

Aumsville

OR 22/Shaw Highway
Interchange Area Management Plan



City of
Aumsville

Prepared for
City of Aumsville
595 Main Street
Aumsville, OR 97325

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CITATION

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), local government, and State of Oregon funds.

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Parametrix. 2010. OR 22/Shaw Highway Draft Interchange Area Management Plan.
Prepared by Parametrix, Portland, Oregon. October 2010.

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ACRONYMS

CBD	Commercial Business District
DLCD	(Oregon) Department of Land Conservation and Development
DUs	Dwelling Units
EB	Eastbound
HCM	Highway Capacity Manual
HDM	Highway Design Manual
HV	(30) HV refers to 30 th highest hourly traffic volume
Hwy	Highway
IAMP	Interchange Area Management Plan
ID	Interchange Development (zone)
LOS	Level of Service
MEV	Million Entering Vehicles
MUTCD	Manual on Uniform Traffic Control Devices
MVMT	Million Vehicle Miles of Travel
NB	Northbound
NHS	National Highway System
OAR	Oregon Administrative Rules
ODOT	Oregon Department of Transportation
OHP	Oregon Highway Plan
OTC	Oregon Transportation Commission
OTP	Oregon Transportation Plan
PAC	Planning Advisory Committee
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SB	Southbound
Synchro	HCM compatible traffic analysis software for intersections
TAC	Technical Advisory Committee
TDM	Transportation Demand Management
TPAU	Transportation Planning Analysis Unit (of ODOT)
TPR	Transportation Planning Rule (Oregon state planning goal 12)
TSP	Transportation System Plan
UGB	Urban Growth Boundary
V/C	Volume-to-capacity (ratio)
WB	Westbound

1. INTRODUCTION

The City of Aumsville is located in the Mid-Willamette Valley, nine miles east of Oregon's capital, Salem. The City is situated on the south side of OR 22 (North Santiam Highway) which provides its major connection to the regional transportation system via a grade-separated interchange at Shaw Highway. Not only does this interchange provide primary regional access to the City, it also serves a variety of other rural destination in the central portion of Marion County east of Interstate 5. While there are no existing capacity or safety problems at this interchange, future growth within the City is anticipated to create some operational deficiencies. This Interchange Area Management Plan (IAMP) was developed in conjunction with a Transportation System Plan (TSP) for the City and relies heavily on the analysis and documentation included in that document.

Collectively, the TSP and IAMP identify and support the values of the Aumsville community related transportation and land use, and provide a policy and regulatory framework to guide transportation decisions to address both short term and long term needs over the coming decades. The development of both the TSP and the IAMP has been coordinated to ensure consistency in assumptions, technical analysis approach; improvement recommendations, and supporting ordinances and implementation strategy. The planning process has incorporated local citizen participation and was coordinated with local, County, regional and State stakeholders.

1.1 PURPOSE AND INTENT

Oregon Administrative Rule (OAR) 734-051-0155(5) encourages preparation of an IAMP for all interchanges and requires preparation for any new or significantly reconstructed interchange in OAR 734-051-0155(6). In addition, Oregon Highway Plan (OHP) policies direct the Oregon Department of Transportation (ODOT) to plan and manage interchange areas for safe and efficient operations.

The purpose of this IAMP is to protect the function of the OR 22 and Shaw Highway interchange as local land development activity continues to occur and traffic levels affecting the interchange increase over time. Any new construction or reconstruction of the interchange will be very expensive and there is a public fiscal interest in preserving the state's investment in future improvements. This can be accomplished by ensuring that the on-going operation of the interchange is safe and efficient, and by minimizing the need for future interchange improvements, both of which were addressed in the preparation of this IAMP.

The decision to prepare an IAMP for the interchange of OR 22 with Shaw Highway was based on the need to evaluate potential impacts and improvement needs associated with planned or potential community development in the vicinity. Information about existing and anticipated future traffic conditions at this interchange is provided below in the discussion under Problem Statement.

Adoption of an IAMP will help to ensure that the interchange area continues to operate and function as designed, accommodates long-term capacity needs of the system and supports community needs. The land use and access control measures established in the IAMP will provide property owners and developers with an additional level of certainty on the types of development expected in the interchange vicinity, obtaining access to a state highway, and the level of transportation improvements that reasonably can be expected to support future development.

1.2 PROBLEM STATEMENT

As approximately 75 percent of the city's current labor force works outside of Aumsville, many people make a daily commute to other communities in the Willamette Valley where jobs are located, particularly the City of Salem. Aumsville is located approximately 6 to 10 minutes from I-5 via OR 22 and most vehicles traveling between the City and other destinations use this interchange.

At this time, no improvement projects have been identified for this interchange. The existing ramp termini intersections on Shaw Highway operate acceptably with a volume-to-capacity ratio of 0.06 at the westbound ramp termini (for eastbound left turns), and 0.40 for the eastbound ramp termini (for westbound left turns heading into Aumsville). However, analysis of the traffic consequences of building out the City's UGB, indicate that some improvements to the interchange will likely be needed. With an anticipated population growth of 61 percent from 3,535 (in 2008) to 5,706 (in 2030), a total of 2,852 new 30th highest hour trips are anticipated to be generated. Over half of this estimated traffic increase is expected to use the OR 22/Shaw Highway interchange.

Of particular importance to future traffic operations at the OR 22/Shaw Highway interchange is the City's recently adopted new land use zone (ID or Interchange Development). This zone is intended to provide flexibility to develop property near the OR 22 interchange. While primarily industrial in nature, the zone will also include a reasonable variety of commercial activities such as offices or highway-related businesses that do not conflict with existing businesses in downtown Aumsville. As indicated in the Zoning and Comprehensive Plan amendment for the ID zone, there were many reasons for its adoption. First of all, it was envisioned that the zone would help the city to take full economic advantage of the OR 22 interchange by providing high quality access to high value employment uses, particularly those that are most dependent on freeway access. The new zone would also help to add to the City's industrial land supply to encourage employment growth within the community. The second primary objective was to provide a more attractive entrance to the city as greater emphasis would be placed on design elements for land development projects.

The need for the transportation system improvements at the OR 22/Shaw Highway interchange are identified and discussed in the assessment of existing and future conditions in Chapters 2 and 3, respectively, in this report. This information is excerpted from the City's Transportation System Plan which provides greater detail.

1.3 FUNCTIONAL CLASSIFICATION AND INTERCHANGE FUNCTION

The intended function of the OR 22/Shaw Highway interchange is to safely and efficiently accommodate existing and future traffic demand associated with community growth in the City of Aumsville and existing rural land uses in Marion County consistent with City and County Comprehensive Plans. Service to existing uses and/or development that maximize job creation will be a priority. OR 22 is a Statewide Highway and Freight Route, and is part of the National Highway System (NHS). In the vicinity of Aumsville, OR 22 is also an Expressway with grade-separated interchanges such as the one intersecting Shaw Highway. This interchange is a rural facility that provides direct access into the City of Aumsville and to the farmland that surrounds the city on either side of the State Highway. Shaw Highway is a County owned and maintained roadway facility that has been designated as an urban collector and major rural collector. The jurisdictional responsibility for and classification of roadways in the IAMP study area are shown in Table 1-1 below.

Table 1-1. Functional Classification and Roadway Jurisdiction

Street	Limits	Functional Classification	Jurisdiction
OR 22 westbound ramps	On Shaw Highway at OR 22	Principal Arterial	ODOT
OR 22 eastbound ramps	On Shaw Highway at OR 22	Principal Arterial	ODOT
1 st Street/Shaw Highway	Main Street to OR 22 centerline	Arterial	Marion County
1 st Street/Shaw Highway	OR 22 centerline to westbound ramps	Major Collector	Marion County
1 st Street/Shaw Highway	OR 22 westbound ramps to north	Minor Collector	Marion County
Beaver Creek Road	1 st Street to terminus	Local Road	Aumsville
Del Mar Drive	1 st Street to 10 th Place	Collector	City of Aumsville
Gordon Lane	1 st Street to terminus	Private	Private

1.4 IAMP STUDY AREA

ODOT Guidelines for preparing Interchange Area Management Plans include a discussion to guide establishment of physical boundaries for the IAMP. According to the guidelines, the IAMP needs “to encompass land uses, developable and redevelopable properties, and major roadways that would significantly affect the interchange function over the long-term (20 or more years)”. IAMP boundaries typically extend beyond the ODOT right-of-way with a minimum area 1,320 feet (¼ mile) from the interchange ramp terminals in both directions. This is the minimum distance established by OAR Division 51 to the first intersection where left turns are allowed. Determination of boundaries for the OR 22/Shaw Highway interchange also took into account:

- Existing and planned land uses in the vicinity that will impact the interchange
- Transportation facilities and traffic operations including key roads and intersections that would affect traffic operations in the interchange area over the planning horizon.
- Natural and cultural resources that could be impacted (this effect is expected to be minimal due to the lack of the a specific improvement project at the interchange)
- Access management needs and standards that would affect the provision of property access in the vicinity of the interchange.

