposed Land Uses

According to the Comprehensive Plan, attracting tourism to Idanha depends on developing visitor services and facilities. The Commercial-Recreation and Light Industrial land use zones were added to the Comprehensive Plan land use map in 1997 for this purpose.

The City developed a Downtown Master Plan in 1998 that focused on an 88-acre area along OR 22 between Boulder Creek and Church Street. This plan has never been formally adopted, and though portions of it are consistent with the Comprehensive Plan long-range concept for the city, there are elements of the Downtown Master Plan that are not supported by the City (e.g., closing off Main Street from OR 22).

The vision for the Downtown Master Plan includes "…architectural features that complement the natural landscape…and a healthy balance between a wide diversity of activities and land uses." In terms of land use, one of the goals for the downtown is to "…develop as a multi-purpose center by permitting a diversity of uses…that will serve the needs of local residents, visitors and recreationists."

The Downtown Master Plan recommends that the city create an attractive place for OR 22 traffic to stop and shop, while providing services for local residents, allowing a mix of commercial, industrial, and residential development (the latter two with categories limitations). It should be noted that the City has requested that all planning improvements for the Idanha Transportation

Study be done in accordance with their Comprehensive Plan, rather than with the recommendations of the Downtown Master Plan.

Buildable Lands

The buildable lands inventory (BLI) and analysis was summarized from the 2002 *Idanha Comprehensive Plan* for the area within Idanha city limits. The BLI determines whether there is sufficient land in the city's UGB to accommodate estimated housing needs for 20 years. A land needs assessment is included in the next section. According to the City, certain factors limit the availability of developable lands within the UGB. These include reliance on septic systems for wastewater treatment/lack of a sewer system, steep slopes which limit septic approval, flood hazards, wetlands, and riparian corridors. Table 10 shows the gross vacant acres by general land use category.

TABLE 10
Buildable Lands Worksheet

Plan Designation	Gross Vacant Acreage
Residential	160
Commercial	66
Industrial	27*
Public	1
Schools	0
TOTAL	**254**

Note: The actual land use map includes more specific land use designations.
* An additional 16-acres are committed to an RV park.

Population and Employment Forecasts

The *Oregon Blue Book* lists the 2002 population of Idanha as 232. In 1996, the City Council adopted the population projections as shown in Table 11, which reflect an overall 0.75 percent increase between 1995 and 2015. The population forecast for 2015 is 337 persons, based on a 1994 population forecast prepared by Portland State University. This figure has been accepted by Marion County for their growth management forecasts. According to the *Idanha Comprehensive Plan*, population growth is linked to available employment opportunities. Timber has historically been the backbone of Idanha's economy. Since the 1980s, the closure of remaining local mills has led to declining population.

The City has projected for three different population categories, "full-time", "part-time" and "visitors," which make up "total" population. A 2.0 percent growth rate was used to ascertain the "part-time" and "visitors" population, based on a projected population growth rate for the 1996 Upper North Santiam Canyon Regional Sewer System Feasibility Study. The rationale for this was that the North Santiam Canyon region is attempting to increase tourism, which would lead to a larger overall seasonal population and greater demand on any proposed sewer system. The City's Comprehensive Plan allows for this with land along the river designated for "Commercial Recreation" uses.

TABLE 11
Projected Idanha Population

Year	Full-time Population [Increase (0.75%)]	Part-time Population [Increase (1.5%)]	Visitors Population [Increase (2.00%)]	Total Population
1995	290	100	500	890
2000	295	110	550	955
2005	300	115	610	1,025
2010	300	125	675	1,100
2015	305*	135	745	1,185

* This figure does not reflect the adopted City and Marion County projection of 337; the difference of 32 people is inconsequential.

Source: 1996 North Santiam Canyon Regional Sewerage System Feasibility Study, Curran-McLeod Inc.; City of Idanha Population Projections.

Industrial, Commercial, and Residential Land Needs

The future land needs assessment for industrial, commercial, and residential uses is based upon trends and projections for population growth, economic development, and the calculation of acreage of land needed to support that population. The 2002 Idanha Comprehensive Plan includes "Land Needs Assessments" for these land use categories.

Industrial Land Needs

A modest level of growth in the industrial sector is projected for Idanha. Given that the availability of utility infrastructure and transportation facilities is limited in Idanha, the Comprehensive Plan envisions small tracts of industrial land for small manufacturing and production facilities that are compatible with these systems. The following Industrial lands needs assessment is based on the City's 2015 "full-time" projected population of 337 persons. As shown in the following table, the projected need for industrial land to meet the needs of the projected growth in permanent population is less than 2 acres.

TABLE 12
Industrial Land Needs Analysis (2015)

Projected Full-Time Population 2015	Land Ratio (acres/person)	Net Land Needed (acres)	Land Available for Development 1998 (acres)	Surplus/Deficit of I Land (acres)
337	0.004	1.4	45	+43

The Comprehensive Plan was updated in 1997 to include a Light Industrial zoning district to allow for less intense industrial operations that can be conducted within enclosed spaces. Uses in this zone are subject to strict design standards that would be compatible with adjacent commercial and residential areas.

Commercial Land Needs

The following commercial land needs assessment is based on the "total" projected 2015 population of 1,185 persons, which includes "full-time residents," "part-time residents," and "visitors."

TABLE 13
Commercial Land Needs Assessment (2015)

Projected "Total" Projected Population	1,185
Commercial Land Ratio per person	0.127
Land Needed	10.6 acres
Land Needed w/ 5% Vacancy Rate	11.2 acres
Available Zoned Commercial Land	66 acres*
Commercial Zoned Land Need	0 acres

* Excludes land containing non-conforming uses.

There are 66 acres of Commercial land available in Idanha. The commercial land needs assessment reveals that at this time, the City does not need any more Commercial zoned land. In 1997, the City added a Commercial-Recreation zone that consists of acreage on the west side of town along the Santiam River. The purpose of this zone is to allow a broader range of tourism-oriented uses with corresponding design standards to permit more commercial and recreation development.

Residential Land Needs

Approximately 200 acres within the Urban Growth Boundary are designated Residential on the Idanha Comprehensive Plan map. It is estimated that 40 acres are developed. The remaining 160 acres are vacant. The City's Residential designation permits both single-family and multi-family residential development. The amount of land indicated on Table 15 that is available for development is based upon the 1996 Comprehensive Plan designations. According to the table, the City has a surplus of 104 acres of Residential land for both single-family and multi-family residential development. The existing supply of Residential land within the Urban Growth Boundary is sufficient to accommodate the projected number of housing units for 2015.

TABLE 14
Projected New Housing Supply by Type to 2015

Type	% of Housing Units by Type	No. of Needed Units	Permitted Density (du/acre)*	# of Needed Acres
Single Family	90%	30	4	7.5
Multi-Family	10%	3	10	0.5
TOTALS		**33 Units**		**8.0**

*du = dwelling units

TABLE 15
Residential Land Requirements

	Acres Needed	Net Acres Available	Surplus + / Deficit -
Residential	8	112	+104

6 Analysis of Options

Framework for Options Analysis

The analysis of options or concepts for the Idanha Transportation Study was a collaborative, iterative process that involved extensive input from PMT members. Concepts were developed based on deficiencies revealed in the analysis of existing and future transportation conditions, and refined through PMT evaluation and discussion.

Transportation Issues

Based on examination of existing and future transportation conditions, field visits, and discussions with the PMT, the following primary transportation issues were identified in Idanha:

- Speeding on OR 22
- Lack of pedestrian and bicycle facilities, particularly along OR 22
- Lack of roadway edge definition
- Lack of roadway design or treatments indicating a "sense of place"
- Perception of unsafe pedestrian and bicyclist conditions along OR 22, including crossing OR 22, especially near Main Street
- Children accessing and waiting at the bus shelter near Main Street/OR 22
- Lack of defined access points through the middle of town and inadequate access spacing
- Lack of internal roadway circulation network south of OR 22
- Inadequate shoulder widths on OR 22
- Sight distance discomfort at OR 22/Church Street

It is worth noting that examination of existing and future (no-build) transportation conditions revealed no significant crash or traffic operations issues.

Local Values and Concept Development

The analysis of options primarily focused on the central portion of Idanha, along the OR 22 corridor between the western edge of the vacant parcel located southwest of the Main Street/OR 22 intersection and the Church Street/OR 22 intersection. This portion of the OR 22 corridor is notable for its lack of access control. Because it is the focal point of town—it includes City Hall, the post office, and the general store—it is the location with the most pedestrian traffic. It is most logical to concentrate on this portion of town first, because of its importance to the community and because many of the transportation issues were noted within this area.

Based on the identified issues, the analysis of transportation options began with a focus on discouraging speeding and improving the pedestrian and bicycle facilities in the center of town, including implementing access management. Any formal pedestrian facility along OR 22 (such as a

sidewalk) would require access control due to basic design principles (a pedestrian facility cannot function if it is allowing free access), and any significant improvement within ODOT right-of-way would need to work toward meeting accepted ODOT standards for access spacing and control.

As the study continued, the PMT focused on options and concepts for facilities that would improve pedestrian and bicycle safety without affecting access, as well as roadway and transportation elements that would reflect a sense of community character for Idanha (e.g., gateways) to communicate a sense of place. These improvements would also discourage speeding.

The PMT discussed concepts in terms of the project goals set at the beginning of the project. However, it soon became apparent that in addition to the community values expressed through the project goals, other parameters were also important for Idanha.

Primary concerns for the community as expressed through the PMT, especially with regard to the transportation system, included (1) a perception of safety issues – specifically, speeding and pedestrian safety along OR 22; and (2) a lack of streetscape or roadway treatments that communicated a "sense of place" for Idanha.

Community goals related to the evaluation of alternatives included a strong desire to maintain economic development opportunities, especially in the central portion of the city. The benefits of enhancing the OR 22 corridor (for example, adding sidewalks) were not deemed worth the cost of the changed access to businesses or frontage property, since these changes were believed to have adverse impacts on economic vitality and development.

Other issues included the strong desire to maintain OR 22 access at Main Street and at Church Street, a need for OR 22 frontage properties to accommodate WB-67 trucks (semi trucks with 53-foot box trailers), and the need to accommodate snow removal and other impacts of snowfall.

Concept Development

ODOT Access Spacing Standards

Development of concepts for the OR 22 corridor began with a review of ODOT recommended access spacing standards. Figures 8 and 9 show how accesses would need to be configured to meet ODOT access spacing standards, given the retention of Main Street and Church Street as access points. As shown, per strict ODOT standards, all accesses would need to be closed between Main Street and Church Street. This would mean that all properties would need to be accessed via frontage roads or linked property connections. The figures also show how a roadway section could look given this type of access configuration.

The PMT believed that strict adherence to the ODOT spacing standards was impractical for the community, given that the accesses to some of the primary economy generators in Idanha are located within this segment, including the Torman Company on the south side of OR 22 and the general store located north of OR 22. Later on, conceptual drawings were made that examined how WB-67 trucks would access existing land uses along OR 22 given access only at Main Street and Church Street. The truck wheel paths showed that all of the properties located between Main Street and the existing grocery store would have to be used as a truck turn-around area, which appeared to be an unreasonable solution. Therefore, the next iteration of concepts examined the possibility of seeking deviations to ODOT spacing standards.

Idanha Transportation Study

Figure 8
ODOT Access Standards
Idanha, Oregon

ACCESS

NOTE: Location and spacing of access points is shown to demonstrate minimum spacing (per ODOT). Measurements are approximate, and do not indicate actual placement of access locations.

Phase 2
Phase 1
Phase 3
City Hall
Post Office
Grocery Store
Church
ACCESS
54
54.25
54.5
54.75
55
55.25
RIVERSIDE DR
MAIN ST
3RD ST
WILDWOOD AV
CEDAR AV
CHURCH ST
SHORT ST
WILLOW ST
MOUNTAIN AV
RIVER RD
EVERGREEN AV
DOUGLAS ST
MT JEFFERSON ST
SANTIAM HY
North Santiam River

Note: Project Phase Lines are from work done at the beginning of the project.

Speed Limit

50 mph	40 mph	50 mph
MP 54.08		MP 55.05

Legend

- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- UGB
- Idanha City Limits

N

300 0 300 600 Feet

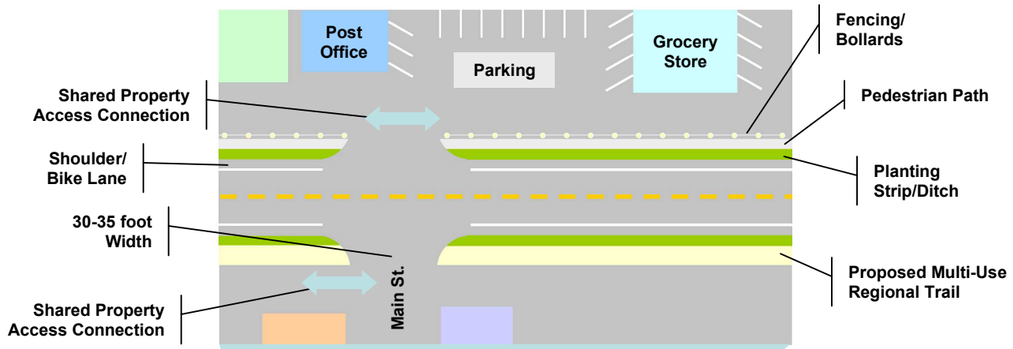
CH2MHILL

File Path: \\Rosa\proj\ODOT\323187\gis\mxds\figures\Figure_2_access-points.mxd, Date: January 13, 2005 11:28:18 AM

Idanha Transportation Study

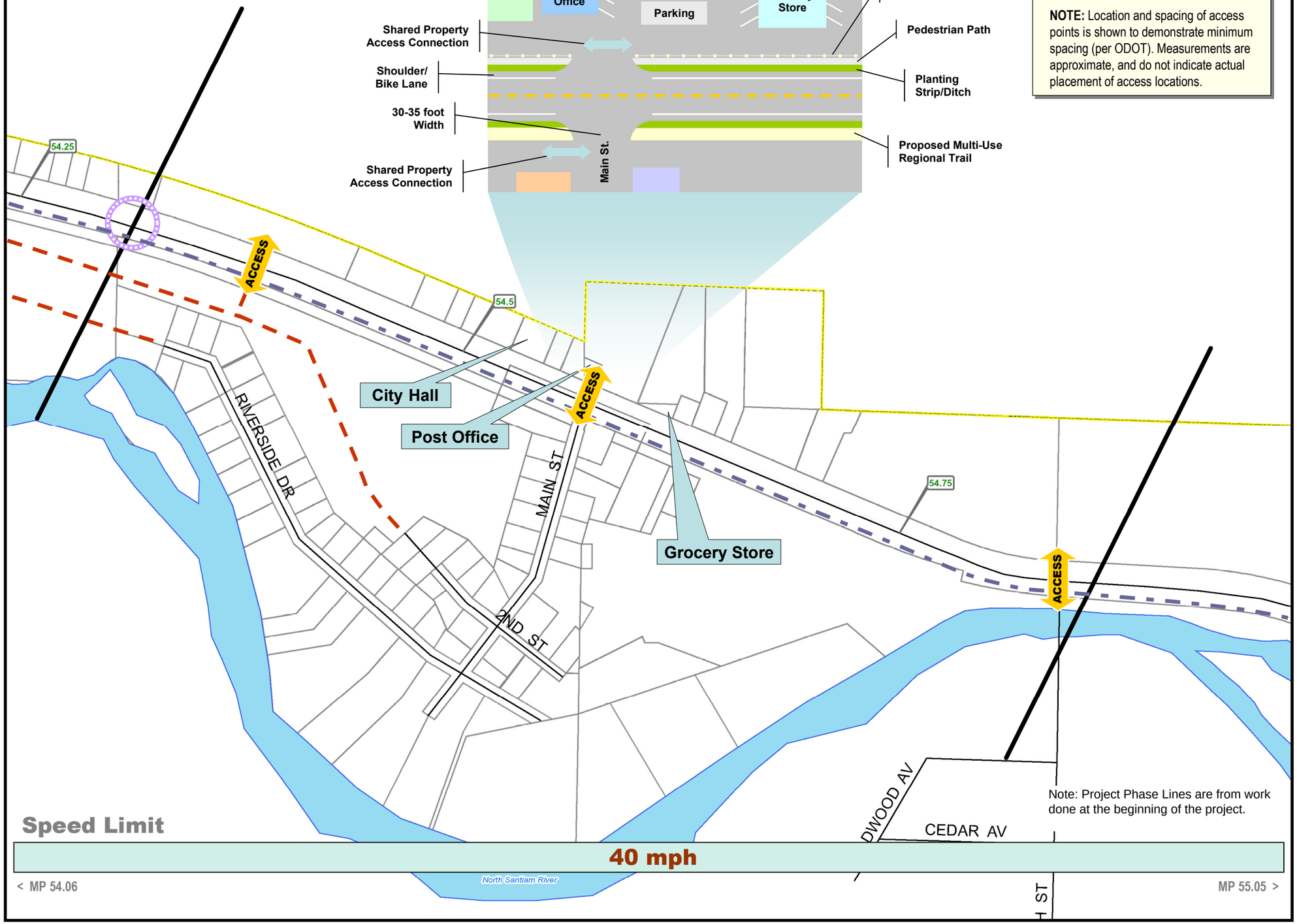
Figure 9
Access & Section (ODOT Standards)
Idanha, Oregon

Proposed Section



ACCESS

NOTE: Location and spacing of access points is shown to demonstrate minimum spacing (per ODOT). Measurements are approximate, and do not indicate actual placement of access locations.