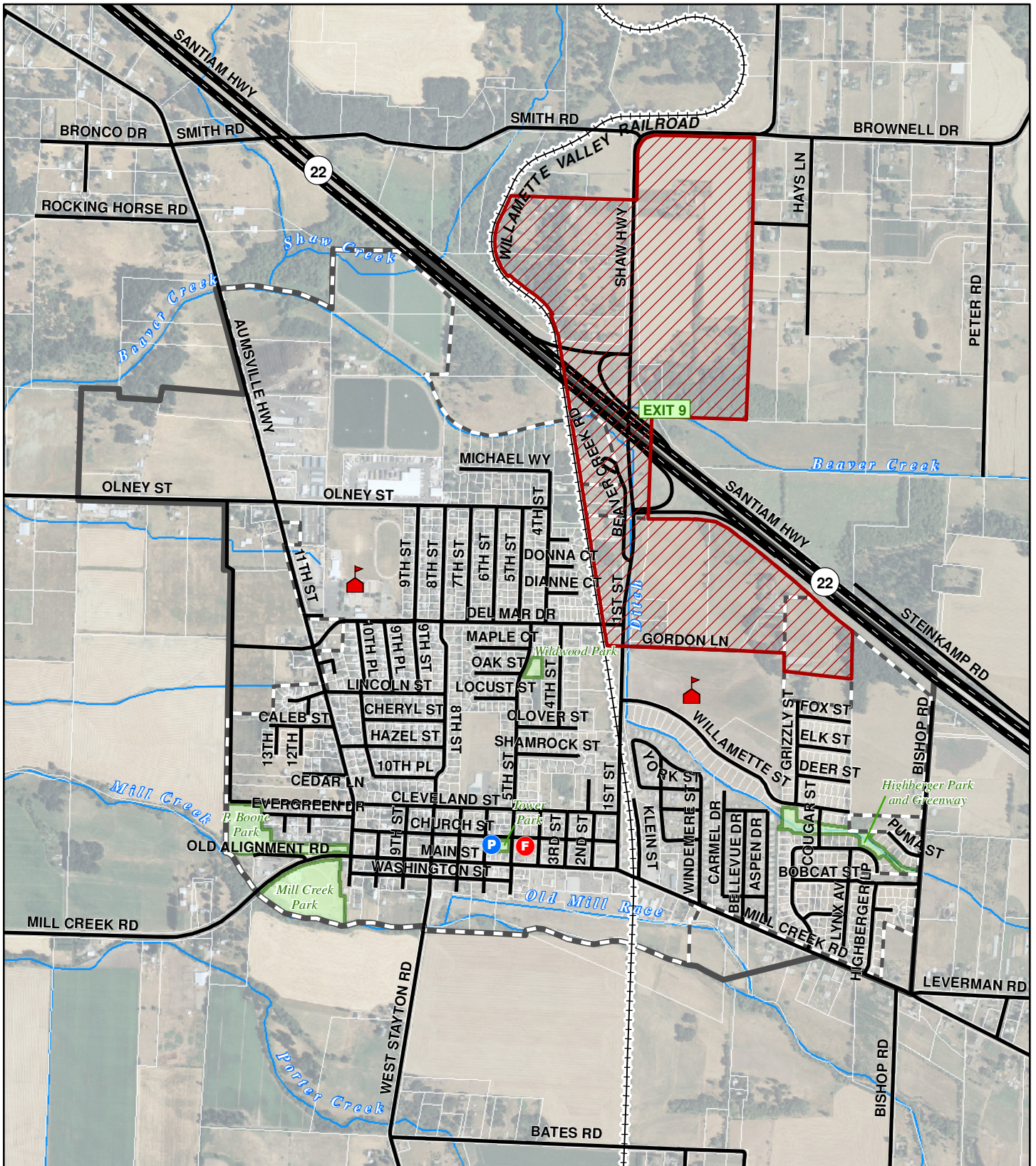
Based on consideration of the foregoing factors and the identified need for long-term improvements at the interchange, the IAMP study area focused along Shaw Highway/1st Street for ¼ mile on either side of the ramp terminal intersections. The southern limit of this boundary would include the intersection of 1st Street with Del Mar Drive reaching southward to the small intersection with Gordon Lane (a private road). This area would include the property recently rezoned for ID (Interchange Development) where the development of employment-based land uses will be encouraged. Access to that property is proposed for the intersection of 1st Street with East Del Mar Drive, a new street which would intersect the existing intersection across from Del Mar Drive. This area would also include the existing intersection with Beaver Creek Road north of Del Mar Drive on the west side of Shaw Highway.

On the west side of 1st Street/Shaw Highway, the IAMP boundary would include all parcels between the road and the Willamette Valley Railroad tracks from Gordon Lane to the

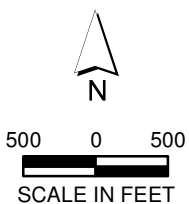
northern edge of a parcel located north of OR 22, approximately ¼ mile from the westbound ramp intersection. On the east side of 1st Street/Shaw Highway, the IAMP boundary would follow the ID-zoned property lines to the intersection with the eastbound ramp termini. The easterly boundary would then continue north through the interchange and encompass all parcels along the east side of Shaw Highway to a location just west of the Shaw Highway/Brownell Drive intersection. The northern edge of the IAMP boundary runs along the east/west section of Shaw Highway.

The area shown within the IAMP boundary has been identified for purposes of reporting information and developing recommendations related to the interchange and its long-term functionality. However, it should be noted that since the IAMP is being prepared within the context of a community-wide TSP, the analysis boundary will include the entire TSP study area.

The proposed IAMP boundary is illustrated in Figure 1-1.



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








-  Highway
-  Street Centerline
-  Willamette Valley Railroad
-  Aumville Fire Department
-  School
-  Aumville Police Department
-  Interchange Area Management Plan Boundary
-  City Limits
-  Urban Growth Boundary
-  Taxlot
-  Park
- Streams and Drainage Ditches

Figure 1-1

Aumville Study Area

2. EXISTING CONDITIONS INVENTORY AND DATA ANALYSIS

This chapter presents a discussion of the existing policy context for the IAMP, as well as existing land use, transportation and environmental conditions.

2.1 POLICY CONTEXT

As an initial step in the planning process for the TSP and IAMP, applicable City, County, and State plans and policies relevant to the planning process were reviewed. The purpose of this review was to provide a policy context for the planning effort, help ensure that proposed projects were consistent with existing relevant plans and policies, and aid in the development of implementing ordinances for the transportation plan.

All transportation improvements are subject to numerous state and federal requirements and are influenced by the transportation plans of other jurisdictions, transportation studies that have been previously conducted in the community, and other transportation-related documents and standards. The City and County TSPs serve to guide development of transportation improvements in the study area. The following laws, plans, programs and other documents have been reviewed. A detailed discussion of these documents is available in TSP *Technical Memorandum #4: Existing Plans, Policies, Standards and Laws*.

- Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (2005) (Federal transportation funding legislation)
- Federal Americans with Disabilities Act (ADA)
- Oregon Transportation Plan (2006)
- Oregon Transportation Planning Rule (last major amendment 2003)
- Oregon Highway Plan (1999, as amended)
- Oregon Highway Design Manual (2003)
- Oregon Administrative Rules regarding access management (OAR 734-051)
- Freight Moves the Oregon Economy (1999)
- Statewide Transportation Improvement Program 2008-2011
- Oregon Bicycle and Pedestrian Plan (1995)
- City of Aumsville Comprehensive Plan (adopted 1999)
- City of Aumsville Development Ordinance
- Marion County Comprehensive Plan, Transportation Element (adopted 1998 and updated 2005)
- Marion County Rural TSP (2005)
- City of Aumsville Visioning Plan (2008)
- Oregon Downtown Development Association's Resource Team Program Evaluation (2003)
- Economic Opportunities Analysis (2002)

2.2 COMMUNITY DEMOGRAPHICS

This section presents existing population and employment information for the Aumsville study area. Population and employment data was based on information provided by the 2000 US Census, population estimates provided by the Portland State University Center for Population Studies and other resources.

The first settlers in what became the City of Aumsville arrived in 1843, the same year as the conference at Champoeg voted to establish a provisional government for Oregon under the flag of the United States. The population of Aumsville has grown erratically from 1878 when 40 persons were recorded as living in the community. By 1893, Aumsville had grown to 150 persons and to 400 by 1917. The population dropped significantly during the First World War such that by 1920 it stood at 171 persons. The population level has slowly grown from that point to 300 in 1960, 590 in 1970, and 1,650 in 1990.

During the decade between 1990 and 2000, the population of Aumsville grew from 1,650 persons to 3,003 persons representing an increase of over 80 percent or an annualized rate of 6.17 percent. The 2008 certified population estimate is 3,535 persons, while the population estimate for 2015 is 4,177, and 5,706 for 2030¹.

Modern Aumsville remains a rural center which also has a diversity of employment opportunities within reasonable driving distance. Based on the 2000 US Census, there were 1,387 employed persons residing in Aumsville. The 2002 *Economic Opportunities Analysis* estimated that approximately 341 employees commuted to local jobs within the City while the rest (1,046 employees) traveled to destinations outside of the city such as Stayton or Salem. This translates into one local worker for every three who commute outside the city.

Aumsville is actively seeking new and/or expanded employment opportunities to be located within the city. A recent UGB expansion to add land to the city's industrial resource base and the adoption of the ID zone are both intended to encourage employment growth within the city.

2.3 EXISTING LAND USE CHARACTERISTICS

Land use data was provided by the City and includes a summary of existing zoning and development patterns, along with estimates of vacant and developable property that could be put into urban uses in the future.