Note: Project Phase Lines are from work done at the beginning of the project.

Speed Limit

40 mph

< MP 54.06 MP 55.05 >

Legend

- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- UGB
- Idanha City Limits
- Potential Gateway Location
- Proposed Multi-Use Regional Trail
- Potential Road Connections

N

150 0 150 300 Feet

CH2MHILL

File Path: \\Rosa\proj\ODOT\323187\gis\mxds\figures\Figure_2_access-points.mxd, Date: January 13, 2005 11:28:18 AM

Potential Access Control Locations

The next iteration of concept development was predicated on a good faith effort to work toward meeting ODOT access spacing standards. Again, access configuration assumed the retention of Main Street and Church Street as access points. Figure 10 shows this revised access control configuration. Deviations were shown located east of Main Street (entrances to Torman Company on the south and grocery store on the north) and located west of Main Street (entrances to City Hall on the north and vacant parcel on the south). The figure also shows how a roadway section could be designed given this type of access configuration.

The proposed access configuration and roadway section were then examined with regard to how vehicles would physically access the properties and resultant property impacts.

Potential Access Concepts

The next iterations of concept development were based on the access spacing and roadway section discussed previously under Potential Access Control Locations. Access configuration assumed the retention of Main Street and Church Street as access points. Specific attention was given to how WB-67 trucks could access existing properties from the proposed access points, given existing building locations and property lines. Accesses that can accommodate WB-67 trucks can accommodate virtually any other type of vehicle because the wheelbase path is so wide. The grocery store and Torman Company are serviced by WB-67 trucks, and the PMT believed it was important for the properties fronting OR 22 to retain direct serviceability by these vehicles.

The resultant concepts explored truck access options at the different access locations between Main Street and Church Street. Figures 11-13 show different options for truck access and circulation at the proposed access points. The figures show rough sketches of right-of-way, building locations, and truck wheel paths to demonstrate land impacts.

Figure 11 shows circulation north of OR 22 to access the existing grocery store. In this concept, trucks turn into the grocery store driveway, drive behind the store, travel along a shared property connection, and exit at Main Street. The concept shows distinct property impacts to the east and west of the grocery store. The intersection at Main Street is modified so that vehicles would square up with OR 22 for a safe turn. Advantages of this concept are that it would allow for parking on the east side of the store building or allow for a public parking lot. Primary disadvantages include land impacts to several parcels, which could preclude future development; a need for hillside retention behind the store to allow for truck access; potential impacts to the existing septic system; and the mixing of cars and trucks through a shared access across private property.

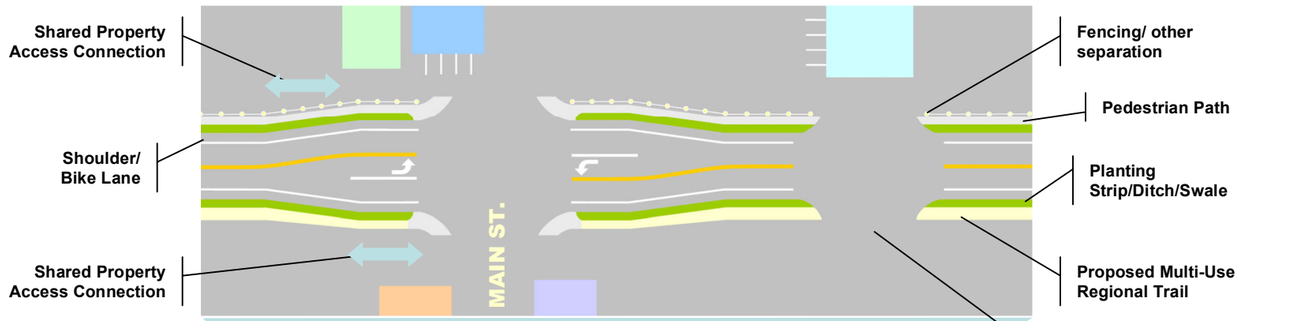
Figure 12 also shows circulation north of OR 22 to access the existing grocery store. In this concept, trucks turn into the grocery store driveway, but the land to the east of the store has been acquired for a truck turn-around area/parking lot. The concept directly impacts those parcels to the east of the store, but does not affect any parcels to the west of the store. Advantages of this concept are that it uses a conventional layout and consolidates truck maneuvers; trucks enter and exit the access with good sight distance; and trucks are kept off a shared property access. Primary disadvantages include land impacts; potential conflicts with other vehicles using a shared private property connection; and issues with truck delivery once other properties along OR 22 develop.

Figure 13 shows circulation south of OR 22 to access Torman Company (industrial land uses). In this concept, trucks turn south to access the site and, potentially, would use a gated access located further east if necessary. Smaller vehicles accessing the commercial land between Main Street and

Idanha Transportation Study

Figure 10
Revised 3-17-2005
Potential Access Deviations
Idanha, Oregon

Proposed Roadway Layout



Legend

- Roads
- Streams and Creeks
- Rivers/Streams/Ponds
- Tax lots
- UGB
- Idanha City Limits
- Potential Gateway Location
- Proposed Multi-Use Regional Trail
- Potential Road Connections
- ACCESS Existing Public Access
- ACCESS Proposed Access
- L Local Access
- F Fire Station Access (Restricted)

N

150 0 150 300 Feet

CH2MHILL

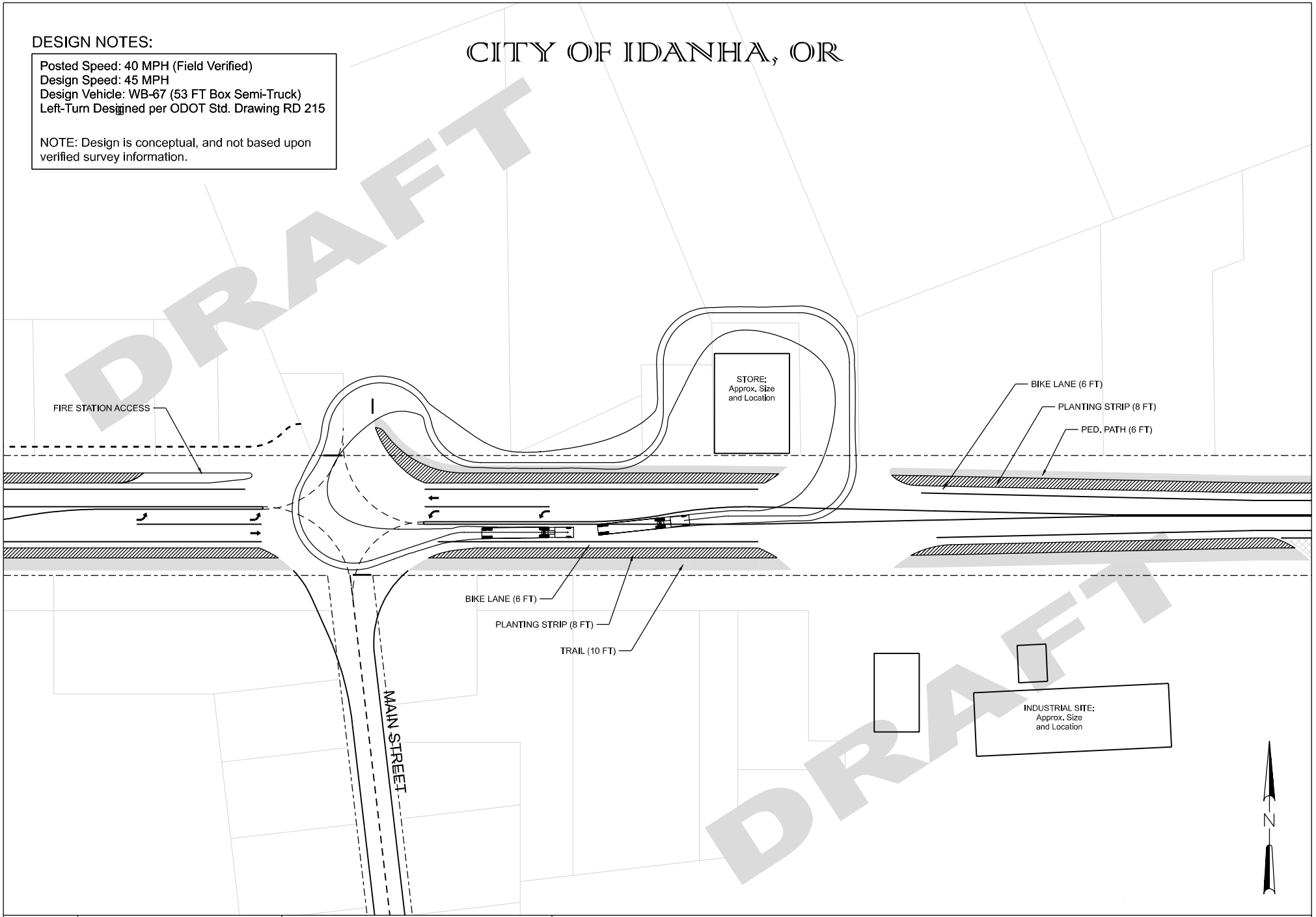
File Path: \\Rosa\proj\ODOT\323187\gis\mxds\figures\Figure_2_access-points.mxd, Date: January 13, 2005 11:28:18 AM

DESIGN NOTES:

Posted Speed: 40 MPH (Field Verified)
Design Speed: 45 MPH
Design Vehicle: WB-67 (53 FT Box Semi-Truck)
Left-Turn Designed per ODOT Std. Drawing RD 215

NOTE: Design is conceptual, and not based upon verified survey information.

CITY OF IDANHA, OR



LEGEND
- PLANTING STRIP (8 FEET)
- MUTI-USE PATH (10 FEET)
- PEDESTRIAN PATH
- ROW LINE
- PARCEL BOUNDARY LINE

SCALE
0 50 100 150
1" = 100 FT

Figure 11. North Access Circulation Concept #1

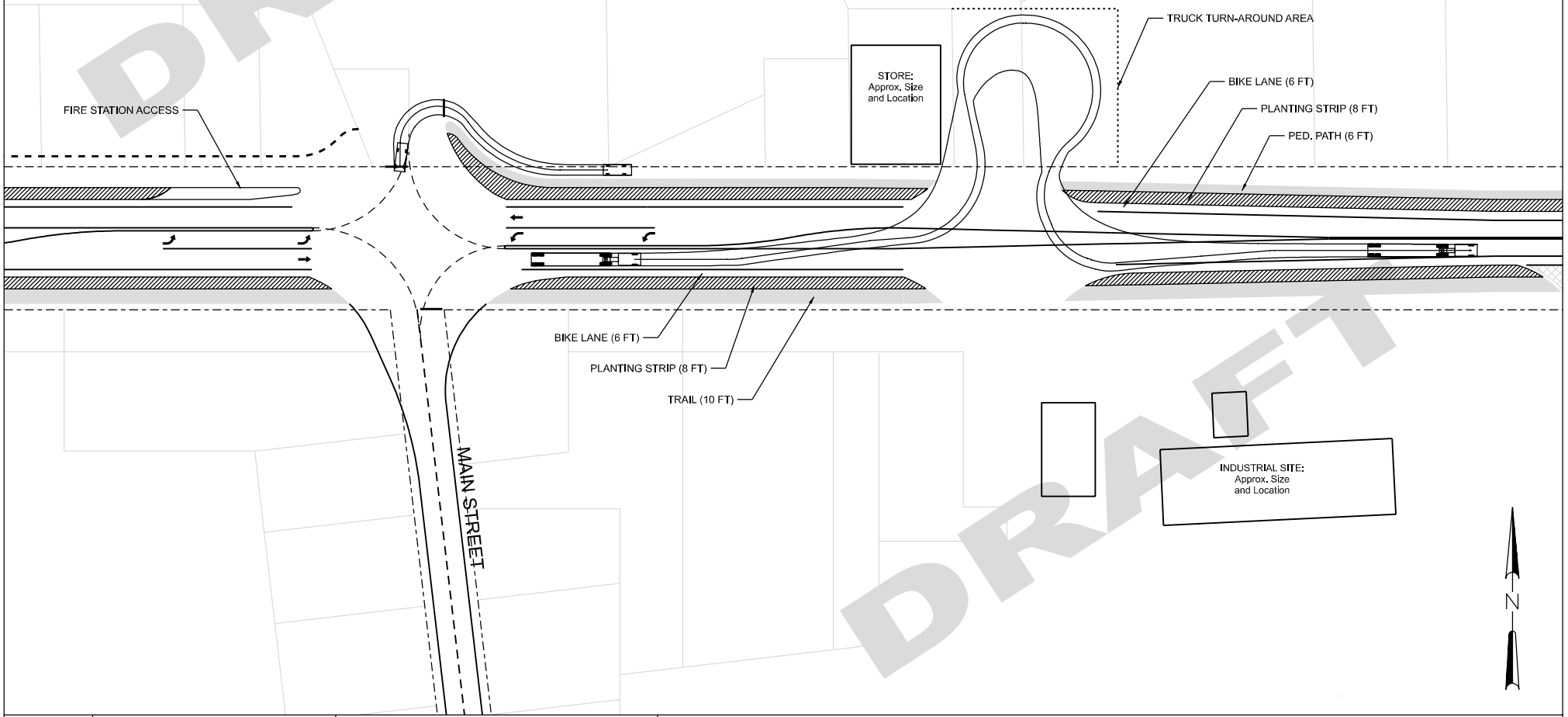
CH2MHILL

CITY OF IDANHA, OR

DESIGN NOTES:

Posted Speed: 40 MPH (Field Verified)
Design Speed: 45 MPH
Design Vehicle: WB-67 (53 FT Box Semi-Truck)
Left-Turn Designed per ODOT Std. Drawing RD 215

NOTE: Design is conceptual, and not based upon verified survey information.



LEGEND

- PLANTING STRIP (8 FEET)
- MUTI-USE PATH (10 FEET)
- PEDESTRIAN PATH
- ROW LINE
- PARCEL BOUNDARY LINE

SCALE

0 50 100 150

1" = 100 FT

Figure 12. North Access Circulation Concept #2

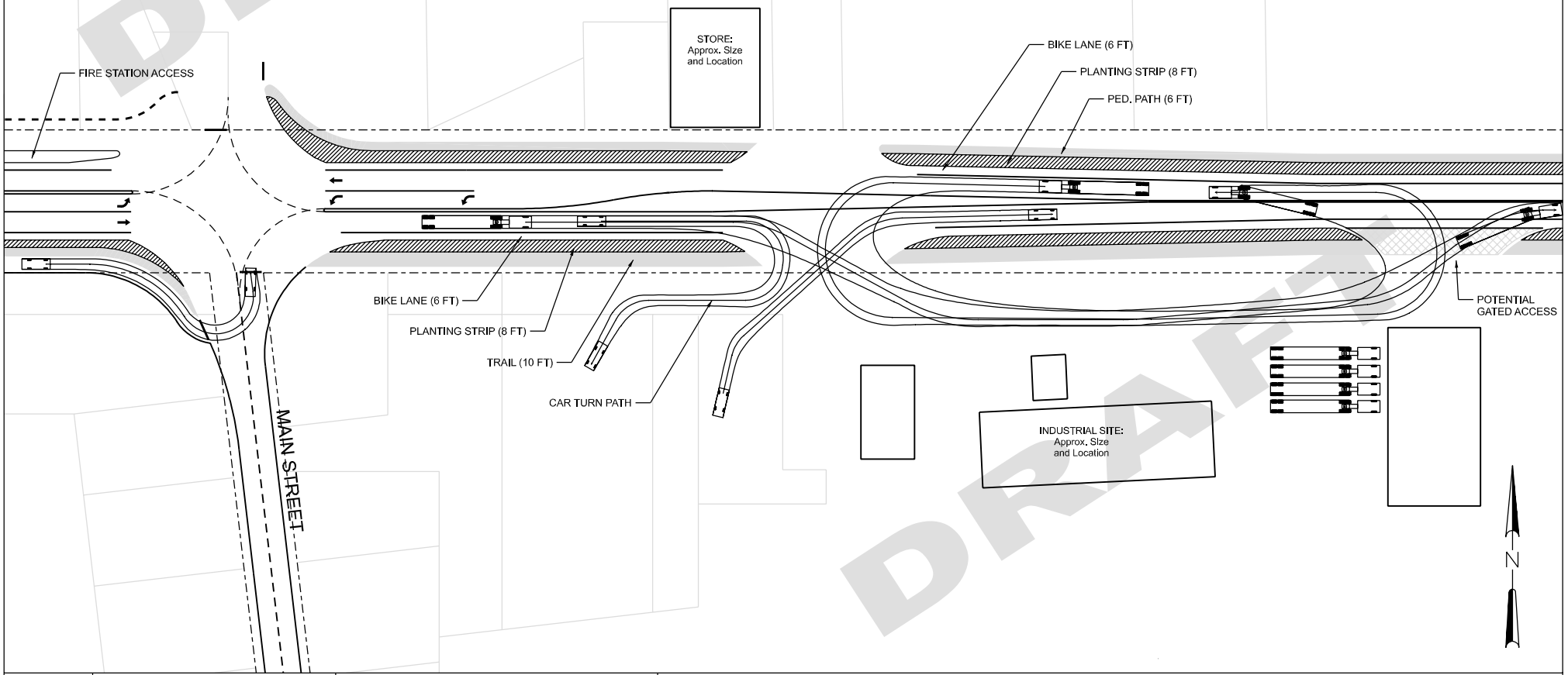
CH2MHILL

CITY OF IDANHA, OR

DESIGN NOTES:

Posted Speed: 40 MPH (Field Verified)
Design Speed: 45 MPH
Design Vehicle: WB-67 (53 FT Box Semi-Truck)
Left-Turn Designed per ODOT Std. Drawing RD 215

NOTE: Design is conceptual, and not based upon verified survey information.



LEGEND
- PLANTING STRIP (8 FEET)
- MUTI-USE PATH (10 FEET)
- PEDESTRIAN PATH
- ROW LINE
- PARCEL BOUNDARY LINE

SCALE
0 50 100 150
1" = 100 FT

Figure 13. South Access Circulation Concept #1

CH2MHILL

the industrial land would enter and exit the same access point, and would have adequate room to maneuver. Advantages of this concept are consolidated truck entrance and exit. Primary disadvantages include potential conflicts with vehicles accessing commercial land.

Conclusions

After reviewing the concepts, the PMT concluded that at this time, a "do nothing" alternative was preferable to OR 22 right-of-way improvements and resultant access control. The primary concern was potential adverse impacts to the economic health of the community.

Although currently the access control characteristics in Idanha do not appear to be affecting safety and operations, as Idanha develops, access control should be addressed to ensure functionality and safety of the roadway for residents, visitors, and the traveling public. At some time in the future, the installation of curbs and sidewalks and the associated access control would be an effective way to address the goals of better defining the roadway, creating designated bicycle and pedestrian space, and creating a sense of place, therefore mitigating speeding issues.

The recommendations discussed in detail below include Phase 1, which focuses on near-term pedestrian improvements, and Phase 2, which focuses on longer-term transportation strategies as property in Idanha develops. Some of the concepts explored during this study should be revisited in the future.

7 Plan Recommendations

Issues and Assets

Transportation Issues

The primary transportation issues in Idanha include:

- Lack of roadway design or treatments indicating a "sense of place," which contributes to speeding on OR 22
- Lack of pedestrian and bicycle facilities, particularly along OR 22
- Speeding on OR 22
- Inadequate shoulder widths on OR 22
- Lack of roadway edge definition, which contributes to speeding and passing on the right on OR 22
- Perception of unsafe pedestrian and bicyclist conditions along OR 22, including crossing OR 22, especially near Main Street
- Children accessing and waiting at the bus shelter near Main Street
- Lack of defined access points through the middle of town and inadequate access spacing, which contributes to multiple, unpredictable turning movements, which may in the future be an issue regarding safety and operations
- Lack of internal circulation south of OR 22, which could cause congestion issues in the future as land develops
- Sight distance issues at OR 22/Church Street
- Lack of dedicated enforcement staff or techniques to mitigate speeding

Assets

The Idanha community has many assets that can be used to advance plans to enact positive changes to the transportation system. Some of these include:

- Dedicated City staff, with an understanding of the grant application process
- Active and engaged City leadership
- Interested citizens, who are willing to hear all sides of an issue prior to making a decision and who are interested in bettering the community
- Spectacular setting along the North Santiam River on a Scenic Byway
- Frontage along OR 22
- Existing businesses

The following recommendations are intended to address the issues and build on the assets of Idanha. Recommendations are presented as Phase 1 recommendations, which are intended to focus on the immediate strategies for transportation improvement and were approved through PMT consensus, and Phase 2 recommendations, which are intended to provide longer-term strategies that should be implemented as property in Idanha, particularly fronting the OR 22 corridor, develops and/or redevelops in the future.

Phase 1 Recommendations

Figure 14 shows Phase 1 recommendations for the Idanha transportation system. Idanha should pursue grant funding for these recommendations. Most of the Phase 1 recommendations focus on the central portion of Idanha, between the western edge of the vacant parcel of land southwest of Main Street/OR 22 and Church Street, because that segment of roadway functions as the primary roadway for Idanha and serves as the city center and focal point for pedestrian activity. Pedestrians cross the highway from the southern residential areas off of Main Street and Church Street. Phase 1 recommendations include the following elements:

- **Add gateways.** Gateways into communities serve as visual markers for residents and visitors alike. They signal arrival and entry points to a community. Many times gateways reflect unique local history and conjure positive memories for community residents. Per discussion with the PMT, landscaped gateways are recommended for both ends of the central portion of Idanha (shown on Figure 14). The gateways are intended to help convey the character and "sense of place" of Idanha, which is also expected to slow traffic though town. Idanha should pursue grant funding for these improvements, located within the ODOT right-of-way. Examples of different gateway treatments are shown below. A combination of landscaping, signage, and perhaps local art is appropriate for Idanha. Design of the gateways should include a public process that involves the community.

Landscape Treatment

Lighting Treatment

Architectural Treatment

Examples of Gateway Treatments

- **Develop multiuse trail south of OR 22.** Idanha should immediately pursue the development of a multiuse pedestrian and bicycle trail located south of OR 22 east of Main Street (along the Riverside Drive right-of-way). The development of a multiuse trail located just south of and parallel to OR 22 should be included as a condition of development of the land parcels immediately southwest of the OR 22/Main Street intersection. These trails are identified as recommendations in the *North Santiam Canyon Alternative Transportation Link Feasibility Study – Canyon Journeys* (2005) regional trail plan, and would connect with the regional Santiam Canyon trail system.

- **Define intersection at OR 22/Main Street.** The location and width of Main Street at OR 22 should be defined. Concrete ramps (east side) and striping (west side) will indicate to pedestrians the proper location to cross OR 22, and alert motorists to a location where pedestrians may be crossing. A crosswalk should be added across Main Street (south leg of intersection).

- **Enhance existing off-street internal pedestrian connection (City Hall to post office).** Idanha should improve the existing off-street pedestrian connection between City Hall and the post office to keep walkers off OR 22. This would be accomplished through asphalt overlay to ensure the path is free of obstacles for walkers (e.g., potholes).

- **Widen foglines.** Foglines should be painted wider than usual (8 inches) to help define the edge of the roadway through central Idanha. This will potentially deter passing on the right, and also visually makes the roadway lanes feel narrower (even if they are not), which can slow traffic.

- **Widen shoulders where possible.** Idanha should coordinate with ODOT to widen shoulders along OR 22 to ODOT standards (8 feet for pedestrian usage) where feasible between Main Street and Church Street. This could be accomplished during a pavement overlay.

- **Enhance school bus shelter.** In coordination with the Santiam Canyon School District, Idanha should enhance the existing school bus shelter to ensure a safe, well defined, and all-weather location for children to wait for the bus. Children and parents should also be educated to catch the bus on its way east (on the south side) to avoid crossing OR 22 to catch the bus on its return trip west.

- **Mitigate sight distance issues at Church Street.** Due to roadway geometry (roadway curve, proximity to North Santiam River, and a boulder), there is poor sight distance at Church Street for those traveling from Church Street onto OR 22. There are no recorded safety issues at this location in the past 5 years. Warning signage along westbound OR 22 indicating traffic entering the roadway should be installed to alert drivers about vehicles entering the highway from Church Street.

- **Enact maintenance agreements.** Idanha and ODOT should enact a maintenance agreement that addresses: (1) snow removal to ensure clear sight distance and snow placement and (2) periodic sweeping of shoulders to ensure lack of obstructions (such as gravel) to bicyclists or pedestrians in the roadway shoulder.

- **Encourage private property treatments.** Idanha should encourage property owners along OR 22 to define entrances to their residences, businesses, etc. or frontages through "soft" and portable barriers, such as pots of flowers. The City could examine making "seed" funds available for private property enhancements along the OR 22 corridor for economic development purposes. These enhancements are likely to have the side effect of slowing traffic through town by creating driver interest.

- **Enhance utility pole aesthetics.** Treatments such as lighting or decorative flags/banners hung from utility poles should be explored. Any utility pole flags or banners need to be permitted through ODOT.

- **Purchase radar readerboard and establish a volunteer readerboard operating committee.** Idanha should pursue a traffic safety/enforcement grant to purchase a radar readerboard, which is posted along the side of the road to show drivers their speeds. This tool would help to slow drivers. A post-mounted or trailer readerboard could be purchased. Operation would

require battery recharging; a post-mounted readerboard lasts for less than a day between recharges and is less expensive, and a trailer readerboard lasts for 3 days between recharges and is slightly more expensive. The volunteer committee should be tasked with recharging and moving the readerboard at bi-weekly intervals.

- **Pursue dedicated patrol staff for Idanha.** Idanha should pursue funding to secure dedicated patrol staff for 16 hours a week. Dedicated patrol staff could be funded through safety and enforcement grants or coordination with Marion and Linn counties. Idanha could also examine the development of a minor traffic violations court system, or coordination with County courts. When speeders are assessed fines, 100 percent of the fine would go to Idanha with a city court, and 50 percent of the fine would go to Idanha with a County court system. This would likely cover much of the cost of a part-time patrol person once up-front costs (equipment) were covered by grant dollars.

Phase 1 - Planning Level Cost Estimates

A planning level cost estimate was conducted that included elements from the Phase 1 Recommendations listed above. The cost estimates are rough estimates, and are only to be used for planning purposes. Table 16 shows a range of costs for several individual elements, as well as a cumulative total. The range of costs reflects the level of available design information.

Table 16 Planning Level Costs

Description	Cost Range
Gateways: Install two gateways including signs and landscaped areas at either end of the central city.	$3,500 to $5,000
School Bus Shelter: Install all-weather bus shelter.	$3,500 to $5,000
Mitigate Sight Distance Issue at Church Street: Install warning signage to alert drivers to traffic entering OR 22 from Church Street.	$500 to $800
RADAR readerboard: Purchase RADAR speed readerboard for placement along OR 22 to discourage speeding through Idanha.	$2,500 to $4,000
Infrastructure Improvements: – Off-Street Pedestrian Connection: An asphalt trail connecting Idanha City Hall with the post office. Approximate trail dimensions: 200 feet x 6 feet. – Intersection Definition at OR 22 & Main Street intersection: Install concrete curb ramps on east side of intersection; paint on west side. Add new stop bar and crosswalk striping across Main Street. – Widen Foglines: 8-inch striping on the outer edge of travel lane along OR 22 through the project area. – Additional Project Related Costs: Costs include mobilization, traffic control, surveying and contingency amounts.	$95,000 to $225,000
TOTAL	**$105,000 to $239,000**

Estimates for individual work items are based on costs from the 2005 bid tabulation from the ODOT Procurement Office, and other previous projects. Several Phase 1 elements were combined under a general "infrastructure improvements" heading to reflect the similar implementation characteristics of each of the included elements. The range of costs is greater for this group of elements to reflect the potential for discovery of factors which may impact the cost of the elements. The range of costs shown for the "infrastructure improvements" element assumes savings could be achieved through implementation of the improvements during a single construction project. This would save cost associated with labor and time.

Costs associated with project mobilization and staging were assumed to be higher than comparable projects due to the distance of Idanha to ODOT maintenance facilities and construction equipment.

Costs for developing the Phase 1 multiuse trails (part of the Santiam Canyon trail system) can be found in the *North Santiam Canyon Alternative Transportation Link Feasibility Study – Canyon Journeys* (2005) regional trail plan.

Funding Options

A variety of local, state, and federal funding/grant sources can be used to improve the transportation system and implement some of the Phase 1 recommendations.

Local funding sources include the City of Idanha, private property owners or developers, the Mid-Willamette Valley Council of Governments, and Marion County or Linn County. Other local funding sources could include grants and private funds.

Table 17 summarizes potential public funding sources for pedestrian, bicycle, and roadway improvements in Idanha.

TABLE 17
Potential Funding Sources

Source	Description	Eligible Projects	Funding Cycle
Oregon State Transportation Improvement Program (STIP)	Administered by Oregon Department of Transportation. The STIP provides funding for capital improvements on federal, state, county, and city transportation systems. Projects must be regionally significant.	Roadway, public transportation, bicycle, pedestrian, air, freight, bridge	4 years
Transportation Enhancements	Must serve transportation need.	Bike/pedestrian/trail	2 years
Oregon Bike/Pedestrian Grants	Administered by ODOT's Pedestrian and Bicycle Program. Must be in public right-of-way.	Bike/pedestrian	2 years
Oregon Association Chiefs of Police (OACP) Traffic Safety Grants	Administered by the OACP. Grants for seatbelt, speeding, and DUI enforcement. http://www.policechief.org/	Safety/enforcement	Annual
Alliance for Community Traffic Safety (ACTS) Oregon – Building Safer Communities	Administered by ACTS Oregon. Mini-grants for traffic, bike/pedestrian safety, and community enforcement. http://www.actsoregon.org/	Safety/Enforcement	Annual
Bicyclist Safety Mini-Grants	Administered by Community Cycling Center through ODOT. Grants for bicycle safety and education. http://www.communitycyclingcenter.org/minigrant/	Bicycle safety	Varies
System Development Charges (SDCs)	Fees on new construction allocated for parks, streets, and public improvements. Where available, funds can be used for right-of-way acquisition and trail construction.	Bike/pedestrian/roadway	Varies
Local/County Bond Measures Approved by Voters	Funds can be used for right-of-way acquisition, engineering, design, and construction.	Bike/pedestrian/roadway	Varies
Local Improvement Districts	Districts typically are created by local property owners, imposing a "new tax" to fund improvements. Funds can be used for right-of-way acquisition and construction.	Bike/pedestrian/roadway	Varies
State Parks Recreational Trails Fund	Construction funds for trail projects	Off-roadway bike/pedestrian	Annual

Phase 2 Recommendations

Phase 2 recommendations should be re-examined and implemented as future development occurs in Idanha, particularly along OR 22. Phase 2 recommendations include the following elements.