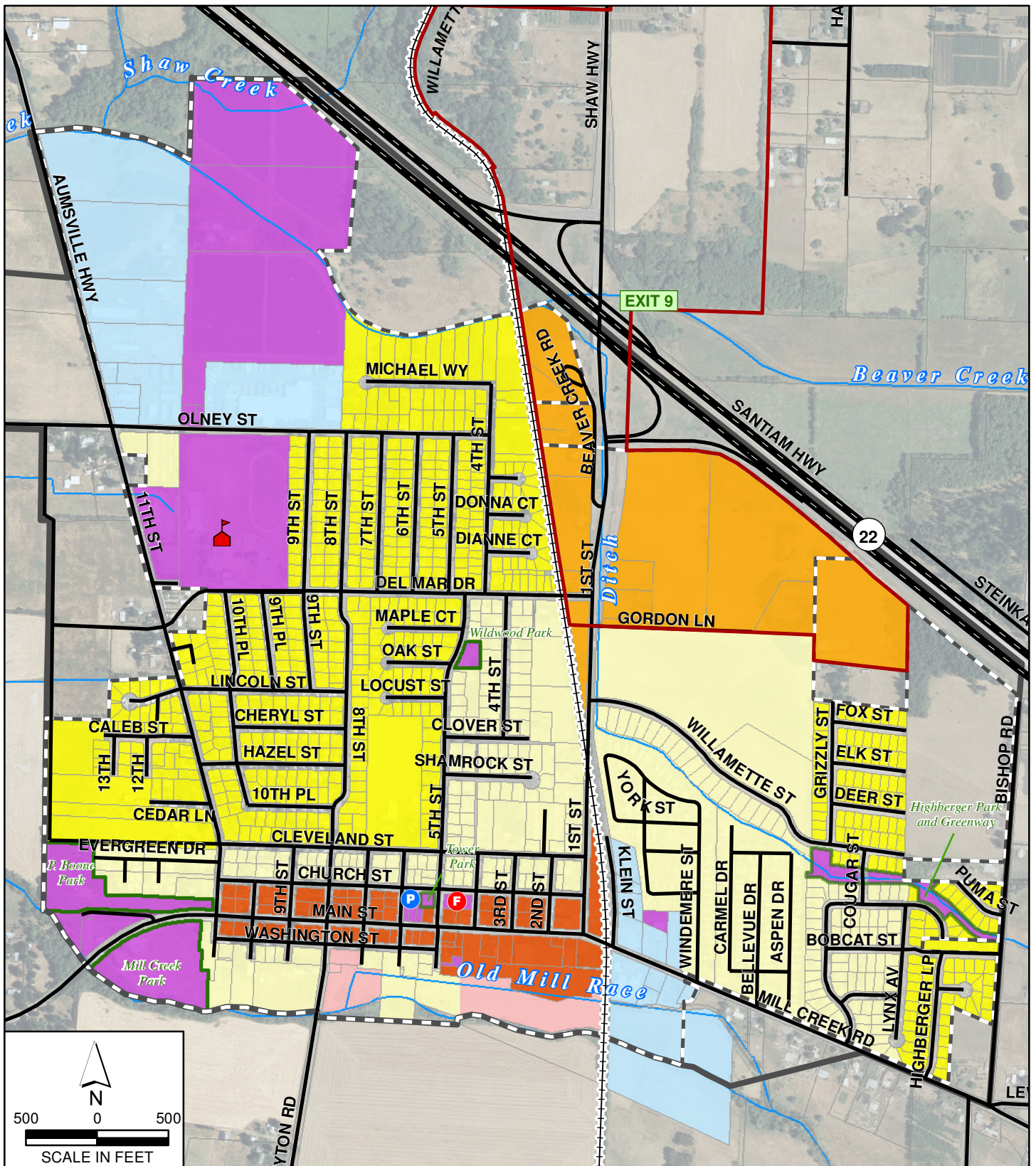
The UGB for the City of Aumsville is approximately 640 acres in size. The land within the city limits is subject to the Aumsville land use ordinances and policies including the Comprehensive Plan and the Development Ordinance. The Comprehensive Plan uses seven designations for all lands within the City: Industrial (I), Public (P), Residential Multi-Family (RM), Residential Single Family (RS), Commercial (CL), Commercial Business District (CL) and Interchange Development (ID). See Table 2-1 for a summary of the acreage of land in the City of Aumsville by land use category Existing zoning is illustrated in Figure 2-1.

Table 2-1. City of Aumsville Comprehensive Plan Designations

Designation	Acreage
Residential Single Family (RS)	231.7
Residential Multi-Family (RM)	135.4
Commercial / CBD ¹ (CL)	28.3
Interchange Development (ID)	59.5
Industrial (I)	111.4
Public(P)	73.0

Note: ¹ CBD means Commercial Business District
 Source: City of Aumsville, 2009.

¹ 2030 Population Forecast for cities in Marion County, Marion County, May 2009.



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|-----------------------------|------------------------------|------------------------------|
| Highway | Interchange Area Management | Commercial |
| Street Centerline | Plan Boundary | Commercial Business District |
| Willamette Valley Railroad | City Limits | Industrial |
| Aumsville Fire Department | Urban Growth Boundary | Interchange Development |
| Aumsville Elementary School | Taxlot | Public |
| Aumsville Police Department | Park | Residential Multi-Family |
| | Streams and Drainage Ditches | Residential Single-Family |

Figure 2-1
Aumsville
Zoning
Designations

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Most of the land in single family designation is situated north of Cleveland Street, and generally west of 5th Street and east of 11th Street. Some relatively new single family residential development has been constructed west of 11th Street between Cleveland and Lincoln Streets, and in the eastern portion of the city, and largely south of Willamette Street with a small subdivision to the north of Willamette Street. Multi-family residential designations are located largely south of Washington Street, between Church and Cleveland Streets, between 5th and 1st Streets south of Del Mar Drive, and along Willamette Street. There are also two large mobile home parks located north of Mill Creek Road between Klein Street and Lynx Avenue.

Commercially-designated land typically clusters along Main Street between 11th and 1st Streets and is identified for Commercial Business District (CBD) uses. Other commercial property is located south of the CBD between 8th Street and the railroad tracks. Industrial development is largely concentrated along Mill Creek Road east of the railroad tracks and in the northwestern corner of the city north of Olney Street. Public uses include the Aumsville Elementary School on 11th Street south of Olney Street, the City's sewage treatment facility in the northern portion of the city (east of and adjacent to industrial uses along Aumsville Highway), Porter Boone and Mill Creek Community Parks, the Aumsville Civic Center in the block bounded by 5th Street, Church Street, 6th Street and Main Street, and the County facilities near the western edge of the UGB on Mill Creek Road. Within the Civic Center complex are located the city police department, fire department, the Chester Bridges Memorial Community Center, City Hall, and the Aumsville Museum and History Center.

The ID zone was recently adopted by the City and is intended to provide flexibility to develop property near the OR 22 interchange. While primarily industrial in nature, the zone will also include a reasonable variety of commercial activities such as offices or highway-related businesses that do not conflict with existing businesses in downtown Aumsville. As indicated in the Zoning and Comprehensive Plan amendment for the ID zone, there were many reasons for its adoption. First of all, it was envisioned that the zone would help the city to take full economic advantage of the OR 22 interchange by providing high quality access to high value employment uses, particularly those that are most dependent on freeway access. The new zone would also help to add to the City's industrial land supply to encourage employment growth within the community. The second primary objective was to provide a more attractive entrance to the city as greater emphasis would be placed on design elements for land development projects.

2.4 TRANSPORTATION SYSTEM FACILITIES AND OPERATIONS

An early activity in the TSP and IAMP planning process involved a review of existing multi-modal transportation conditions to determine how well that transportation system currently operates. Roadway and intersection traffic volumes, sidewalk, bike lane and pavement conditions, public transportation and travel demand management activities, as well as rail, air, water and pipeline transportation were all reviewed with the goal of understanding the City's transportation system and to highlight any short-term needs for improvement. The paragraphs below highlight key findings and conclusions that are more fully documents in the TSP and its supportive technical memoranda.

The street system in Aumsville is characterized by a grid of local, collector, and arterial streets that offer reasonably good connectivity throughout the community (see Figure 1-1). A backbone system of arterials provides access into and out of the city, and includes 1st Street/Shaw Highway, 11th Street /Aumsville Highway, and Main Street/Mill Creek Road. Regional

access to the rest of the State is provided via the interchange of Shaw Highway with OR 22. Key findings with respect to the existing street system are presented below.

Existing Street System Characteristics

This section describes the physical characteristics of the street and highway system in the Aumsville urban area. The four major street classifications are further described below.

Highways

OR 22

Aumsville is served by one state highway, OR 22. OR 22 generally runs northwest to southeast immediately north of the Aumsville city limits. It provides regional connectivity for the City, linking it to other nearby communities and the remainder of the State. Aumsville has no direct control over the state highway; however, adjacent development and local traffic patterns are heavily influenced by the state highway. OR 22 is on the National Highway System (NHS), and, in the adopted OHP, it is classified as a statewide highway, state freight route, federally designated truck route and expressway. The posted speed on OR 22 in the study area is 55 mph.

Arterials

Mill Creek Road/Main Street

In Aumsville, Mill Creek Road/Main Street is a two-lane County-maintained road and is designated by the city as an Arterial facility. Outside of the UGB, Mill Creek Road has been designated as a Rural Major Collector by Marion County. This road connects Aumsville to the City of Turner on the west and to the cities of Stayton and Sublimity on the east. Mill Creek Road/Main Street serves as the commercial core for Aumsville between 11th and 1st Streets. The posted speed west of 11th Street is 35 mph, dropping to 30 mph between 11th Street and the east city limits, and then increasing to 45 mph. Within the city limits, Mill Creek Road/Main Street has sidewalks on at least one side of the roadway. According to the Comprehensive Plan, Mill Creek Road/Main Street has an estimated design capacity of 28,000 vehicles per day.

North Shaw Highway/1st Street

North Shaw Highway/1st Street is a two-lane facility and has been designated by the City as an Arterial from Main Street to the UGB (centerline of OR 22). Marion County has designated Shaw Highway as a Rural Major Collector from the Aumsville UGB to the OR 22 westbound ramps, and as a Rural Minor Collector from the OR 22 westbound ramps to the north. This road provides a direct connection between various destinations in Aumsville and OR 22 to the north. The posted speed from Main Street to the city limits is 45 mph, increasing to 55 mph immediately north of the eastbound OR 22 interchange ramp termini. North Shaw Highway/1st Street has approximately 24-feet of pavement width with little or no shoulders. Although this street is a school bus route and has recently seen new adjacent development that generates pedestrian traffic, there are no sidewalks. There are two existing drainage ditches paralleling 1st Street, generally between the OR 22 interchange and Willamette Street. The larger of the two is located on the east side of the street and provides both storage and conveyance functions. The Willamette Valley Railroad has an at-grade, skewed angle crossing of 1st Street between Willamette and Cleveland Streets. This crossing has advance signing and pavement marking but no active warning devices. According to the Comprehensive Plan, North Shaw Highway/1st Street has an estimated design capacity of 24,000 vehicles per day.

Aumsville and Marion County recently received an ODOT grant to improve the cross-section of 1st Street between Willamette and Main Streets. This improvement would construct sidewalks and bike lanes on both sides of 1st Street from Main Street to Cleveland Street, and on the west side of 1st Street from Cleveland Street to Willamette Street.

Collectors

Aumsville's network of Collector streets link residential neighborhoods with smaller community centers and facilities, as well as providing access to the arterial system. Property access is generally a higher priority for collector streets than for arterial streets, while through-traffic movements are served as a lower priority. The city's collector street system was identified earlier in this chapter and is illustrated in Figure 4-5 in the TSP. Available right-of-way for most collector streets is 60 feet (the exception being portions of Bishop Road where existing right-of-way varies between 40 and 50 feet. Additional right-of-way along this street will be obtained as part of the Flowers Phase IV development.).

Street widths along the collector street system vary from 20 to 40 feet depending on location with narrow street segments being found primarily along Bishop Road, Church Street and Cleveland Street. Sidewalks are present along portions of all collector streets in the city but gaps do exist as described later in this chapter. Detailed information about collector street cross-sections and features is included in Appendix A of *Technical Memorandum 5: Inventory*.