- **Implement Access Control.** Access control is an issue in Idanha, including access spacing and lack of access definition. However, the safety and operations analysis did not reveal problems along OR 22 in Idanha at this time and the City was concerned about potential adverse economic impacts resulting from access modifications. The PMT recommended that access control be addressed in the future, as property develops along OR 22. Access control will be more effective and beneficial to the community if there is cooperation among landowners and citizens regarding access plans and goals for the city.

  As land along OR 22 develops, access control will become more important from a safety perspective for both motorists and pedestrians/bicyclists. More turning movements equates to more conflict opportunities between vehicles and pedestrians/bicyclists. As development occurs, lack of access control could also affect highway operations.

  Developing properties fronting OR 22 would need to go through a site planning process, which should require accommodations for shared private driveways, as well as internal circulation between private properties, including backage or frontage roads/parking lot connections. All developments, including those located between Main Street and Church Street, will likely need to apply to ODOT for access to the highway. ODOT access spacing would not permit additional access between Main Street and Church Street; however, additional access could be requested using a deviation process. In addition, if a pedestrian/bicycle trail is to be located along OR 22, access control will need to be addressed during the design of that facility.

  General potential access locations are included in the section of this report entitled "Analysis of Options." Access control should be implemented through the development of pedestrian facilities, alternate access (off side streets) where feasible, and consolidation of driveways where feasible. New access points to OR 22 should be spaced according to ODOT standards.

- **Re-Examine a New Left Turn Lane at OR 22/Main Street.** As properties develop along OR 22, and as access control is implemented, the warrant for a left turn lane at OR 22/Main Street should be re-examined. Although currently the location does not merit a left turn lane, as traffic patterns are altered through access control, turning movements that currently are not limited through town would be concentrated at this intersection and could result in an increase in left turn movements. In addition, any development to the southeast of the intersection (currently vacant land) or additional development to the northeast of the intersection could potentially trigger need for a left turn lane at this location.

- **Implement Development Code Strategies.** The development code should include strategies for preservation and improvement of the transportation system as properties develop or redevelop. The development code should include requirements for shared driveways and joint access where feasible, internal circulation, and cross access (e.g., via parking lots) where feasible, as well as encouragement of frontage or backage roads for new development. A criterion for internal pedestrian circulation should be added to the site plan review process. Section 8 includes more discussion related to recommended development code changes. All significant developments, particularly those fronting OR 22 or located on vacant land to the southeast of the Main Street/OR 22 intersection, should be required to submit a traffic impact analysis to ensure that the development accounts for any traffic mitigation that might be necessary to protect the function and safety of the roadway system.

- **Extend 2nd Street West to OR 22**. As the vacant parcel southwest of Main Street/OR 22 develops, 2nd Street should be extended westward to an intersection with OR 22 at the accepted ODOT spacing standard from Main Street. The extension should complement the proposed development. This will enhance internal circulation in the city and provide alternate access to the future land uses developing in the area. A backage road concept should be explored with the developer to serve any new commercial development in that parcel.

- **Enhance Lighting at OR 22 and Main Street.** Lighting should be enhanced at the OR 22/Main Street intersection to improve visibility of pedestrians and bicyclists.

- **Examine Remote Activation for Blinking Signal at Fire Station.** Idanha should coordinate with ODOT about the potential for remote activation of the blinking signal outside the Idanha fire station. The remote activation would be intended for the volunteer fire fighter force.

- **Continue Dialogue among City Residents, Property Owners, and ODOT.** City property owners and citizens should continue dialogue with each other and with ODOT regarding future plans for the OR 22 through Idanha.

8 Idanha Development Code Review

Introduction

This review of Idanha development ordinances evaluates the ability of the City's ordinances to support access management of OR 22 and city redevelopment. The review included items such as determining opportunities and constraints to connecting properties through off-street connections (e.g., parking lots), promoting internal circulation, and allowing for future development of properties in Idanha.

Development ordinances in the City of Idanha Zoning & Developmental Codes (ZDC) were reviewed, focusing on the zones adjacent to OR 22 in the study area (except for CR), as well as the development standards that apply in these zones or to OR 2 in the study area. These included the following chapters of the ZDC:

Redevelopment

- Chapter 9
- Chapter 10, Site Plan Review
- Chapter 17, C ZONE (Commercial)
- Chapter 19, LI ZONE (Light Industrial)
- Chapter 20, I ZONE (Industrial)

Access and Connections, Internal Circulation

- Chapter 12, General Zoning And Development
- Chapter 14, Off-Street Parking and Loading

Redevelopment along OR 22

Chapter 10, Site Plan Review

Site plan review is the process by which development applications are reviewed and approved. A variety of objectives are associated with site plan review, but in general the purpose is to ensure that development is compatible with the surrounding built and natural environment, and to resolve potential conflicts between proposed projects and adjacent uses. Site plan review is required for all new development, excluding single-family detached dwellings, duplex dwellings, and commercial and industrial site alterations or building remodels that do not exceed 25 percent of the total square footage of the structure or site. Site plan review requires applicants to include a site analysis as well as a site development plan showing proposed landscaping, drainage, building elevations, vehicle and pedestrian facilities, and vehicle circulation. Chapter 10 also includes site plan review criteria which address the issue of compatibility.

Considerations

Site plan review is an important process for local governments. It does not preclude future development. Rather, it ensures that future development is compatible and meets certain

requirements laid out by the City. Therefore, we recommend that the City maintain the existing site plan review process and requirements as currently adopted in Chapter 10, as well as ensuring that traffic impact analyses are submitted for all relevant new developments and redevelopments.

In terms of ensuring that internal circulation can be provided, Section 10.050 includes a criterion that one of the considerations in reviewing and approving the required site development plan is traffic safety, internal circulation, and parking.

In addition, this chapter contains no requirement addressing internal pedestrian circulation. This is a safety and convenience issue, and relevant to the redevelopment of OR 22. A criterion addressing on-site pedestrian circulation should be included as a site plan review criterion. While pedestrian circulation is required to be illustrated on the site plan, it is not one of the site plan review criteria in Section 10.050.

Chapters 17, 19, and 20 C, LI, and I Zones

In general, these zones contain no specific standards addressing connected parking lots or internal circulation and do not present barriers or conflicts to implementing such measures if the City chooses to do so.

Chapter 17, C ZONE (Commercial)

The Commercial district allows for a broad range of commercial uses and standards common to downtowns as well as some more auto-oriented uses such as garages. The zone allows building heights up to 50 feet, or 70 feet with a variance and a maximum front yard setback of 5 feet. In addition to dimensional standards, section 17.060 contains development standards that govern the look and orientation of a building, requiring ground floor windows, siding materials, and orientation to the street.

Considerations

To encourage dwellings downtown, the City may want to consider creating a "downtown" zone as well as a more auto-oriented zone. In addition, it may be appropriate to allow residential use above commercial or other uses in the C zone.

Chapter 19, LI ZONE (Light Industrial)

The LI zone allows a small range industrial uses that have minimal impacts, including auto sales, storage units, and car washes. The development standards for this zone are fairly minimal, requiring a minimum front yard setback of 5 feet and no maximum setback. The maximum height is 50 feet, but semi-public buildings may reach 70 feet.

Considerations

This zone covers a great deal of the OR 22 frontage in the study area. The City may want to consider re-zoning some of this area to C or CR zones in order to facilitate downtown redevelopment.

Chapter 20, I ZONE (Light Industrial)

Both commercial and Industrial uses are allowed in the high intensity I zone. This zone has special setbacks for buildings exceeding 35 feet in height, buildings adjacent to residential zoned property (30 feet), and buildings located on the same lot must be set back at least 10 feet from one another.

Considerations

This zone has a great deal of the OR 22 frontage in the study area. Since it is in such close proximity to residential areas, The City may want to consider re-zoning some of this area to C or R zones in order to facilitate downtown redevelopment.

Access and Connections/Internal Circulation

Chapter 12, General Zoning and Development

Access issues are addressed in Chapter 12 of the Idanha Development Code, specifically in Section 2.070, Property Access Requirements. The section requires that all dwellings be located on lots with direct access to a public street or pre-existing private driveway. The section also states that permission must be obtained from ODOT for access to OR 22. This is a very minimal section to address access issues. In addition, Chapter 12 prohibits parking lots in "front yard setbacks" and "landscaped areas."

City staff have expressed interest in the possibility of developing a connected parking lot system to facilitate vehicle circulation behind (or in front of, when affected by topography) future retail establishments in order to reduce the reliance on OR 22 for local street connectivity. While the City's current rules regarding parking lot design do not prohibit connected parking lots, they could be amended to include specific standards for connected parking lots.

This approach to parking lot design and vehicle circulation has been used in other Oregon communities including Hermiston and Tualatin. In most communities, connected parking lots are encouraged rather than required. However, even if they are not required, it is important that the development code contains a section in the access management section to require or encourage connected parking lots.

Considerations

The City may want to consider adding a provision in Section 12.070 encouraging or requiring "cross easements" for parking lots to connect behind buildings and further diminish the need to access OR 22. In addition, this section should include internal pedestrian circulation standards.

There are examples of "cross easement" provisions in the following development codes:

- **City of Hermiston Zoning Code,** Section 157.150, Transportation Improvements, Standards, And Procedures
- **City of Tualatin Development Code,** Section 73.400, Access

The City should maintain the requirement of prohibiting parking in front yards and landscaped areas.

Chapter 14, Off-Street Parking and Loading

This section of the Idanha Development Code includes requirements about the number of required off-street parking spaces for a broad range of uses. Joint use parking is allowed, meaning that two uses with non-overlapping hours may both count the same parking spaces toward the minimum requirements, thus diminishing the total number. The chapter also outlines requirements for parking lot circulation and landscaping. The chapter also contains internal vehicle circulation standards, including driveway width.

Considerations

If internal pedestrian circulation standards are adopted, this chapter should contain a cross-reference to them. The requirements of this section do not present barriers to the redevelopment of OR 22, or to the connection of properties through cross easements. If required, parking lot perimeter landscaping could present a barrier to parking lot connectivity. However, the only requirement for such landscaping is in Section 14.080,(B) Screening, and it is only required when parking areas are adjacent to a residential zone.

Development Code Conclusions

The Idanha Development Code does not create barriers to connecting properties or to allowing internal circulation, and it does not preclude future development. However, the code does not present opportunities to achieve these objectives either. In order to implement a long-term access management strategy, such as connecting properties at the rear through cross easements or through frontage roads, the City should review Attachment 6, which includes sample code text from the cities of Hermiston and Tualatin and consider making appropriate changes to the code

In addition, as part of any redevelopment strategy, reasonable zoning should be in place. Much of the study area frontage along OR 22 is zoned LI or I for industrial uses. These areas are adjacent to or near most of the residential development and commercial zoning, and it might make sense for some of this area to be rezoned to reflect the economic shifts that have taken place over time. Finally, for the purpose of pedestrian safety and convenience, on-site pedestrian circulation standards should be developed and adopted the next time the City amends the Development Code.

Attachment 1
Traffic Operations Methodology Memorandum

ATTACHMENT 1.

Idanha Transportation Facility Plan Traffic Analysis Methodology

PREPARED FOR: Terry Cole/ODOT

PREPARED BY: Kirsten Pennington/CH2M HILL
Craig Grandstrom/CH2M HILL
Andra Henriques/CH2M HILL

DATE: January 13, 2005

This technical memorandum outlines the process for estimating the 30th highest volumes, forecasting future traffic volumes and performing the traffic analysis for the Idanha Transportation Facility Plan. If possible, we would like to receive comments January 20, 2005 as our schedule is to produce a transportation facility improvements memorandum by February 21, 2005.

30th Highest Traffic Volume Methodology

There are three intersections that will be analyzed in this study and they are all unsignalized. The intersections are:

- OR 22 & Blowout Road
- OR 22 & Main Street
- OR 22 & Church Street

The traffic counts will show major vehicle classification (car, light. Medium and heavy trucks along with pedestrian and bicycle data) and were collected on January 11, 2005. At OR 22 & Main Street, a 16 hour count was taken. At OR 22 & Blowout Road and OR 22 & Church Street, two hour counts were taken between 4 and 6 p.m. The volumes between the OR 22 & Main Street and OR 22 & Church Street intersections will be balanced before proceeding to the 30th highest hour steps to account for the close proximity between the intersections.

There is no automated traffic recorder (ATR) site stationed within the City of Lafayette. In order to factor the traffic counts to the 30th highest hour volumes, the seasonal factor from the nearest location will be used. This location is the Detroit ATR site #24-015, located along OR 22, 0.14 mile east of the eastern city limits of Detroit.

The procedure used to create 30th highest hour volumes (30 HHV) will utilize the same steps outlined in the pdf file located on the weblink below; which is to divide the count period seasonal factor by the peak period seasonal factor to get the 30 HHV seasonal factor. Once the peak hour volumes (from the traffic count) are determined, the 30 HHV seasonal factor will be applied to get 30th highest hour volumes.

(http://www.odot.state.or.us/tddtpau/SysAnalysis.html#DataRes)

Traffic Forecast Methodology

To forecast traffic volumes, we will use the 2023 future volume table located on the weblink below.

(http://www.odot.state.or.us/tddtpau/SysAnalysis.html#DataRes)

To arrive at the 20-year design year, the volumes will be extrapolated an additional two years to create 2025 conditions. Only forecasts with R-squared values greater than 0.75 will be used for the growth rates. Since none of the data from within Idanha city limits has an R-squared value above 0.75, the rates will be taken from a location along OR 22, about 10 miles east of Idanha. The Table 1 shows the growth rate that will be used for this analysis. The rate was calculated using linear interpolation.

TABLE 1

Future Growth Rate: OR 22 - North Santiam Highway No. 162

MP	2001 ADT	2023 ADT	R-Squared	Overall (2001-2023) Factor	Annual Growth Rate
65.48	2900	4200	0.7754	1.45	2.04%
Growth Factor for 2025 forecasts (based on 20 years growth from 2005)					**1.41**

Traffic Analysis Software and Input Assumptions

Synchro software will be used for the intersection analysis. The reported results will be the V/C ratios from the HCM report. A list of assumptions are listed in Table 2.

TABLE 2

Synchro Operations Parameters/Assumptions

	Condition	
Arterial Intersection Parameters	**Existing (2005)**	**Design Year (2025) No-Build and Build Alternatives**
Peak Hour Factor	From traffic count.	- 0.85 for (Blowout, Main and Church Streets) - 0.95 for OR 22 (Major Arterial) If traffic count has higher PHFs than default PHFs, then continue using the existing PHFs.[1]
Conflicting Bikes and Pedestrian per Hour	From traffic count, if not provided, assume 10 peds/bikes per approach	Ditto
Area Type	"Other" Area	Ditto
Ideal Saturation Flow Rate (for all movements)	1800	Ditto
Lane Width	From As-builts, field visit or ODOT website, otherwise 12 feet	Ditto
Percent Heavy Vehicles	From traffic count, otherwise 5%	Ditto
Percent Grade	From As-builts, otherwise 0%	Ditto
Parking Maneuvers per Hour	From field visit, otherwise assume 0	Ditto
Bus Blockages	From field visit, otherwise assume 0.	Ditto
Intersection signal phasing and coordination	Unsignalized	Assumed unsignalized, if signal require, then optimize phase and cycle length, phase sequence and

TABLE 2

Synchro Operations Parameters/Assumptions

	Condition	
Arterial Intersection Parameters	**Existing (2005)**	**Design Year (2025) No-Build and Build Alternatives**
		offset (if signals are coordinated)
Intersection signal timing optimization limits	Unsignalized	Assumed unsignalized, if signal require, then 60 to 120 seconds depending on the number of phases
Minimum Green time	Unsignalized	If signal required, 10 seconds if no pedestrian time is required
Yellow and all-red time	Unsignalized	If signal required, (Y) = 4 seconds and (R) = 1 second
Right Turn on Red	Unsignalized	If signal required, allow
95 Percentile vehicle queues calculated based on an average of 25 feet per vehicle and: For V/C < 0.70, use 95th Percentile results from Synchro reports For V/C > 0.70, use SimTraffic report (the average of at least 5 runs of 1 hour length with 15-min peak divided out)[2]	Yes	Ditto
Level of service goals	- OR 22 (#162) is a NHS State Highway and Freight Route. At Blowout Intersection the posted speed is 55 mph, therefore OR 22 V/C = 0.70 - At Main and Church Intersection the posted speed is 40 mph, therefore OR 22 V/C = 0.75 - The side-street (Blowout, Main and Church) V/C ratios are 0.85. V/C information from the Oregon Highway Plan (OHP).	- No-Build: See Existing Conditions V/C Ratios - Build: OR 22 (#162) is a NHS State Highway and Freight Route. At Blowout, Main and Church Intersections: OR 22 V/C = 0.70 - The side-street (Blowout, Main and Church) V/C ratios are 0.80. Highway No-Build V/C threshold from the OHP and Build V/C thresholds from the Highway Design Manual, Table 10-1.

Note: Ditto is used when the Design Year 2025 assumption is similar to the Existing assumption.

1 - Assumptions consistent with White Paper on Application of Oregon Highway Plan Mobility Standards.

2 - The simulation will be for one hour with the peak 15-minutes in the first 15 minutes. The results from this simulation will be applied to signalized and unsignalized intersections. Instructions provided by TPAU.

Attachment 2
Existing Traffic Count Data

ATTACHMENT 2

All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Blowout&Hwy22
Site Code : 00000000
Start Date : 1/11/2005
Page No : 1

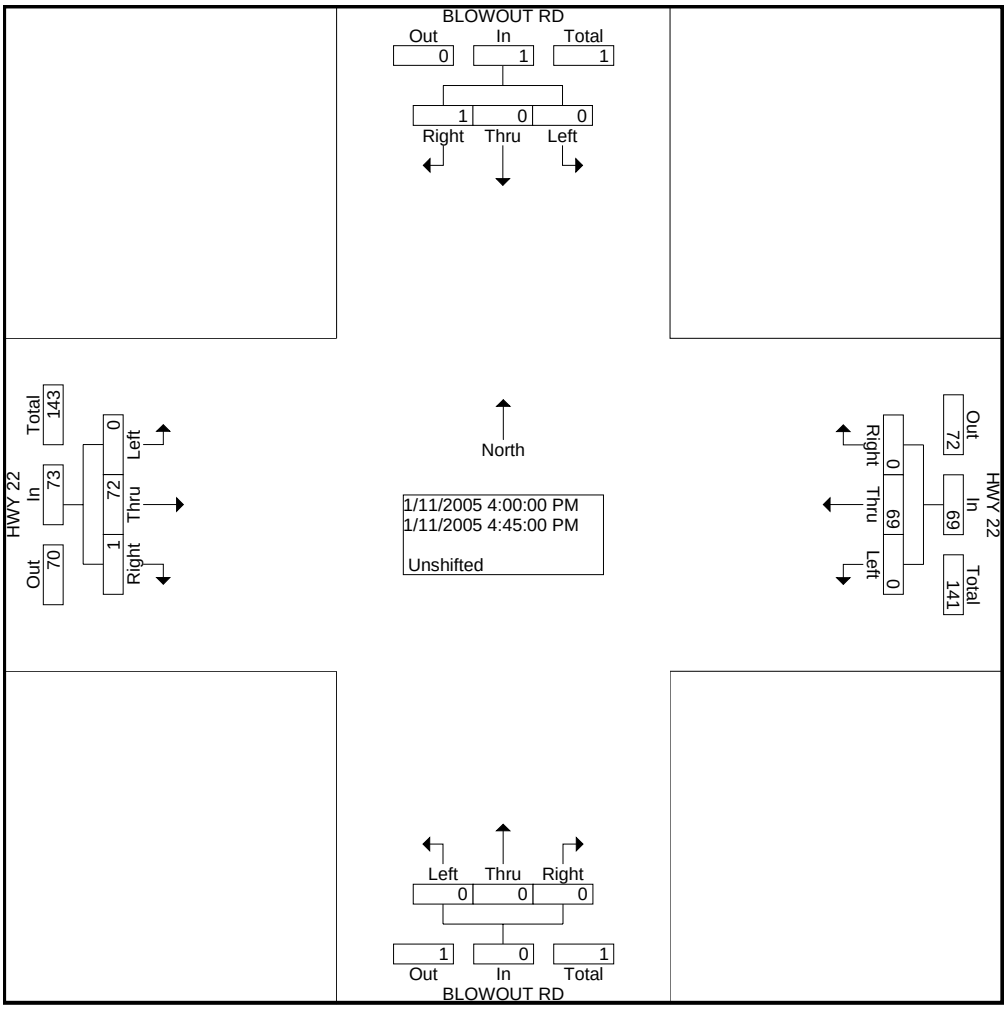
Groups Printed- Unshifted

	BLOWOUT RD Southbound					HWY 22 Westbound					BLOWOUT RD Northbound					HWY 22 Eastbound							
Start Time	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
04:00 PM	0	0	0	0	0	0	28	0	4	28	0	0	0	0	0	0	16	1	2	17	6	45	51
04:15 PM	0	0	1	0	1	0	13	0	0	13	0	0	0	0	0	0	21	0	2	21	2	35	37
04:30 PM	0	0	0	0	0	0	12	0	1	12	0	0	0	0	0	0	23	0	4	23	5	35	40
04:45 PM	0	0	0	0	0	0	16	0	1	16	0	0	0	0	0	0	12	0	1	12	2	28	30
Total	0	0	1	0	1	0	69	0	6	69	0	0	0	0	0	0	72	1	9	73	15	143	158
05:00 PM	0	0	0	0	0	0	18	0	5	18	0	0	0	0	0	0	16	0	2	16	7	34	41
05:15 PM	0	0	0	0	0	0	16	1	1	17	1	0	0	0	1	0	13	0	3	13	4	31	35
05:30 PM	0	0	0	0	0	0	13	0	3	13	0	0	0	0	0	0	18	0	3	18	6	31	37
05:45 PM	1	0	0	0	1	0	10	1	1	11	0	0	0	0	0	0	7	0	0	7	1	19	20
Total	1	0	0	0	1	0	57	2	10	59	1	0	0	0	1	0	54	0	8	54	18	115	133
Grand Total	1	0	1	0	2	0	126	2	16	128	1	0	0	0	1	0	126	1	17	127	33	258	291
Apprch %	50.0	0.0	50.0			0.0	98.4	1.6			100.0	0.0	0.0			0.0	99.2	0.8					
Total %	0.4	0.0	0.4		0.8	0.0	48.8	0.8		49.6	0.4	0.0	0.0		0.4	0.0	48.8	0.4		49.2	11.3	88.7	

All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Blowout&Hwy22
Site Code : 00000000
Start Date : 1/11/2005

	BLOWOUT RD Southbound				HWY 22 Westbound				BLOWOUT RD Northbound				HWY 22 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Intersection 04:00 PM																	
Volume	0	0	1	1	0	69	0	69	0	0	0	0	0	72	1	73	143
Percent	0.0	0.0	100.0		0.0	100.0	0.0		0.0	0.0	0.0		0.0	98.6	1.4		
04:00 Volume	0	0	0	0	0	28	0	28	0	0	0	0	0	16	1	17	45
Peak Factor																	0.794
High Int.	04:15 PM				04:00 PM				3:45:00 PM				04:30 PM				
Volume	0	0	1	1	0	28	0	28	0	0	0	0	0	23	0	23	
Peak Factor				0.250				0.616								0.793	



All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Church&Hwy22
Site Code : 00000000
Start Date : 1/11/2005

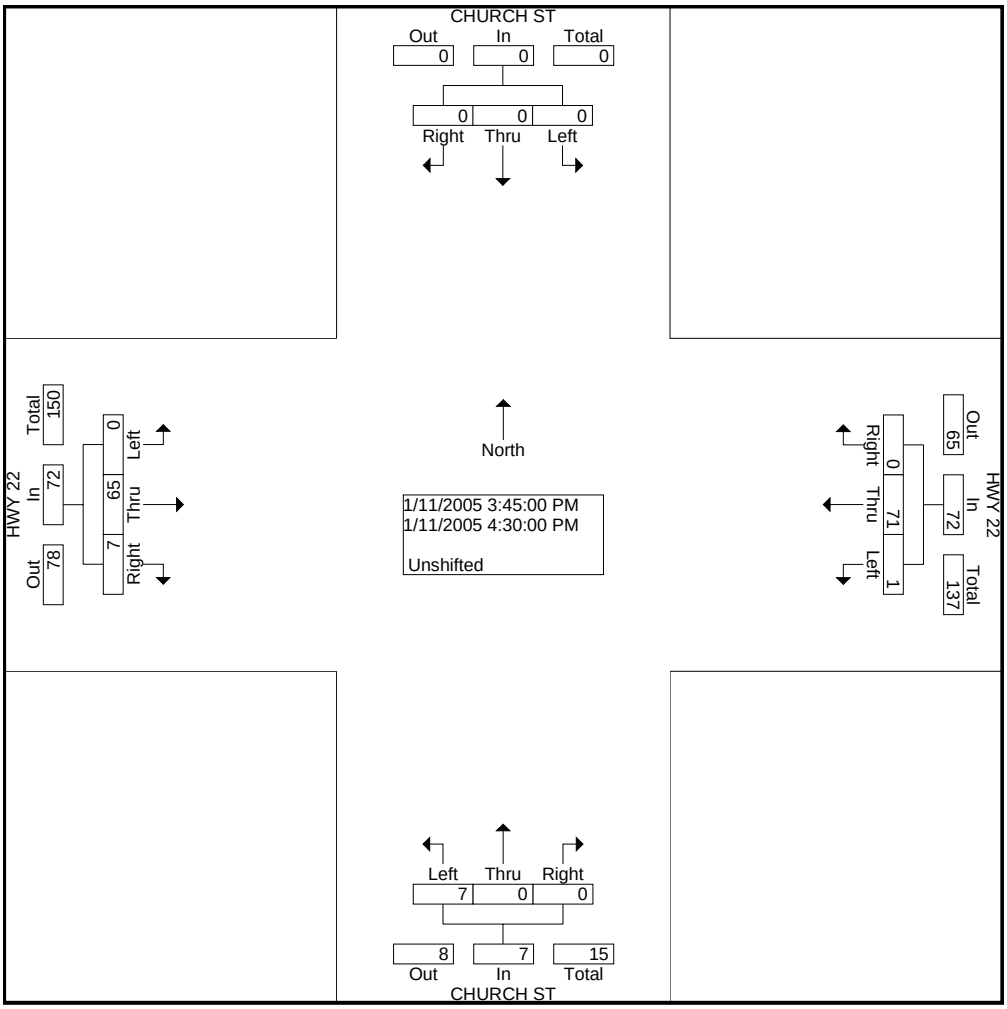
Groups Printed- Unshifted

	CHURCH ST Southbound					HWY 22 Westbound					CHURCH ST Northbound					HWY 22 Eastbound							
Start Time	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
03:45 PM	0	0	0	0	0	1	22	0	2	23	4	0	0	0	4	0	13	4	3	17	5	44	49
Total	0	0	0	0	0	1	22	0	2	23	4	0	0	0	4	0	13	4	3	17	5	44	49
04:00 PM	0	0	0	0	0	0	21	0	3	21	2	0	0	0	2	0	15	0	1	15	4	38	42
04:15 PM	0	0	0	0	0	0	13	0	0	13	1	0	0	0	1	0	16	2	1	18	1	32	33
04:30 PM	0	0	0	0	0	0	15	0	1	15	0	0	0	1	0	0	21	1	4	22	6	37	43
04:45 PM	0	0	0	0	0	0	11	0	1	11	0	0	1	0	1	0	11	2	2	13	3	25	28
Total	0	0	0	0	0	0	60	0	5	60	3	0	1	1	4	0	63	5	8	68	14	132	146
05:00 PM	0	0	0	0	0	1	22	0	4	23	1	0	2	0	3	0	13	1	1	14	5	40	45
05:15 PM	0	0	0	0	0	1	17	0	3	18	3	0	0	0	3	0	10	2	2	12	5	33	38
05:30 PM	0	0	0	0	0	2	8	0	3	10	0	0	2	0	2	0	11	6	2	17	5	29	34
05:45 PM	0	0	0	0	0	6	12	0	1	18	0	0	2	0	2	0	9	1	1	10	2	30	32
Total	0	0	0	0	0	10	59	0	11	69	4	0	6	0	10	0	43	10	6	53	17	132	149
Grand Total	0	0	0	0	0	11	141	0	18	152	11	0	7	1	18	0	119	19	17	138	36	308	344
Apprch %	0.0	0.0	0.0			7.2	92.8	0.0			61.1	0.0	38.9			0.0	86.2	13.8					
Total %	0.0	0.0	0.0		0.0	3.6	45.8	0.0		49.4	3.6	0.0	2.3		5.8	0.0	38.6	6.2		44.8	10.5	89.5	

All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Church&Hwy22
Site Code : 00000000
Start Date : 1/11/2005

	CHURCH ST Southbound				HWY 22 Westbound				CHURCH ST Northbound				HWY 22 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 03:45 PM to 05:45 PM - Peak 1 of 1																	
Intersection 03:45 PM																	
Volume	0	0	0	0	1	71	0	72	7	0	0	7	0	65	7	72	151
Percent	0.0	0.0	0.0		1.4	98.6	0.0		100.0	0.0	0.0		0.0	90.3	9.7		
03:45 Volume	0	0	0	0	1	22	0	23	4	0	0	4	0	13	4	17	44
Peak Factor																	0.858
High Int.	3:30:00 PM				03:45 PM				03:45 PM				04:30 PM				
Volume	0	0	0	0	1	22	0	23	4	0	0	4	0	21	1	22	
Peak Factor								0.783				0.438				0.818	



All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Main&Hwy22
Site Code : 00000000
Start Date : 1/11/2005