Within the OR 22/Shaw Highway IAMP boundary, Del Mar Drive is the only designated Collector Street.

Local Streets

Local streets have the sole function of providing access to immediately adjacent land. Local streets connect housing, commercial, and industrial land uses with the collector and arterial system. Property access is the main priority of local streets and through traffic movement is not encouraged. Typically on-street parking is permitted. In the Aumsville UGB, most local streets have 60 feet of right-of-way and pavement widths of 36 to 40 feet. In some locations narrower right-of-way is available, ranging from 30 to 50 feet. Narrower street widths are also provided in these locations, ranging from 12 to approximately 30 feet. Sidewalks are provided on many local streets as discussed later in this chapter. Detailed information about local street cross-sections and features is included in *Technical Memorandum 5: Inventory*.

Pavement Conditions

Pavement conditions evaluation for streets within the study area is presented in Appendix A of this TSP and summarized in the tables below. The City of Aumsville and Marion County use a pavement condition rating system with five categories: very good, good, fair, poor and very poor. These ratings are based on a Pavement Conditions Index (PCI) that reflects the type, severity, and amount of pavement distress (such as cracking, potholes, or other problems). The PCI is continually updated and offers the ability to review changes in pavement conditions over time.

Existing pavement along 1st Street between Del Mar Drive and the northern city limits is rated as Good. This road was last overlaid in 1991. To the south of Del Mar Drive, the pavement condition of 1st Street is rated as Fair. As noted above, in cooperation with Marion County, the City is currently designing and will shortly be constructing an improvement to 1st Street that will to add bicycle lanes and sidewalks for a segment generally south of Willamette Street (south of Cleveland Street on the east). This project will improve the existing Fair pavement condition.

Existing Bridges

There are five bridges within or near the city limits, the Shaw Highway Bridge over OR 22, the Aumsville Highway Bridge over Beaver Creek (#47C27), the Mill Creek Road Bridge over Mill Creek (#6008A), the West Stayton Road Bridge over Mill Creek (#4714), and the Bishop Road Bridge over Mill Creek (#47C71).

Shaw Highway Bridge at OR 22

A key bridge serving the Aumsville UGB is the Shaw Highway Bridge over OR 22. This bridge was built in 1997, and is owned and operated by ODOT. The bridge is constructed of pre-stressed concrete. Based on the 2008 ODOT bridge conditions report this structure is in Good condition with a sufficiency rating of 93.3 (out of 100). The existing structure has a 40-foot barrier-to-barrier width with two 8-foot shoulders and two 12-foot travel lanes.

Existing Intersection Configurations

There are no traffic signalized intersections in the study area. Intersections are typically stop sign-controlled for side street traffic movements only. Existing lane configurations and traffic control for the fourteen TSP study area intersections are shown in Figure 2-2.

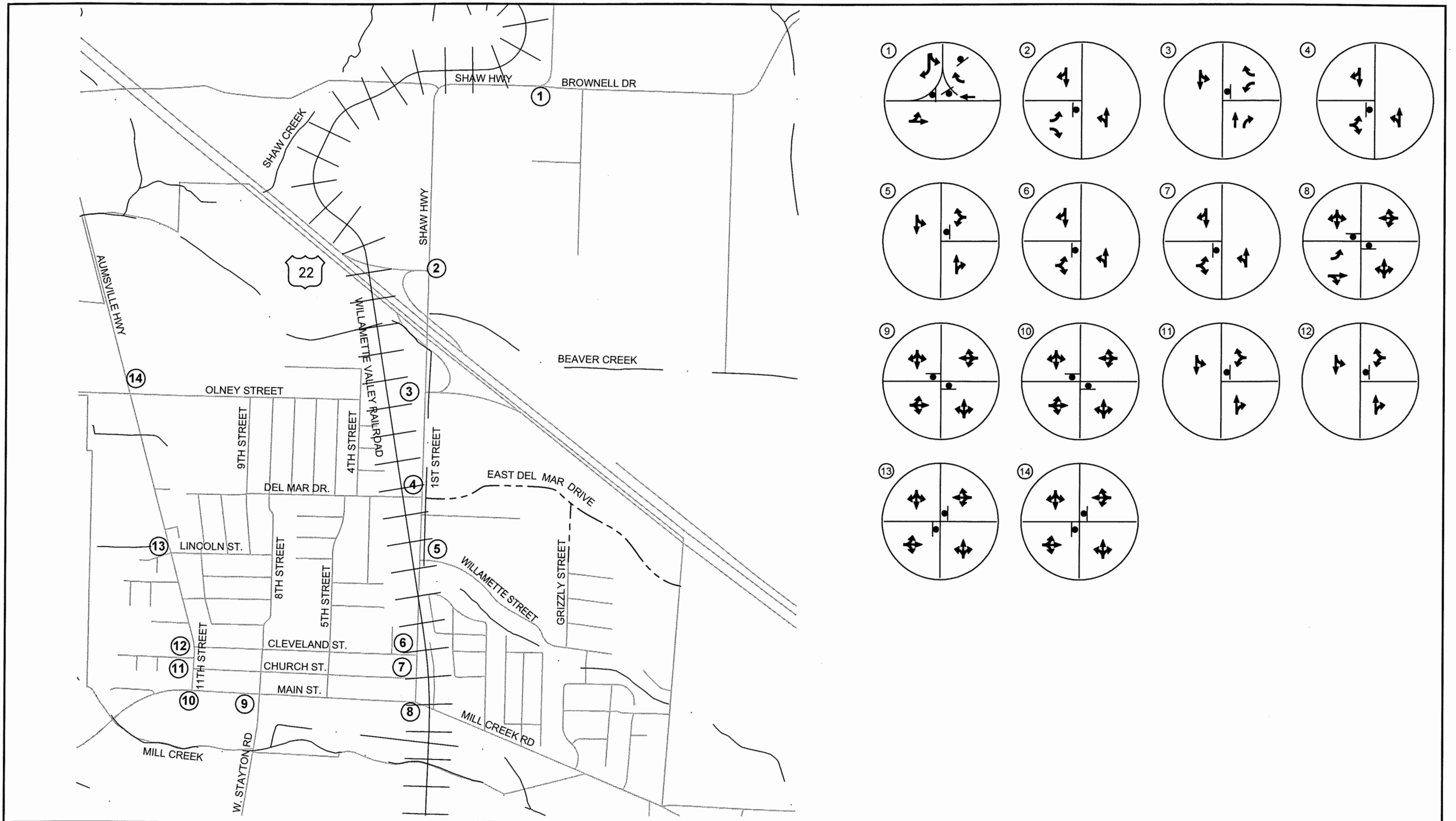
Peak Period Traffic Volumes

To assist in preparing the Aumsville TSP, ODOT provided 3 and 16 hour turning movement counts for study intersections collected in mid-May and early June 2008. No adjustments were necessary to ensure consistency of the data with a single base year of analysis. However, as traffic count data typically varies depending on time of the year, the turning movement counts were adjusted to reflect peak season or 30th highest hourly design volumes (30th HV). These volumes represent “typical” conditions that should be used in assessing performance deficiencies, and in the development of conceptual improvement options. The traffic count data is summarized in Figure 2-3 and reflects seasonally adjusted or 30th HV. The traffic count data is presented in Appendix C of TSP *Technical Memorandum #6: Existing Conditions*. The methodology for these adjustments is summarized in Appendix D of that same Technical Memorandum.

Summary of Intersection Traffic Operations

Currently, study area intersections generally experience minimal delays and operate within acceptable mobility standards. The analysis of existing 30th HV traffic operations was conducted using a Synchro traffic simulation model developed specifically for the study area intersections. This model includes field-verified geometrics and other relevant physical data for each intersection. Analysis procedures follow guidelines in the ODOT Transportation Planning and Analysis Unit (TPAU) Analysis Procedures Manual.

Table 2-2 summarizes existing (2008) traffic operations for the 30 HV at study area intersections. The table includes overall intersection V/C ratios, average intersection delay, and intersection LOS. V/C ratios above 1.0 are useful indicators of potential concerns such as sub-optimal signal timing or inadequate turn lane storage. Intersection analysis worksheets are included in *Technical Memorandum #6: Existing Conditions*. Currently, the study area intersections generally experience minimal delays and operate within acceptable operational standards.