Groups Printed- Unshifted

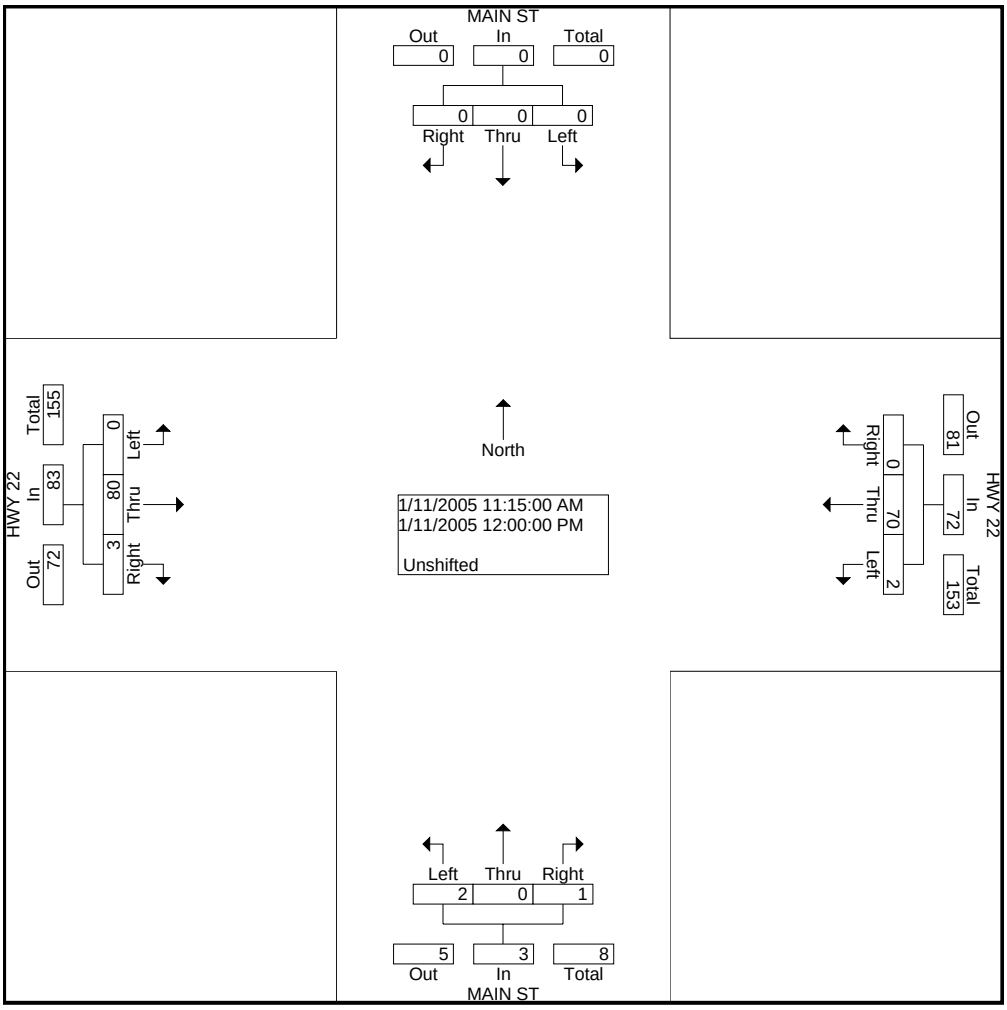
	MAIN ST Southbound					HWY 22 Westbound					MAIN ST Northbound					HWY 22 Eastbound							
Start Time	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Left	Thru	Right	HV	App. Total	Exclu. Total	Inclu. Total	Int. Total
Factor	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0				
05:00 AM	0	0	0	0	0	0	3	0	2	3	0	0	0	0	0	0	6	0	4	6	6	9	15
05:15 AM	0	0	0	0	0	0	4	0	1	4	0	0	0	0	0	0	4	0	2	4	3	8	11
05:30 AM	0	0	0	0	0	0	2	0	1	2	1	0	0	0	1	0	5	1	4	6	5	9	14
05:45 AM	0	0	0	0	0	0	4	0	3	4	0	0	0	0	0	0	7	0	5	7	8	11	19
Total	0	0	0	0	0	0	13	0	7	13	1	0	0	0	1	0	22	1	15	23	22	37	59
06:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	2	0	1	2	1	7	8
06:15 AM	0	0	0	0	0	0	6	0	3	6	0	0	0	0	0	0	4	0	1	4	4	10	14
06:30 AM	0	0	0	0	0	0	4	0	2	4	0	0	0	0	0	0	6	0	3	6	5	10	15
06:45 AM	0	0	0	0	0	0	2	0	0	2	1	0	1	0	2	0	7	0	1	7	1	11	12
Total	0	0	0	0	0	0	17	0	5	17	1	0	1	0	2	0	19	0	6	19	11	38	49
07:00 AM	0	0	0	0	0	0	8	0	3	8	0	0	0	0	0	0	8	0	3	8	6	16	22
07:15 AM	0	0	0	0	0	0	8	0	1	8	1	0	0	0	1	0	9	0	3	9	4	18	22
07:30 AM	0	0	0	0	0	0	9	0	3	9	2	0	0	0	2	0	8	0	3	8	6	19	25
07:45 AM	0	0	0	0	0	0	11	0	2	11	0	0	0	0	0	0	10	0	3	10	5	21	26
Total	0	0	0	0	0	0	36	0	9	36	3	0	0	0	3	0	35	0	12	35	21	74	95
08:00 AM	0	0	0	0	0	1	9	0	0	10	1	0	0	0	1	0	19	0	7	19	7	30	37
08:15 AM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	19	0	5	19	5	25	30
08:30 AM	0	0	0	0	0	0	13	0	3	13	0	0	0	0	0	0	16	0	5	16	8	29	37
08:45 AM	0	0	0	0	0	0	11	0	1	11	0	0	0	0	0	0	9	0	1	9	2	20	22
Total	0	0	0	0	0	1	39	0	4	40	1	0	0	0	1	0	63	0	18	63	22	104	126
09:00 AM	0	0	0	0	0	0	4	0	1	4	1	0	0	0	1	0	15	0	1	15	2	20	22
09:15 AM	0	0	0	0	0	0	12	0	2	12	0	0	0	0	0	0	17	1	3	18	5	30	35
09:30 AM	0	0	0	0	0	1	8	0	2	9	0	0	1	0	1	0	17	0	2	17	4	27	31
09:45 AM	0	0	0	0	0	1	9	0	5	10	0	0	0	0	0	0	11	0	2	11	7	21	28
Total	0	0	0	0	0	2	33	0	10	35	1	0	1	0	2	0	60	1	8	61	18	98	116
10:00 AM	0	0	0	0	0	0	22	0	2	22	1	0	0	0	1	0	11	0	0	11	2	34	36
10:15 AM	0	0	0	0	0	0	16	0	4	16	1	0	0	0	1	0	11	0	6	11	10	28	38
10:30 AM	0	0	0	0	0	0	12	0	4	12	0	0	0	0	0	0	22	1	1	23	5	35	40
10:45 AM	0	0	0	0	0	1	12	0	2	13	0	0	1	0	1	0	12	1	2	13	4	27	31
Total	0	0	0	0	0	1	62	0	12	63	2	0	1	0	3	0	56	2	9	58	21	124	145
11:00 AM	0	0	0	0	0	0	15	0	3	15	1	0	0	0	1	0	18	0	2	18	5	34	39
11:15 AM	0	0	0	0	0	1	18	0	6	19	0	0	0	0	0	0	26	2	5	28	11	47	58
11:30 AM	0	0	0	0	0	0	17	0	2	17	2	0	0	0	2	0	13	0	3	13	5	32	37
11:45 AM	0	0	0	0	0	1	12	0	0	13	0	0	1	0	1	0	18	1	2	19	2	33	35
Total	0	0	0	0	0	2	62	0	11	64	3	0	1	0	4	0	75	3	12	78	23	146	169
12:00 PM	0	0	0	0	0	0	23	0	7	23	0	0	0	0	0	0	23	0	5	23	12	46	58
12:15 PM	0	0	0	0	0	0	15	0	7	15	0	0	0	0	0	0	12	2	0	14	7	29	36
12:30 PM	0	0	0	0	0	0	21	0	8	21	0	0	0	0	0	0	15	0	2	15	10	36	46
12:45 PM	0	0	0	0	0	0	11	0	5	11	1	0	0	0	1	0	19	1	6	20	11	32	43
Total	0	0	0	0	0	0	70	0	27	70	1	0	0	0	1	0	69	3	13	72	40	143	183
01:00 PM	0	0	0	0	0	0	17	0	3	17	0	0	1	0	1	0	11	0	2	11	5	29	34
01:15 PM	0	0	0	0	0	0	10	0	1	10	0	0	1	0	1	0	9	0	3	9	4	20	24
01:30 PM	0	0	0	0	0	0	17	0	5	17	0	0	0	0	0	0	17	1	2	18	7	35	42
01:45 PM	0	0	0	0	0	0	16	0	4	16	0	0	0	0	0	0	15	0	3	15	7	31	38
Total	0	0	0	0	0	0	60	0	13	60	0	0	2	0	2	0	52	1	10	53	23	115	138
02:00 PM	0	0	0	0	0	0	25	0	6	25	1	0	0	0	1	0	17	0	3	17	9	43	52
02:15 PM	0	0	0	0	0	1	20	0	2	21	0	0	0	0	0	0	11	0	1	11	3	32	35
02:30 PM	0	0	0	0	0	1	25	0	5	26	0	0	0	0	0	0	11	2	0	13	5	39	44
02:45 PM	0	0	0	0	0	0	23	0	6	23	1	0	0	0	1	0	17	0	0	17	6	41	47
Total	0	0	0	0	0	2	93	0	19	95	2	0	0	0	2	0	56	2	4	58	23	155	178
03:00 PM	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	13	2	2	15	2	30	32
03:15 PM	0	0	0	0	0	0	21	0	3	21	0	0	0	0	0	0	24	0	6	24	9	45	54
03:30 PM	0	0	0	0	0	0	19	0	2	19	0	0	0	0	0	0	7	0	0	7	2	26	28
03:45 PM	0	0	0	0	0	0	22	0	2	22	1	0	2	0	3	0	17	2	2	19	4	44	48
Total	0	0	0	0	0	0	77	0	7	77	1	0	2	0	3	0	61	4	10	65	17	145	162
04:00 PM	0	0	0	0	0	1	24	0	4	25	2	0	1	0	3	0	15	0	0	15	4	43	47
04:15 PM	0	0	0	0	0	1	13	0	0	14	0	0	0	0	0	0	16	1	1	17	1	31	32
04:30 PM	0	0	0	0	0	1	12	0	1	13	0	0	1	1	1	0	24	2	5	26	7	40	47
04:45 PM	0	0	0	0	0	1	15	0	0	16	0	0	0	0	0	0	12	0	1	12	1	28	29
Total	0	0	0	0	0	4	64	0	5	68	2	0	2	1	4	0	67	3	7	70	13	142	155
05:00 PM	0	0	0	0	0	0	19	0	5	19	0	0	0	0	0	0	17	0	1	17	6	36	42
05:15 PM	0	0	0	0	0	0	22	0	1	22	0	0	0	2	0	0	8	0	2	8	5	30	35
05:30 PM	0	0	0	0	0	0	7	0	3	7	0	0	0	0	0	0	19	0	3	19	6	26	32
05:45 PM	0	0	0	0	0	0	14	0	1	14	0	0	2	0	2	0	8	0	1	8	2	24	26
Total	0	0	0	0	0	0	62	0	10	62	0	0	2	2	2	0	52	0	7	52	19	116	135
06:00 PM	0	0	0	0	0	0	8	0	2	8	0	0	1	0	1	0	17	0	2	17	4	26	30
06:15 PM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	14	0	4	14	4	22	26
06:30 PM	0	0	0	0	0	0	2	0	1	2	0	0	0	0	0	0	8	0	0	8	1	10	11
06:45 PM	0	0	0	0	0	1	10	0	0	11	0	0	0	0	0	0	11	0	5	11	5	22	27
Total	0	0	0	0	0	1	28	0	3	29	0	0	1	0	1	0	50	0	11	50	14	80	94

07:00 PM	0	0	0	0	0	0	13	0	3	13	0	0	0	0	0	0	5	1	1	6	4	19	23
07:15 PM	0	0	0	0	0	0	10	0	1	10	0	0	0	0	0	0	6	1	1	7	2	17	19
07:30 PM	0	0	0	0	0	0	5	0	1	5	0	0	1	0	1	0	3	0	1	3	2	9	11
07:45 PM	0	0	0	0	0	0	3	0	1	3	0	0	0	0	0	0	10	2	2	12	3	15	18
Total	0	0	0	0	0	0	31	0	6	31	0	0	1	0	1	0	24	4	5	28	11	60	71
08:00 PM	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	5	0	1	5	1	11	12
08:15 PM	0	0	0	0	0	0	6	0	1	6	0	0	0	0	0	0	7	0	1	7	2	13	15
08:30 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	7	7
08:45 PM	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	5	0	1	5	1	12	13
Total	0	0	0	0	0	1	22	0	1	23	0	0	0	0	0	0	20	0	3	20	4	43	47
Grand Total	0	0	0	0	0	14	769	0	149	783	18	0	14	3	32	0	781	24	150	805	302	1620	1922
Apprch %	0.0	0.0	0.0			1.8	98.2	0.0			56.3	0.0	43.8			0.0	97.0	3.0					
Total %	0.0	0.0	0.0		0.0	0.9	47.5	0.0		48.3	1.1	0.0	0.9		2.0	0.0	48.2	1.5		49.7	15.7	84.3	

All Traffic Data Services Inc.
2225 NE 27th St
Renton, WA 98056
Ph. 206-251-0300

File Name : Main&Hwy22
Site Code : 00000000
Start Date : 1/11/2005

	MAIN ST Southbound				HWY 22 Westbound				MAIN ST Northbound				HWY 22 Eastbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour From 05:00 AM to 08:45 PM - Peak 1 of 1																	
Intersection	11:15 AM																
Volume	0	0	0	0	2	70	0	72	2	0	1	3	0	80	3	83	158
Percent	0.0	0.0	0.0		2.8	97.2	0.0		66.7	0.0	33.3		0.0	96.4	3.6		
11:15 Volume	0	0	0	0	1	18	0	19	0	0	0	0	0	26	2	28	47
Peak Factor																	0.840
High Int.	4:45:00 AM				12:00 PM				11:30 AM				11:15 AM				
Volume	0	0	0	0	0	23	0	23	2	0	0	2	0	26	2	28	
Peak Factor								0.783				0.375				0.741	



Attachment 3
Access Locations – OR 22

Attachment 3. Idanha Access Locations and Idanha Access Permits

Access Point Inventory

The following access points exist along OR 22 within Idanha city limits:

TABLE 1.1
Access Inventory – OR 22 within Idanha City Limits

Side of Hwy by Travel Direction	Milepoint**	Type of Service	Approach Material	Throat Width (Approx; in Ft.)
OR 22 Westbound				
Westbound	56.01	Residential	paved	50
Westbound	55.89	Turnout	gravel	180
Westbound	55.54	Road (closed off with boulders)	paved	60
Westbound	55.34	Residential	paved	14
Westbound	55.31	Residential	paved	12
Westbound	55.25	Residential	paved	14
Westbound	55.19	Forest service road	paved	14
Westbound	55.17	Residential	paved	12
Westbound	55.16	Residential	paved	15
Westbound	55.15	Commercial	paved	23
Westbound	55.12	Commercial	paved	65
Westbound	55.10	Residential	paved	22
Westbound	54.98	Commercial	paved	25
Westbound	54.73	Commercial/Industrial	gravel	205
Westbound	54.62	Large pullout area -includes a single family residence, grocery store, post office	4 feet paved; remainder is gravel	875
Westbound	54.50	Commercial (coffee kiosk); City Hall	paved	105
Westbound	54.47	Commercial	paved	30
Westbound	54.42	Commercial	paved	75
Westbound	54.38	Frontage-type road access approach	paved	40
Westbound	54.42	Frontage-type road access approach	paved	75

TABLE 1.1
Access Inventory – OR 22 within Idanha City Limits

Side of Hwy by Travel Direction	Milepoint**	Type of Service	Approach Material	Throat Width (Approx; in Ft.)
Westbound	54.32	Residential	gravel	20
Westbound	54.29	Residential	gravel	14
Westbound	54.27	Residential	gravel	14
Westbound	54.23	Residential	paved	25
Westbound	54.21	Residential	gravel	25
Westbound	54.15	Residential	gravel	25
Westbound	54.13	Residential	gravel	15
Westbound	54.08	Turnout	gravel	250
Westbound	53.71	Boulder Creek Road	paved	45
Westbound	53.23	Forest service road and Turnout	gravel	250
Westbound	53.13	Commercial/Industrial	paved	40
Westbound	53.09	Residential	paved	40
Westbound	53.06	Residential	paved	40
OR-22 Eastbound				
Eastbound	52.96	Blowout Road	paved	28
Eastbound	53.22	Gravel Pit	gravel	30
Eastbound	53.23	Gravel Pit	paved	20
Eastbound	53.26	Gravel Pit	gravel	200
Eastbound	53.35	Parking Lot	gravel	30
Eastbound	53.44	Turnout	gravel	100
Eastbound	53.54	Turnout	gravel	200
Eastbound	53.68	Turnout	gravel	350
Eastbound	53.71	Boulder Creek Road	paved	45
Eastbound	53.95	Informal Parking/Turnout	gravel	800
Eastbound	54.15	Vacant lot	gravel	20
Eastbound	54.26	Vacant lot	gravel	30
Eastbound	54.48	Commercial	gravel	200
Eastbound	54.54	Main Street	paved	22
Eastbound	54.60	Commercial -Vacant Lot	gravel	310