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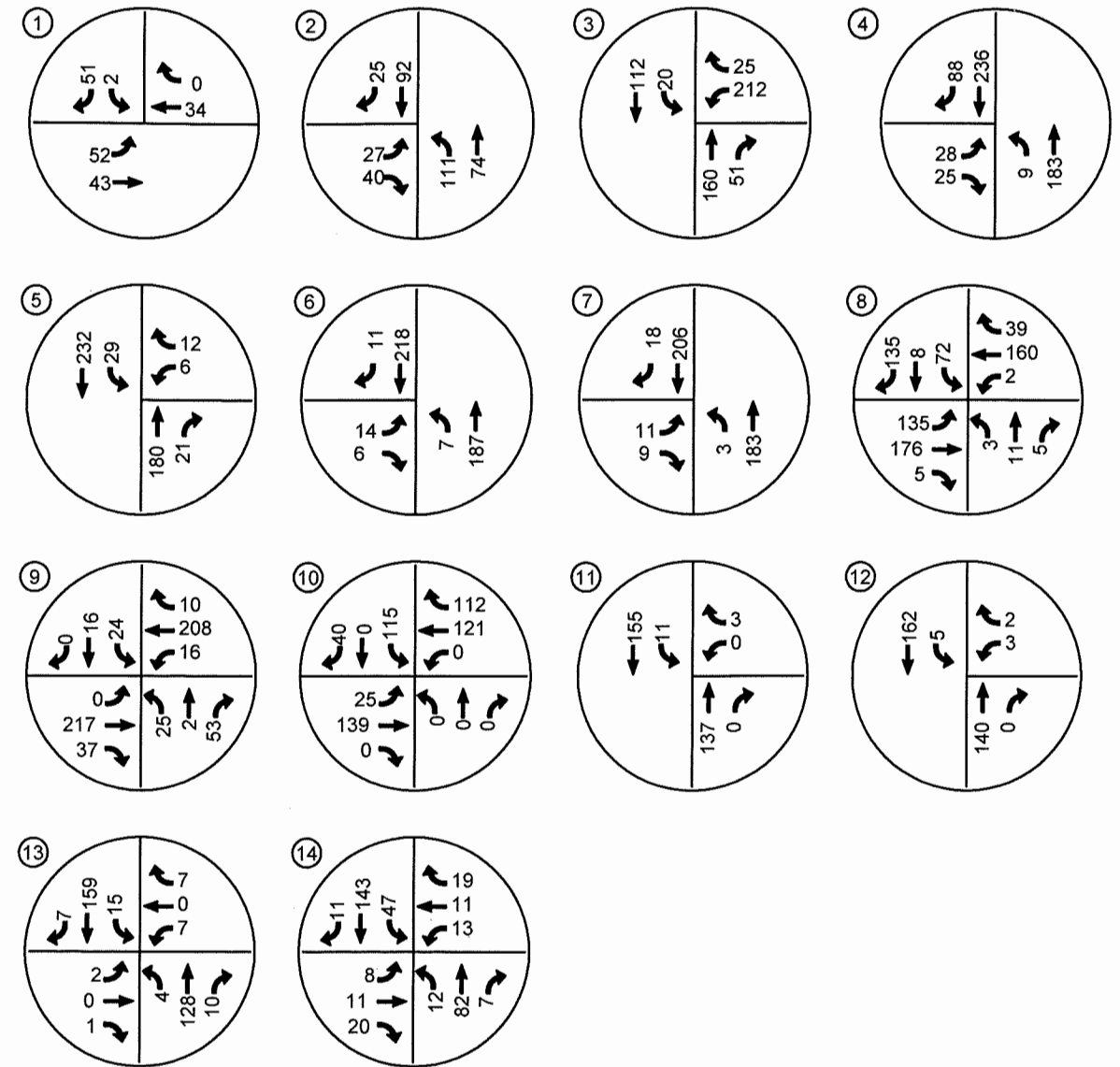
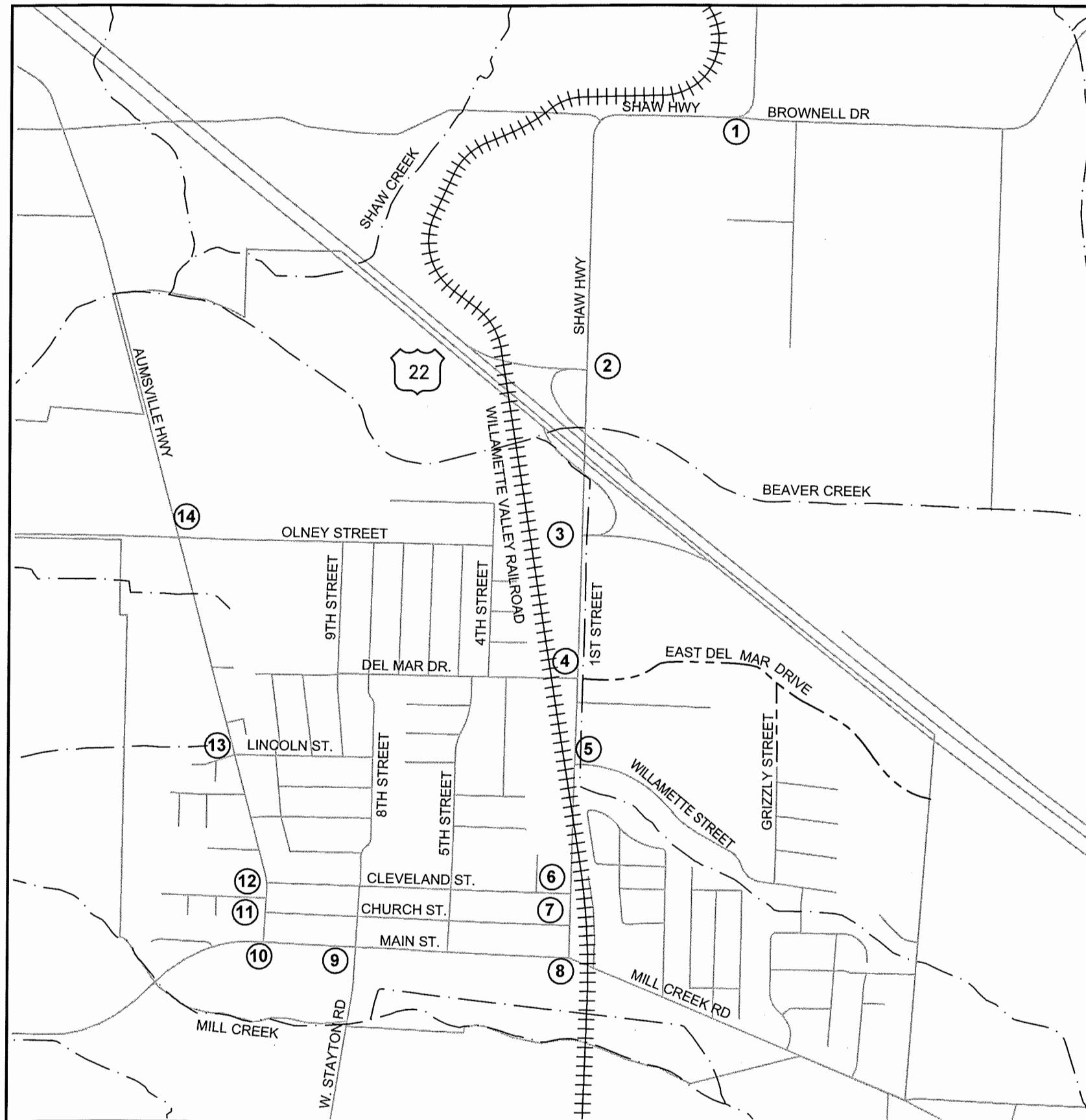
-  TRAVEL LANE
-  STOP SIGN



Figure 2-2
Existing Intersection
Characteristics



LEGEND

XXX → TURNING MOVEMENT VOLUME BY DIRECTION OF TRAFFIC



Figure 2-3
2008 Adjusted 30th HV Intersection
Turning Movements

Table 2-2. 2008 Traffic Operations Analysis Summary

Unsignalized Intersection	Critical Movement	V/C Ratio	Critical Delay (sec/vehicle)	Critical LOS
Shaw Highway @ Brownell Drive	WBT	0.04	9.5	A
	SBL	0.00	8.9	A
	SBL	0.05	8.6	A
Shaw Highway @ OR 22 WB Ramps	EBL	0.06	12.7	B
	EBR	0.05	9.1	A
Shaw Highway @ OR 22 EB Ramps	WBL	0.40	14.5	B
	WBR	0.03	9.3	A
1 st Street @ Del Mar Drive	EB All	0.11	12.0	B
1 st Street @ Willamette Street	WB All	0.03	10.5	B
1 st Street @ Cleveland Street	EB All	0.04	11.1	B
1 st Street @ Church Street	EB All	0.04	10.8	B

Notes:

V/C ratio is a ratio between traffic volumes and the roadway or intersection's capacity.

LOS means intersection level of service.

"Critical Delay" and "Critical LOS" refers to the delay or LOS experienced for the specific intersection traffic

Some traffic back-ups are currently experienced at the intersection of 1st Street with Main Street, traffic in the eastbound left turn lane currently exceeds the available vehicle storage for this movement.

Crash History

Crash data for the study area intersections were provided by ODOT for a five-year period from 2003 through 2007. Analysis of this data was conducted for both roadway segments through the study area and the key intersections. Crash data and analysis worksheets are included in Appendix F of *Technical Memorandum #6: Existing Conditions*.

Roadway Segment Crash Analysis

Roadway segment crash data is analyzed on the basis of accidents per million vehicle miles of travel (MVMT), which considers both the number of crashes and the level of exposure to crashes expressed in terms of the total traffic volume carried along the roadway segment.

Table 2-3 identifies crash data for one mile segments of OR 22 in Aumsville study area, as well as crash rates along selected major street segments within the UGB. Using 5-year crash data, analysis indicates that two local street segments experience crash rates greater than 1.0/MVMT. Review of crash data for city street segments indicated that the predominant type of crash involves angle or turning movement collisions at public and private access points. In 2007, the segment of OR 22 in the vicinity of the Shaw Highway interchange experienced crash rates below the average crash rate of 0.73 for all Statewide Highways (expressways) in Oregon for the same year, (according to the ODOT Crash Rate Table II). A review of the data for OR 22 indicates that the predominant collision type is sideswipes/overtaking.

11th Street (Aumsville Highway), Main Street and Shaw Highway/1st Street are designated as urban and rural major collectors in the federal functional classification system. 2007 crash rates for state highways with these designations were identified for comparison purposes to provide context for understanding the significance of the crash rates calculated for these facilities. According to ODOT Crash Rate Table II in 2007 an average crash rate of 0.86 was experienced on all state highway urban collectors (in suburban locations). In 2007, an average crash rate of 1.30 was experienced on all state highway rural major collectors. This indicates

that the crash experience along 11th Street and Main Street is higher than the statewide average for facilities with somewhat similar characteristics.

Table 2-3. 2003-2007 Roadway Segment Crash History

Segment	Crash Type					Crash Severity			Total	
	Rear-end	Turn	Angle	Side-swipe/ Over taking	Other	PDO	Injury	Fatal	Reported Crashes	Crash Rate/ MVMT
OR 22 (1/2 mile on either side of Shaw Highway interchange)	0	1	0	3	2	4	2		6	0.16
11 th Street (Main to Olney)	1	1	4	0	1	3	4		7	1.88
Main Street (1 st to 11 th)	2	5	0	0	0	5	2		7	1.45
Shaw Hwy/1 st Street (Brownell to Main)	1	6	4	0	2	4	5		9	0.67

Source: ODOT 2008.

Notes: PDO means Property Damage Only. "Other" crashes include backing, pedestrian collisions, and hitting fixed objects.

MVMT means million vehicle miles of travel.

The ODOT Project Safety Management System tracks crash data by district for segments and specific sites. The Safety Investment Program Segment Ratings rate the number of fatal/injury crashes per 5 mile segments from Category 1 (zero crashes) to Category 5 (more than 10 crashes). Using 2005-2007 data, OR 22 in the study area is rated as a Category 2 (1 to 2 fatal/injury crashes per 5 mile segment). According to the Safety Priority Index System (SPIS) there are no crash sites in the study area that require monitoring or mitigation.

Intersection Crash Analysis

The number of crashes per million entering vehicles (MEV) is used to calculate an intersection's "crash rate." The rate is then compared to crash rates on similar types of facilities throughout Oregon. A rate greater than other similar facilities is commonly used as a threshold to identify locations that warrant further analysis, potentially leading to implementation of measures to improve safety. Table 2-4 identifies crash rates and types and severity at study area intersections. None of the study intersections exceed the rate on similar facilities, and, therefore no further analysis is needed.

During the development of the existing transportation system inventory and needs analysis input was provided by the Technical and Planning Advisory Committees (TAC and PAC). Key issues or concerns raised that are relevant to the IAMP included:

- Narrowness of 1st Street between OR 22 and Main Street is problematic in that there can be conflicts between general traffic and large (16-foot wide) farm equipment when these machines move through the city from field to field. Additionally, there are no pedestrian or bicycle facilities along this street, and there exist large drainage ditches which raise the cost of widening the road and/or adding sidewalks.
- Potential sight distance problem on 1st Street at Church Street looking to the left due to setback of historic house. This can affect emergency vehicles traveling from the fire station at 5th and Church Streets that need to travel north on 1st Street.

Table 2-4. 2003-2007 Study Area Intersection Crash History

Intersection	Crash Type					Crash Severity			Total	
	Rear-end	Turn	Angle	Side-swipe/ Over-taking	Other	PDO	Injury	Fatal	Reported Crashes	Crash Rate/MEV
Shaw Hwy @ Brownell									0	0.00
Shaw Hwy @ OR 22 WB Ramps									0	0.00
Shaw Hwy @ OR 22 EB Ramps									0	0.00
1 st t @ Del Mar	1						1		1	0.09
1 st @ Willamette									0	0.00
1 st @ Cleveland		1				1			1	0.15
1 st @ Church		2				1	1		2	0.32
1 st @ Main		3				2	1		3	0.26

Source: ODOT 2006.

Note: PDO means Property Damage Only and MEV means Million Entering Vehicles. "Other" crashes include sideswipes and head on collisions.

Freight Mobility

OR 22 has been designated by ODOT as a State Freight highway. The City of Aumsville restricts the operation of trucks in excess of 20,000 lbs. gross weight on city streets except on designated truck routes, for delivery purposes, or to serve businesses at industrial sites adjacent to the street. City designated truck routes include:

- Main Street
- 1st Street
- 11th Street from the northern city limits to Main Street
- 8th Street from the southerly city limits to Main Street

During the agricultural season the existing arterial roads are used by many large farm vehicles including semi-trucks and 16-foot wide combines moving from field to field to harvest crops and providing other necessary services. Some key freight mobility issues that were identified by the PAC for the TSP included: the narrow cross-section along 1st Street where there are conflicts between large agricultural vehicles and traffic moving in the opposite direction; turning radius at the intersection of Main and 1st Streets for the southbound right turn movement, and conflicts between improving pedestrian crossings of Main Street and the movement of large vehicles along Main Street.

Access Spacing

Access spacing requirements are closely related to street functional classification. Typically, when access controls are in place, the frequency of driveways and intersecting streets is more restrictive along state highways and major arterials where the movement of traffic takes a higher priority. Access controls are less restrictive along collector streets where there is greater balance between access and mobility. Access controls are restricted only by safety considerations along local streets where property access is the primary function of the street. Access management for the major streets in the Aumsville UGB is controlled by ODOT (in the vicinity of the OR 22 interchange) and by Marion County (for 1st, 11th and Main Streets).

The City of Aumsville's regulations related to access management speak primarily to individual property access, opportunities for combined access and limitations on cul-de-sacs.

ODOT Requirements

In Aumsville, access management along Shaw Highway/1st Street will be of the highest importance to ensure the on-going safety and functionality of this facility as the community grows. The Oregon Administrative Rules (OAR Chapter 734, Division 51) promulgate access management standards in the vicinity of the interchange with OR 22, noting that all access should be prohibited within ¼ mile (1,320 feet) of each ramp termini intersection.

Marion County Requirements

Marion County has jurisdictional control over many of the major roads within the Aumsville UGB including 1st Street/Shaw Highway, Main Street/Mill Creek Road, 11th Street/Aumsville Highway, and 8th Street/West Stayton Road (south of main Street).. Each of these facilities is designated as an urban arterial within the UGB, but as a collector outside of the UGB. Shaw Highway, Mill Creek Road and Aumsville Highway are all designated as Major Collectors outside of the UGB and West Stayton Road is designated as a Minor Collector. In the Transportation Element of its Comprehensive Plan and the Rural Transportation System Plan Marion County has identified the following access spacing requirements for County Roads in cities that have not adopted access spacing standards:

- Arterials:
 - 400 feet from any intersection with a state highway, arterial or major collector
 - 300 feet from any other intersection (including a private access)
- Collectors (if a City has only one collector classification like Aumsville)
 - 250 feet from any intersection with an arterial or state highway
 - 150 feet from any other intersection (including a private access)

These standards are measured from the centerline of the driveway to the centerline of the adjacent facility. Within the Urban Growth Boundary of a city, the functional class of the roadway is designated in that city's Transportation System Plan or other plan adopted by the city.

Existing Access Spacing

Currently there are several access points on Shaw Highway/1st Street within ¼ mil of the OR 22 interchange, both to the north and the south. These access points are described below.

- To the north of the OR 22/Shaw Highway westbound ramp termini there are three existing driveways serving farm uses. One is located on the east side of the highway approximately 600-feet north of the termini, one is located on the west side of the highway approximately 770-feet north, and one is located on the west side approximately 1,280-feet north.
- To the south of the OR 22/Shaw Highway eastbound ramp termini there are two existing driveways and three existing street intersections. The existing driveways include an access point to an existing farm property located on the east side approximately 470-feet south (this access point will become an emergency only access route to approved development in the southeast quadrant of the interchange) and an existing driveway for a single family residence located on the west side approximately 960 feet south. The street intersections include Beaver Creek Road located on the west side approximately 440-feet south of the termini, Del Mar Drive

located approximately 1,125-feet south and Gordon Lane located on the east side approximately 1,285 feet south of the interchange. It is anticipated that the intersection of Gordon Lane with 1st Street will ultimately be closed and that future access to this property will occur via a connection to East Del Mar Drive.

At the time of original interchange construction ODOT purchased access control along Shaw Highway, and existing local street and driveway connections were allowed to remain. South of the interchange, ODOT currently controls access on the east side of the road from the eastbound ramp terminal to a point just south of Gordon Lane. On the west side of the road access is controlled from the westbound ramp terminal to the intersection with Beaver Creek Road. As future improvements are made to Shaw Highway/1st Street from the eastbound ramps southward, access spacing deviations will be needed to meet the requirements of OAR 734, Division 51.

2.5 NATURAL AND CULTURAL RESOURCES

The development of this IAMP did not include an in-depth environmental evaluation of the study area, nor were potential impacts associated with improvement options subjected to detailed environmental review. The assessment of natural and cultural resources focused on determining the extent to which the natural environment would limit the location and magnitude of land development opportunities within the existing UGB and in areas adjacent to the UGB which could be added in the future.

Of primary concern in evaluating future growth and development expectations within the city is the location of two 100-year floodplain systems. To both the north and south, the City of Aumsville is bordered by existing waterways. To the north is Beaver Creek which runs from west of the UGB through the northwestern portion of the city, crossing under OR 22 immediately west of the Shaw Highway interchange. Beaver Creek then continues eastward away from the study area. The 100-year floodplain for Beaver Creek covers a large area between the UGB boundary and just north of Olney Street, making much of this area unavailable for future urban development and urban transportation infrastructure. Any improvements to the interchange will need to address the creek crossing.

There is a large drainage ditch that runs parallel to and east of 1st Street from the interchange area southward to Willamette Street at which point the ditch turns east. This ditch serves both water storage and conveyance function. This ditch accesses Beaver Creek in the vicinity of the OR 22 interchange. On the east side of 1st Street, there is a smaller drainage ditch that largely serves roadway run-off.

Mill Creek forms the southern edge of the Aumsville UGB for its entire distance. The 100-year floodplain around this creek covers a considerable area to the south, away from the city, on land that is currently used for farming purposes. Old Mill Race lies just north of and parallel to Mill Creek for much of its distance along the UGB. This ditch stores and conveys water run-off from the city and overflow from the Creek. The area between Old Mill Race and Mill Creek lies within the floodway. The southeastern edge of the UGB runs along Mill Creek Road and most of the area between the UGB and Mill Creek Road also lies in the 100-year floodplain.

Figure A-4 in Appendix A illustrates the location and extent of the floodplains and floodways in the vicinity of the IAMP study area.

The built environment in the interchange area is largely undeveloped with a few houses located along the west side of 1st Street between the OR 22 eastbound ramp termini and Del Mar Drive. The area along both sides of 1st Street between the state highway and Del Mar Drive has been identified as largely vacant and available for development.

3. FUTURE TRAFFIC CONDITIONS

This chapter provides a discussion of future community population growth trends in the Aumsville UGB consistent with the City's Comprehensive Land Use Plan, and identifies the impacts of this growth on the existing transportation system. The data and analysis in this chapter were excerpted from the Aumsville TSP and further details can be found in that document and its supporting technical memoranda. Appendix A to this report includes a summary of the land use forecasting process.

Anticipated development in the Aumsville UGB over the 20-year planning horizon is based on the recent population forecasts prepared for the city by Portland State University (as noted in Chapter 2). The discussion of future development expectations prepared for the TSP includes two scenarios: Scenario 1 – development within the City's existing UGB, and Scenario 2 –20-year development including land outside the existing UGB. Since the existing UGB is expected to accommodate less than 10 years of development for the city, a UGB expansion will be needed to meet the requirements of a full 20 years of growth. While this scenario has no official standing as adopted land use policy, the analysis provides the opportunity to address the effects of one potential development scenario beyond the current UGB boundaries to accommodate the full complement of community population and employment growth that is anticipated by 2030. The TSP analysis focuses on both of these scenarios to ensure consistency with the requirements of Oregon State Planning Goal 12 and ODOT's TSP planning guidelines.