TABLE 1.1
Access Inventory – OR 22 within Idanha City Limits

Side of Hwy by Travel Direction	Milepoint**	Type of Service	Approach Material	Throat Width (Approx; in Ft.)
Eastbound	54.65	Commercial	paved	75
Eastbound	54.75	Turnout	paved	50
Eastbound	54.80	Church Street	paved	22
Eastbound	55.12	Commercial - Parking Lot	gravel	300
Eastbound	55.17	Commercial - Parking Lot	paved	30
Eastbound	55.19	Commercial/Industrial - vacant mill	paved	60
Eastbound	55.26	Commercial/Industrial- vacant mill	paved	250
Eastbound	55.28	Residential	paved	40
Eastbound	55.30	Commercial/Industrial - vacant	paved	40
Eastbound	55.33	Commercial/Industrial - vacant	paved	40
Eastbound	55.52	Turnout/Vacant lot	paved	45
Eastbound	55.89	Residential	paved	80
Eastbound	56.01	Residential	paved	40

Notes
***Access milepoint number represents approximate center point of access approach*

Existing Approach Permits

The following approaches to OR 22 within Idanha have approach permits, per ODOT:

TABLE 1.2
Existing Idanha Approach Permits, Per ODOT

Permit Number	Applicant	Milepost	Facility Type	Side
8877	USDA/Willamette	52.92	Gravel	South
35019	Hiebert, H	52.95	Paved	North
13958	Consumers Power Co.	53.04-53.08	Gravel	North
14022	Young, Robert	53.11	Paved	North
22990	US Plywood	53.18	Gravel	South
1837	Willamette National Forest	53.20	Gravel	North
17488	US Plywood Champion	53.26-53.32	Paved	South

TABLE 1.2
Existing Idanha Approach Permits, Per ODOT

Permit Number	Applicant	Milepost	Facility Type	Side
51610	Arden Corey	51610	Temporary	Unknown
11381	Meyer, Mrs Ray	54.12	Gravel	North
21075 & 21222	Banyard, Les	54.19	Gravel	North
14427	Barker, Harold C	54.21	Gravel	North
21711	Green Veneer Inc.	54.25	Paved	North
6176	Willamette National Forest	54.50	Gravel	North
13830	Alderman, M F	54.61	Paved	North
21766	Linn County	54.80	Paved with 20% Taper	South
2424	Rick Scott	54.94	Limited Use	Unknown
35570 & 50186	Malcom E. Hiatt	55.00	Paved	North
12435	Benton, Farris B	55.05	Gravel	South
35550	Hiatt, Malcom	55.17	Gravel	North
13829	Hiebert, Henry	55.18	Paved	North
12661	Green Veneer Inc.	55.24-55.48	Gravel	South
13904	Young & Morgan Timber	55.50	Paved	North

Attachment 4
Idanha Access Management Presentation

ATTACHMENT 4

Idanha Transportation Facility Plan

Access Management Introduction

January 31, 2005

Purpose of Discussion

- **Access Management Introduction**
  - Overview
  - Benefits
  - Potential Treatment Options
  - Idanha & OR 22
  - City Input

- **Next TAC Meeting**
  - Discussion of Access Management Recommendations
  - Refined for Public Open House

Access Management Overview

- **What is Access Management?**
- **Purpose of Access Management?**
- **Why does it work?**
- **A history in brief**

What is access management?

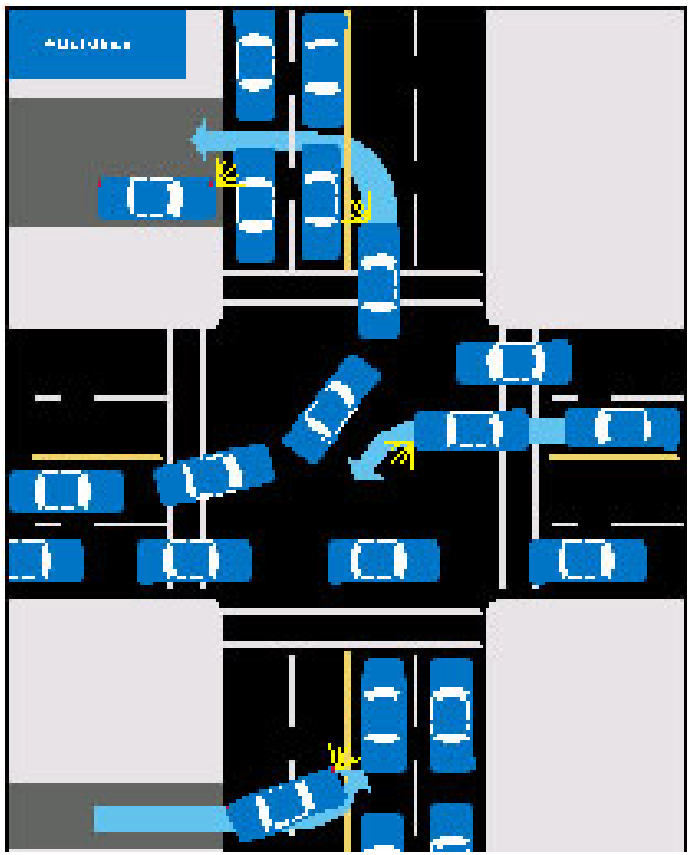
- **Planning for the location, design, and operation of:**
  - Driveways (spacing and design)
  - Medians and turn lanes
  - Intersections

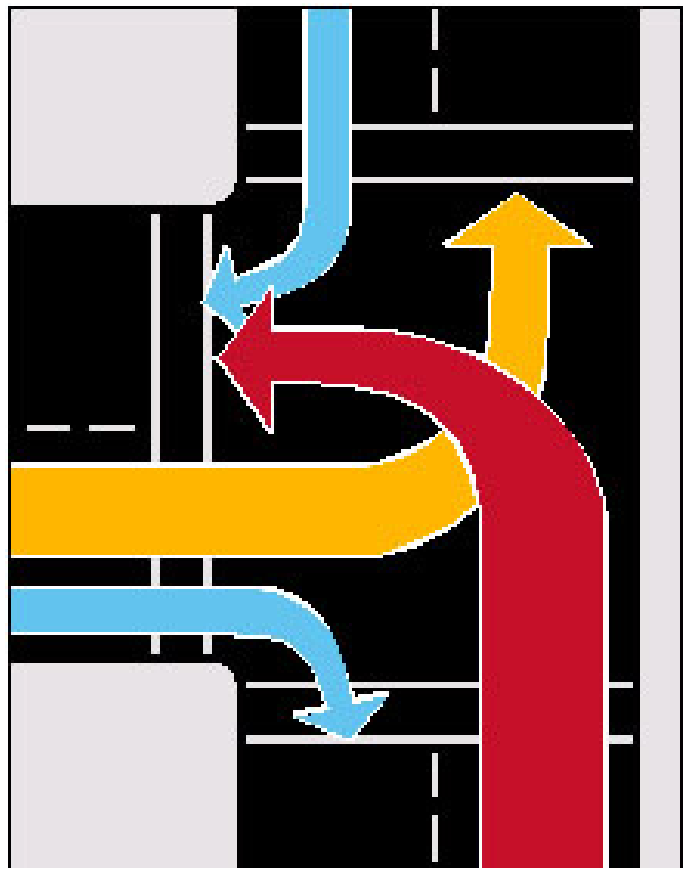
What is the purpose of access management?

- **Provide access to land while preserving the safety and efficiency for facility users**
- **Balance between access to property and through traffic movement**
- **Highway system is key link between people, goods and services**
- **Limit number of potential conflict points**

What contributes to unsafe situations?

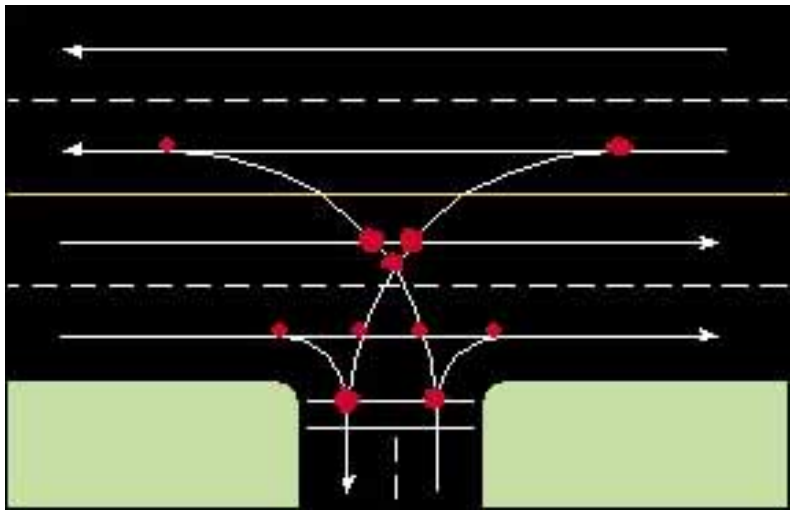
- **Driveways and left turns**





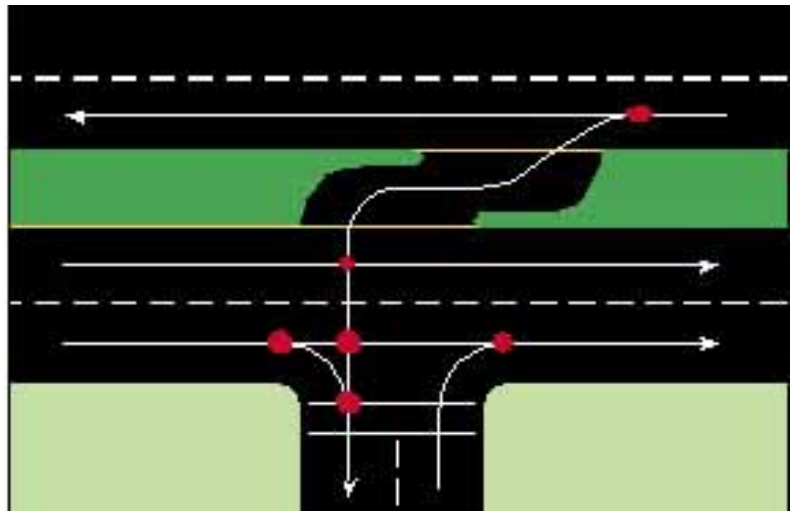
Why does access management work?

Before



11 Conflict Points

After



6 Conflict Points

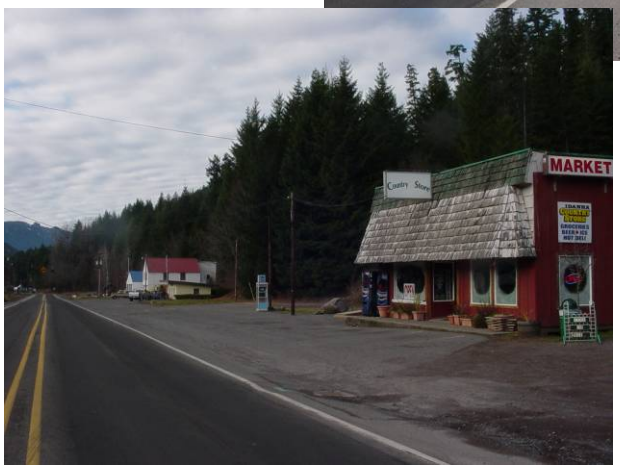
Why access management?

- **Improves Safety**
  - Vehicle
  - Pedestrian & Bicycle
- **Promotes Economic Development**
  - Landscaping & aesthetics
  - Freight & movement of goods
- **Reduces Congestion & Travel Time**

Access Management Reduces Crashes

- **In Oregon, one person dies in a driveway related crash each week**

Access Management Promotes Economic Development



- ***"The most critical element of moving freight on Oregon's highways is the predictability of the travel time."***
  Tom Zelenka, Oregon Freight Advisory Committee

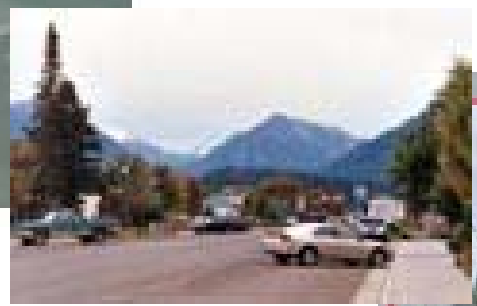
Access Management Reduces Congestion

- **Congestion increases travel time and can cause safety issues**

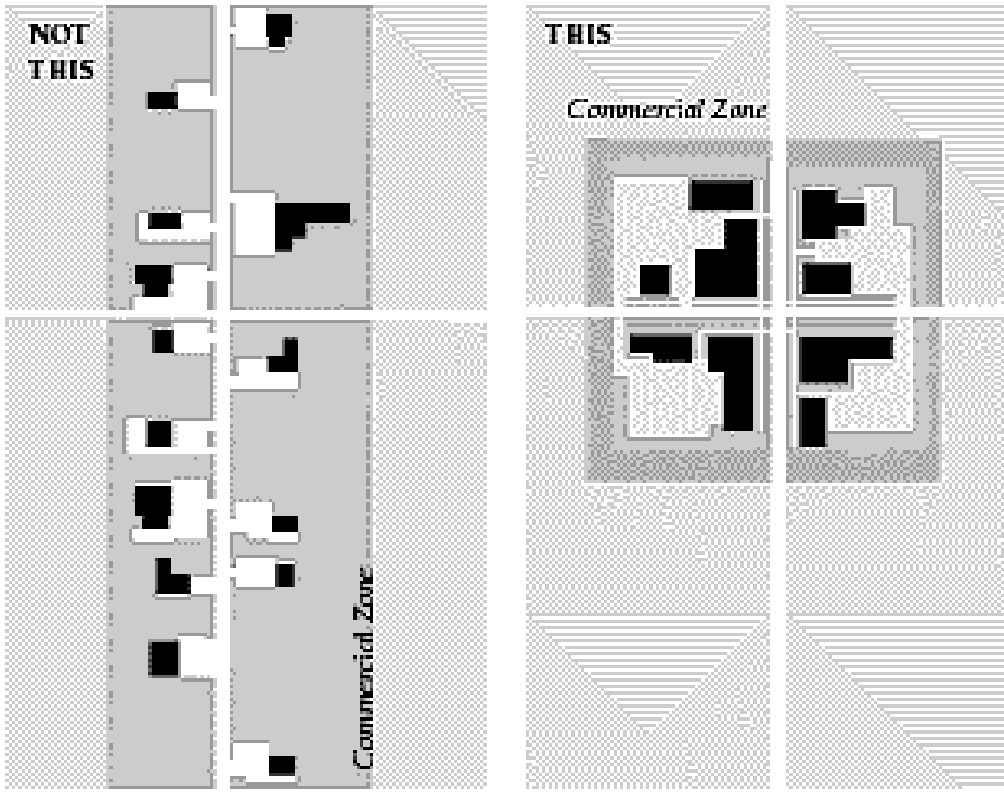
Potential Treatment Options

- **Roadway Improvements**
  - Driveway Consolidation
  - Joint access
  - Driveway Width & Turning Radii
  - Medians
  - Widenings
  - Turn Lanes & Turning controls
  - Visual Contrast & Landscaping
- **Land Use Codes & Planning Ordinances**
  - Site plan/subdivision regulations
  - Permits & process for new & expanded developments
  - Internal site design

Examples: Rural Highways

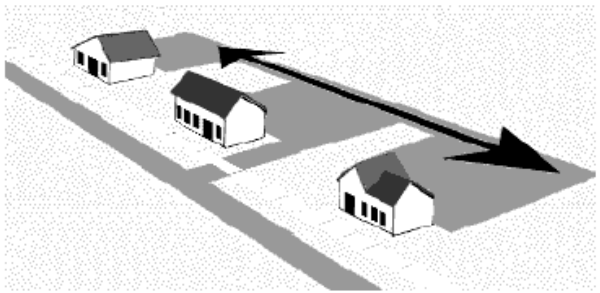


Examples: State Highways

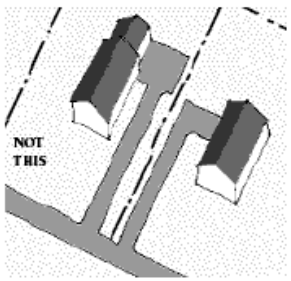


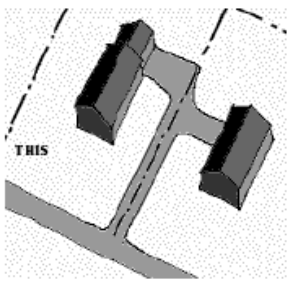
Avoid commercial strip zoning. Look for areas to serve as compact centers for development

Examples: Local Streets



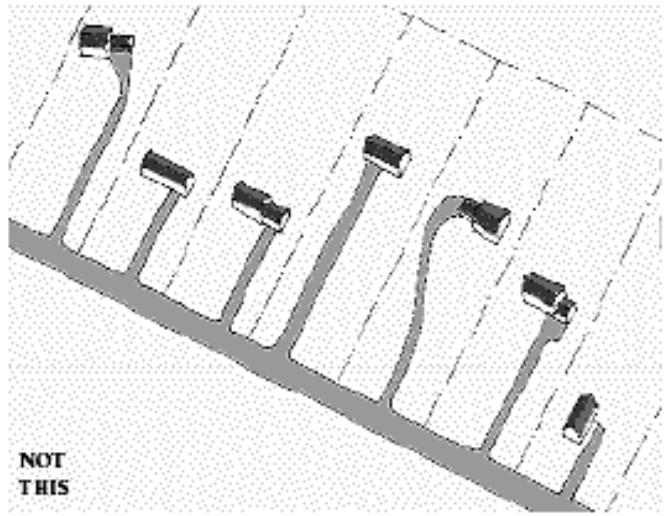
Connect secondary roads or parking areas at the back of lots.