3.1 SCENARIO 1: UGB BUILD-OUT

Community Growth Assumptions

There is an estimated 251 acres available for development within the existing Aumsville UGB. Slightly more than 94 acres is zoned for single family residential uses which could accommodate approximately 417 new dwelling units (at 4.44 dwelling units per acre per the Aumsville Comprehensive Plan). This represents a population increase of nearly 1,169 persons (based on the 2.8 persons per household rate assumed in the Comprehensive Plan). Approximately 31 acres is zoned for multi-family residential uses which could accommodate about 247 new dwelling units (at 7.96 per acre) and 691 persons. Collectively, buildable single and multi-family acreage within the existing UGB could accommodate an additional 1,859 persons and, when added to the existing population of 3,535, would bring the total to be accommodated to 5,394 persons. This compares with a 2030 population forecast for the City of 5,706².

A modest amount of commercially-zoned land is available for development within the UGB (about 4 acres), however, the Interchange Development (ID) zone could also be used to accommodate appropriate commercial development that met the purpose of the zone and did not adversely compete with the downtown commercial core. The ID-zoned area includes 55.6 acres which is intended to accommodate employment-based development with the goal of diversifying the economy of Aumsville and providing more job opportunities closer to home. Based on the Transportation Impact Analysis prepared for approximately 38 acres of the total ID zoned area³ (the Beavercreek Professional Center), development within the ID zone is

² 2030 Population Forecast for cities in Marion County, Marion County, May 2009.

³ ""Revised Traffic Impact Analysis, RMA Development, Inc. Proposed Annexation", ATEP, Inc. May 2007.

assumed to be a mix of banking, restaurant, motel, and office uses that would not compete with existing development in the CBD. Approximately 12 acres of the land within the UGB designated as “public” represents the proposed school on the Baptist Church property along 1st Street.

Outside of the UGB but within the IAMP boundary little other development is anticipated as most of the remaining land is occupied by the OR 22/Shaw Highway interchange or agriculturally-zoned land to the north of the expressway.

Figure A-3 in Appendix A illustrates the locations of buildable lands where future development could occur.

Traffic Projections

Based on the land development expectations described above, forecasted future (2030) traffic volumes were prepared for Scenario 1. A total of 2,852 new peak hour trips are anticipated to be generated by community growth within the UGB between 2009 and 2030. These trips were assigned to the city’s street system consistent with where development is expected and where people are likely to be traveling. Future turning movement projections were prepared for each study area intersection and evaluated to determine the need for future intersection and roadway system improvements. Figure 3-1 illustrates the 2030 30th HV intersection turning movement projections for Scenario 1.

Transportation Needs Assessment

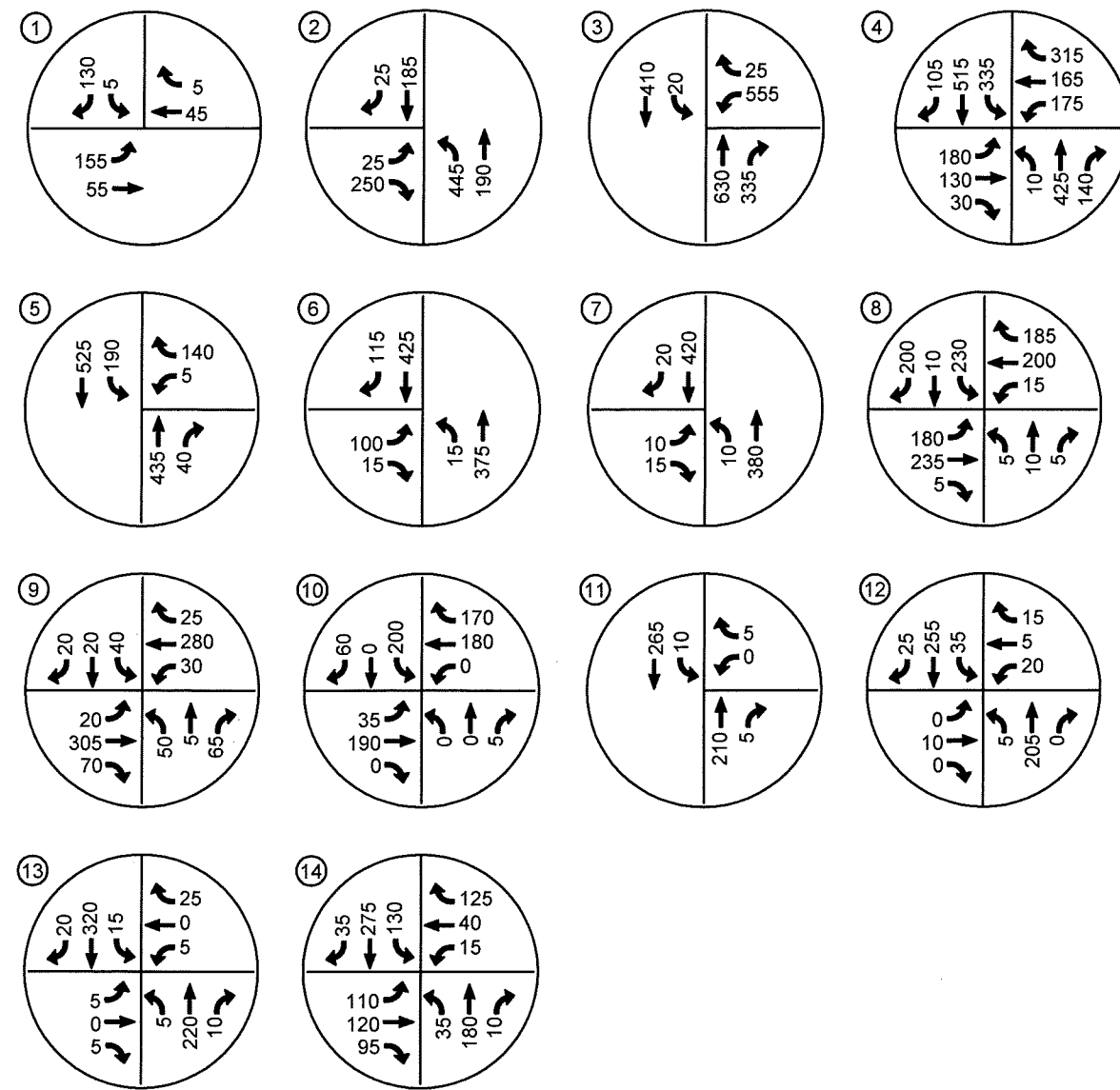
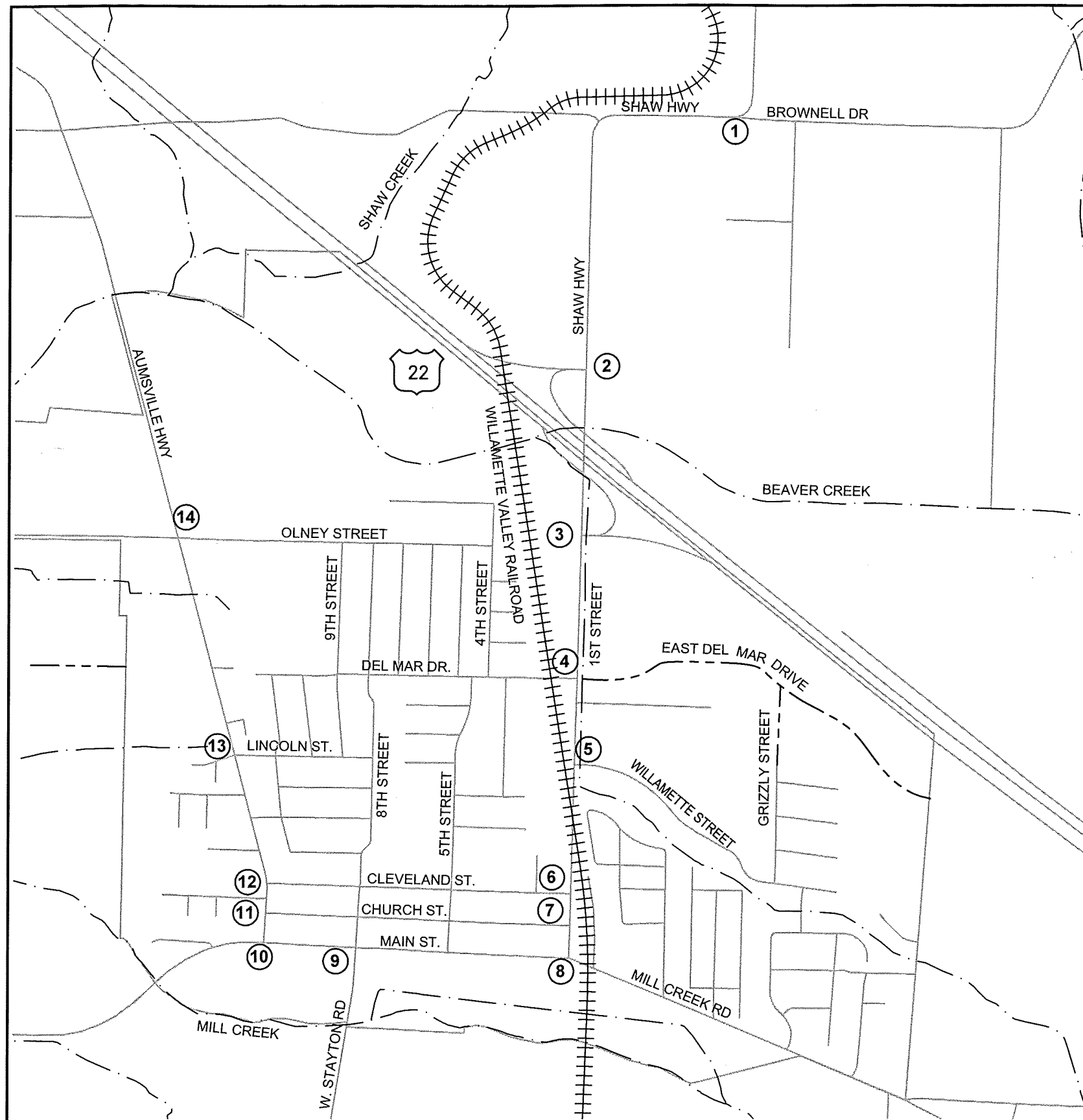
The analysis of projected 2030 pm traffic operations was conducted using a Synchro traffic simulation model which includes projected volumes, intersection geometrics, traffic control and other relevant physical data.