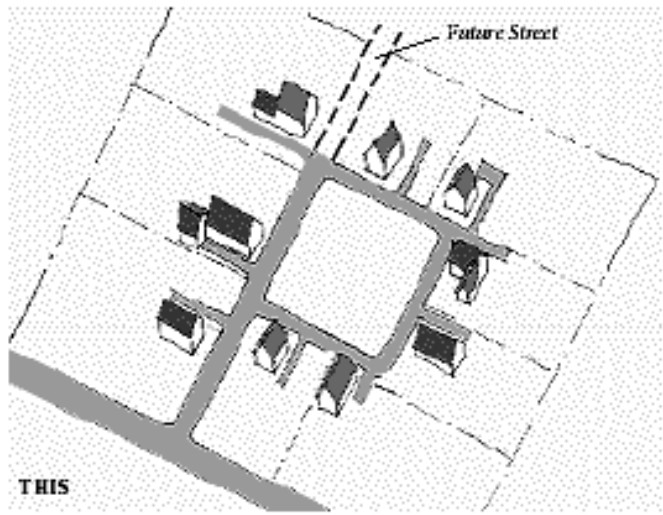




Require shared driveways.

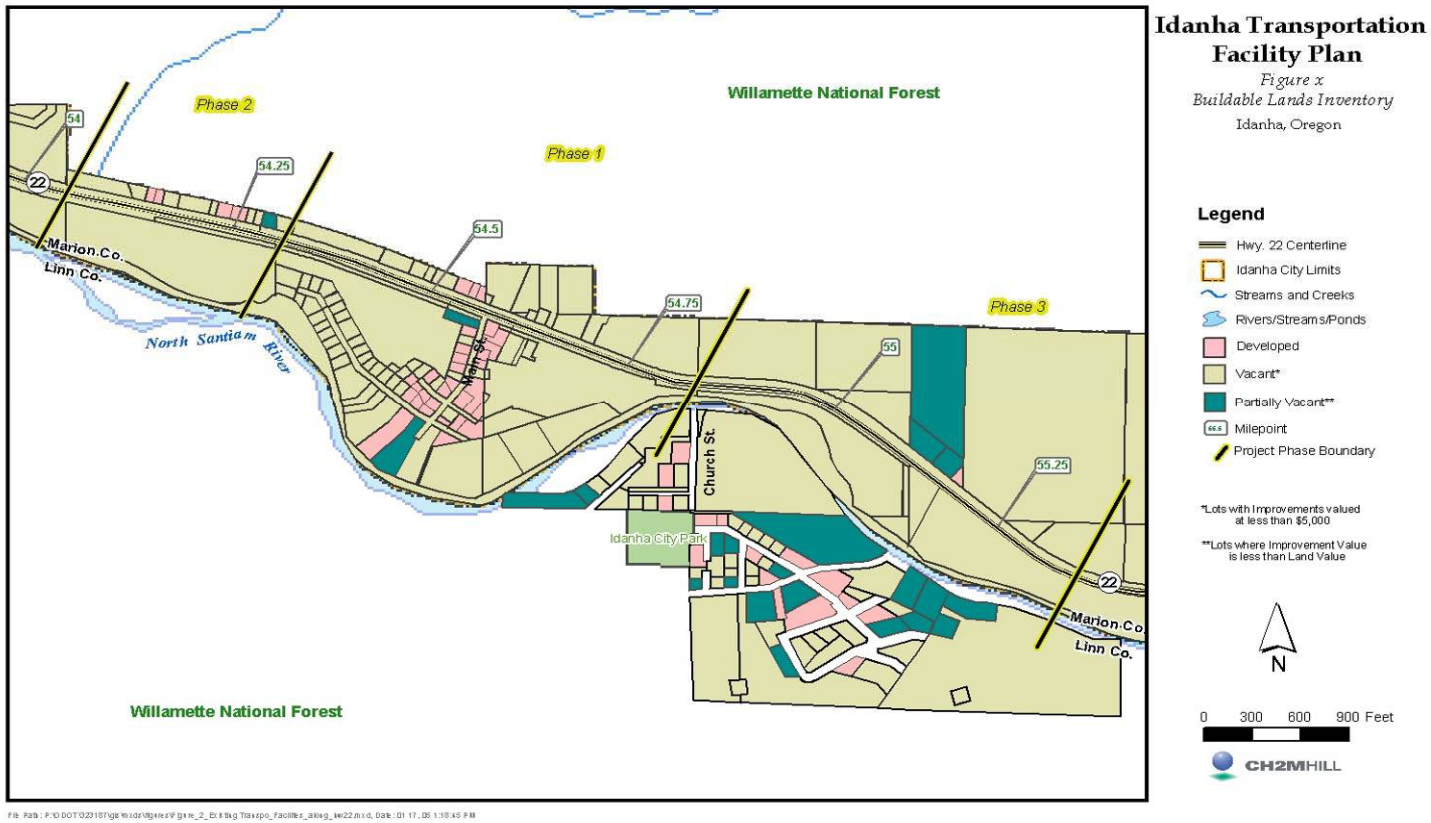
Locate parking areas behind buildings.





Limit the number of access points

Idanha Analysis Area



Highway 22 Access Standards

- **Highway 22**
  - Classified by ODOT as a Rural Principal Arterial (Rural Other)

SPACING STANDARDS FOR STATEWIDE HIGHWAYS						
Rural			Urban			
Posted Speed	Expressway	Other	Expressway	Other	UBA	STA
≥55	5,280	1,320	2,640	1320		
50	5,280	1,100	2,640	1100		
40 & 45	5,280	990	2,640	990		
30 & 35		770		770	720	4
≤25		550		550	520	4

Source: ODOT 1999 Oregon Highway Plan

Note: measured in feet

Idanha Technical Committee

- **Roles and responsibilities**
  - Help identify alternative/options for access and local circulation
  - Screen out infeasible solutions due to local factors
  - Recommend feasible solutions for evaluation to Council and ODOT
- **Things To Think About**
  - Business and individual property access
  - Not precluding future development
  - Median width, shoulder width, and u-turns
  - Bike and pedestrian travel
  - Emergency services

Attachment 5
Left Turn Lane Siting Criteria

ATTACHMENT 5. Left Turn Lane Siting Criteria

The following addresses the concern for the addition of a left turn lane at the intersection of Main Street and OR 22.

According to the 2003 English Highway Design Manual (HDM) - Appendix F, the following steps guide the left turn lane evaluation process:

1) A left turn lane should be installed, if criteria 1 (Volume), or 2 (Crash) or 3 (Special Cases) are met, unless a subsequent evaluation eliminate it as an option, And;

2) The Region Traffic Engineer must approve all left turn lanes on state highways regardless of funding source, And;

3) The State Traffic Engineer shall review and approve all proposed left turn lanes at signalized intersection locations on the State Highway System to ensure proper signal operation, prior to design and construction, And;

4) Complies with Access Management Spacing Standards, And;

5) Conforms to applicable local, regional and state plans.

Criterion 1 – Vehicular Volume

According to the HDM (Appendix F), this left-turn lane criterion is not met when there are zero to ten left turn vehicles per hour. The existing (2005) 30th Highest Hour design volumes at Main Street/OR 22 show that no more than ten vehicles during the peak hour are expected to turn left from either direction at the Main Street intersection, which is lower than the threshold to indicate need for a left turn lane. The future (2025) 30th Highest Hour design volumes at Main Street/OR 22 show that approximately 15 vehicles are expected to turn left at Main Street during a peak hour, which is also lower than the threshold to indicated need for a left turn lane. These volumes do not meet left-turn lane criteria as outlined in Appendix F.

Therefore, the Main Street/OR 22 intersection does not meet Criterion 1 – Vehicular Volume.[1]

Criterion 2 – Crash Experience

Analysis of the five-year crash history through Idanha, and in particular at the OR 22/Main Street intersection, do not indicate a consistent pattern of crashes at the intersection. One crash occurred at the intersection in the past five years in January 2000.

---

[1] It should be noted that because the access is poorly defined on the northern side of OR 22 just east of the OR 22/Main Street intersection, the left turn lane analysis does not account for left turns into the grocery store or adjacent properties If in the future an access management strategy is implemented in Idanha, the intersection should be re-counted and re-examined to see if the changes in roadway access and design would cause the roadway to meet left turn lane criteria. The left turn lane analysis also does not account for any future high-traffic generators located on vacant land near the OR 22/Main Street intersection (e.g. vacant parcel to the southwest). Any future development near this intersection should be required to submit a Traffic Impact Analysis prior to development.

The crash history also does not suggest a condition susceptible to correction with a left turn lane.

Other treatments – such as the addition of pedestrian and bicycle facilities and landscaping – could improve the speed issues on this stretch of roadway by creating a visual narrowing of the roadway and providing a sense of place, and therefore interest, to drivers, potentially resulting in slower speeds.

Crash analysis does not appear to indicate a safety need for a left-turn lane at the OR 22/Main Street intersection, and does not meet Criterion 2 – Crash Experience.

Criterion 3 – Special Cases

The HDM, Appendix F outlines some special cases when a left-turn lane could be considered for a state highway. The following discussion outlines the special cases and addresses the ways in which the Main Street/OR 22 intersection meets or does not meet the criteria:

(1) **Railroad crossings** – This criterion is not applicable at this location.

(2) **Passing lane** – This criterion is not applicable at this location.

(3) **Geometric/safety concerns** – This criterion is not applicable at this location.

(4) **Non-traversable median** – This criterion is not applicable at this location.

(5) **Signalized intersection** – This criterion is not applicable at this location.

The special cases outlined in Appendix F do not relate to the Main Street/OR 22 intersection in Idanha, and the intersection does not meet Criterion 3 – Special Cases.

Attachment 6
Development Code Examples

Attachment 6. Development Code Examples – Joint Access.

Development Code Excerpts on Joint Access/Cross Easements from the City of Hermiston and City of Tualatin

City of Hermiston Zoning Code
Section 157.150 TRANSPORTATION IMPROVEMENTS, STANDARDS, AND PROCEDURES.

(G) Access management. The following access management provisions shall apply to all development and subdivisions subject to the Development Standards of 157.160 et seq.:

(1) Development shall preserve the flow of traffic in terms of safety, capacity, functional classification, and level of services. Access management policies set forth in the city TSP and the Oregon Highway Plan will apply to any proposals for new access or change of existing access.

(2) Residential driveways shall be located to optimize intersection operation and, where possible, to access off the street with the lowest functional classification. For example, if a house is located on the corner of a local street and a minor collector, the driveway shall access from the local street as long as it can be located a sufficient distance from the intersection.

(3) Properties that front on collector or arterial streets are encouraged to share an access with neighboring properties.

(4) Access to state highways is regulated by the Oregon Department of Transportation (ODOT) as described in the Oregon Highway Plan. Umatilla County regulates access to county roads.

(5) A system of joint use driveways, sidewalks, and cross access easements shall be established for commercial and office developments wherever feasible and shall incorporate the following:

(a) A design speed of 10 M.P.H. and a maximum width of 20 feet to accommodate two-way travel aisles for automobiles, service vehicles, and loading vehicles.

(b) A unified access and circulation plan for coordinated or shared parking areas.

(6) Pursuant to (5) above, property owners shall record the following documents with the Umatilla County Recorder:

(a) An easement allowing cross access to and from other properties served by the joint use driveways, sidewalks, and cross access or service drive;

(b) A joint maintenance agreement defining maintenance responsibilities of property owners.

(7) The Planning Director or the Planning Commission may modify or waive the requirements of (5) and (6) above where the characteristics or layout of abutting properties would make development of a unified or shared access and circulation system impractical.

(H) Street standards. Standards for streets, sidewalks, bike lanes, planting strip

City of Tualatin Development Code

Section 73.400 Access.
(1) The provision and maintenance of vehicular and pedestrian ingress and egress from private property to the public streets as stipulated in this Code are continuing requirements for the use of any structure or parcel of real property in the City of Tualatin. No building or other permit shall be issued until scale plans are presented that show how the ingress and egress requirement is to be fulfilled. If the owner or occupant of a lot or building changes the use to which the lot or building is put, thereby increasing ingress and egress requirements, it shall be unlawful and a violation
of this code to begin or maintain such altered use until the required increase in ingress and egress is
provided.
(2) Owners of two or more uses, structures, or parcels of land may agree to utilize jointly the same ingress and egress when the combined ingress and egress of both uses, structures, or parcels of land satisfies their combined requirements as designated in this code; provided that satisfactory legal evidence is presented to the City Attorney in the form of deeds, easements, leases or contracts to establish joint use. Copies of said deeds, easements, leases or contracts shall be placed on permanent file with the City Recorder.
(3) Joint and Cross Access
(a) Adjacent commercial uses may be required to provide cross access drive and pedestrian access to allow circulation between sites.
(b) A system of joint use driveways and cross access easements may be required and may incorporate the following:
(i) a continuous service drive or cross access corridor extending the entire length of each block served to provide for driveway separation consistent with the access management classification system and standards.
(ii) a design speed of 10 mph and a maximum width of 24 feet to accommodate two way travel aisles designated to accommodate via a service drive;
(iv) a unified access and circulation system plan for coordinated or shared parking areas.
(c) Pursuant to this section, property owners may be required to:
(i) Record an easement with the deed allowing cross access to and from other properties served by the joint use driveways and cross access or service drive;
(ii) Record an agreement with the deed that remaining access rights along the roadway will be dedicated to the city and pre-existing driveways will be closed and eliminated after construction of the joint-use driveway;
(iii) Record a joint maintenance agreement with the deed defining maintenance responsibilities of property owners;
(iv) If (i-iii) above involve access to the state highway system or county road system, ODOT or the county shall be contacted and shall approve changes to (i-iii) above prior to any changes.
(4) Requirements for Development on Less than the Entire Site
(a) To promote unified access and circulation systems, lots and parcels under the same ownership or consolidated for the purposes of development and comprised of more than one building site shall be reviewed as one unit in relation to the access standards. The number of access points permitted shall be the minimum number necessary to provide reasonable access

to these properties , not the maximum available for that frontage. All necessary easements, agreements, and stipulations shall be met. This shall also apply to phased development plans. The owner and all lessees within the affected area shall comply with the access requirements.

(b) All access must be internalized using the shared circulation system of the principal commercial development or retail center.