Analysis results were compared with existing mobility standards to determine where deficiencies in the system might exist. These mobility standards include:

- The peak hour, maximum V/C standard for OR 22 is 0.70 for the highway and 0.85 for the interchange ramp termini. This standard establishes the minimum threshold of acceptable operations. A V/C ratio of 0.85 means that 85 percent of the capacity of the intersection is utilized based on an established planning level capacity and measured traffic volume.
- A maximum level of service (LOS) standard for Marion County streets and intersections of D except for side street movements at stop-controlled intersections where LOS E is acceptable. The Marion County standards also include a volume-to-capacity (V/C) ratio of 0.85 for signalized intersections and 0.90 for stop-controlled intersections. The City of Aumsville had not adopted LOS or V/C standards, so by default, the County standards were used.

It should be noted that the mobility standards associated with any future roadway or intersection improvement options at the OR 22 interchange with Shaw Highway is 0.70 for the eastbound ramp intersection which is located within the Aumsville UGB, and 0.60 for the westbound ramp intersection which is located immediately outside of the UGB.

Using the 2030 pm peak hour traffic projections prepared for Scenario 1, traffic operations analysis was conducted. Analysis results were compared with existing mobility standards to determine where deficiencies in the system might exist. Analysis results indicate that many of the existing intersections in the Aumsville UGB are expected to operate within their applicable performance standards with the addition of 2030 peak hour traffic volumes (30th highest hour volumes were used for this analysis). However, there are several locations where



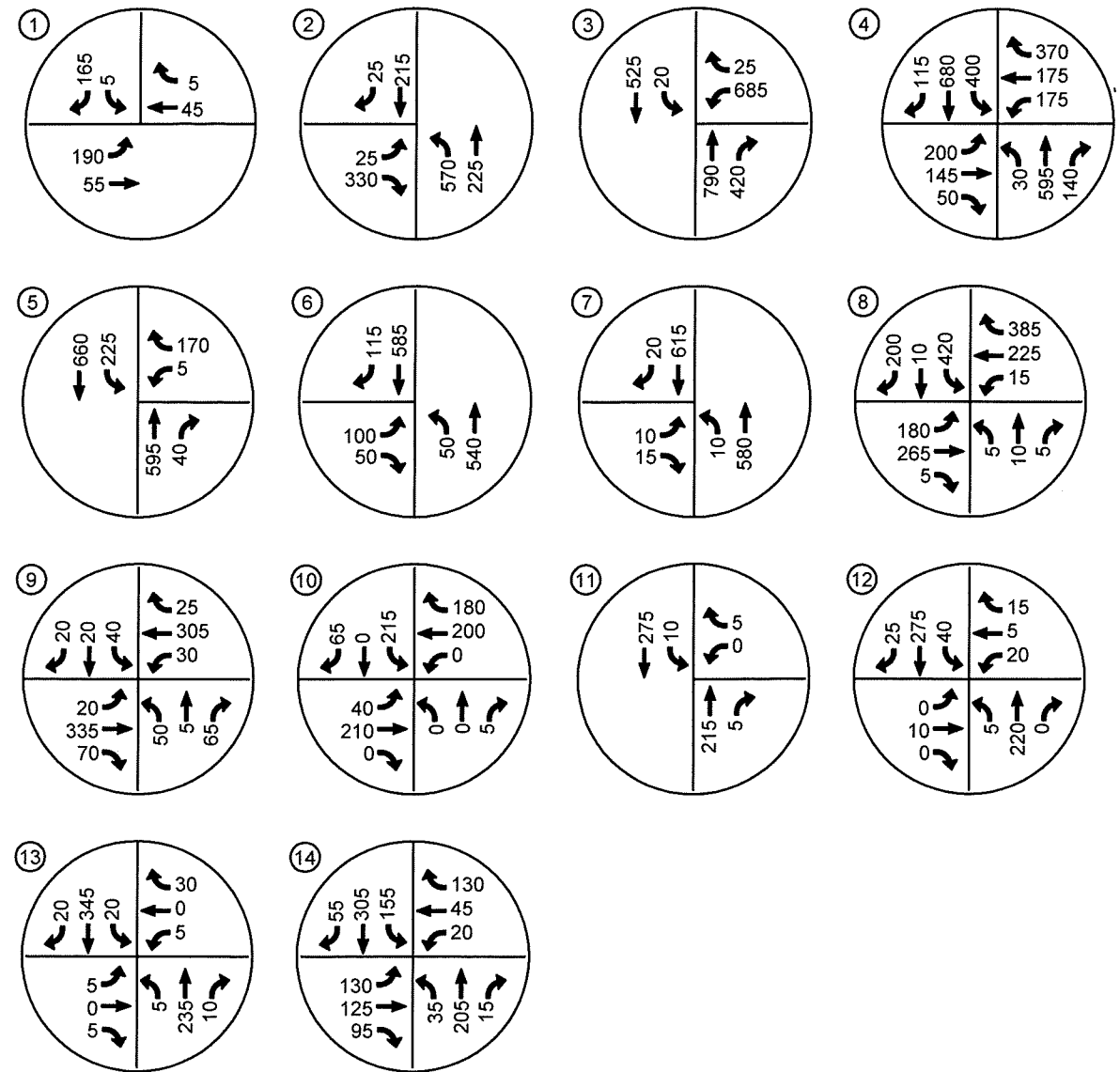
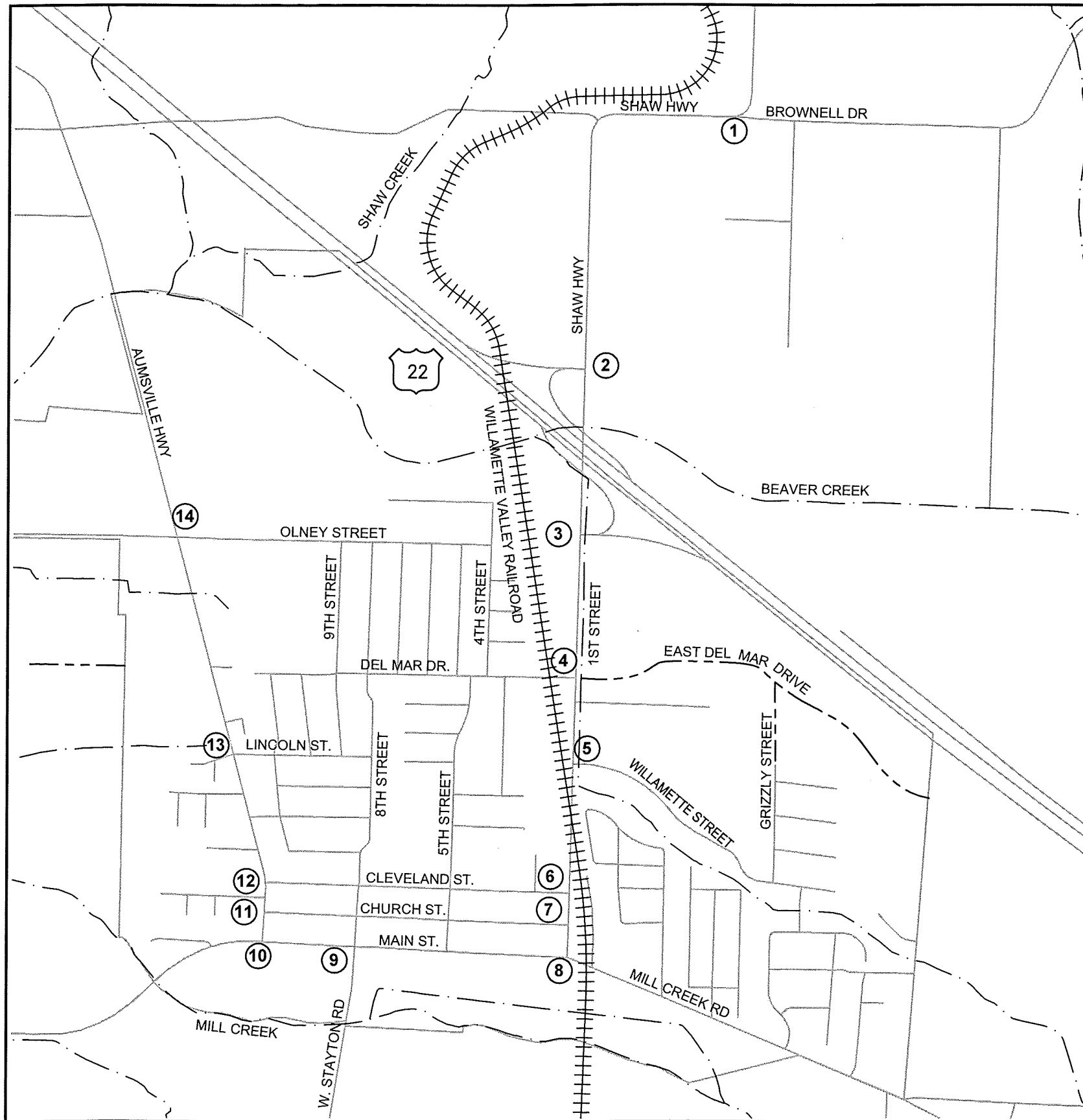
LEGEND

XXX → TURNING MOVEMENT VOLUME BY DIRECTION OF TRAFFIC

----- PROPOSED STREET EXTENSIONS



Figure 3-1
2030 30th HV Intersection
Turning Movements For Development
Within UGB



LEGEND

XXX → TURNING MOVEMENT VOLUME BY DIRECTION OF TRAFFIC

----- PROPOSED STREET EXTENSIONS



Figure 3-2
2030 30th HV Intersection
Turning Movements Plus Development
Outside UGB

the standards would be exceeded and a future improvement need has been identified. These locations include:

- **Shaw Highway at OR 22:** For left turns from the eastbound off-ramp ($v/c > 2.0$, LOS F)
- **1st Street at Del Mar Drive:** For eastbound and westbound stop-controlled side street movements ($v/c > 2.0$, LOS F)
- **1st Street at Main Street:** For the southbound stop sign controlled side street movements ($v/c 1.94$, LOS F)
- **11th Street at Olney Street:** For the eastbound stop sign controlled movements ($v/c 1.68$, LOS F)

Analysis of traffic back-ups or queues indicates that the eastbound right turn movement at the intersection of OR 22 with the westbound ramps would exceed its available vehicle storage, as would the eastbound left turn at the intersection of 1st Street with Main Street. Traffic queues are expected to spill back into the adjacent intersection for the westbound movement on East Del Mar Drive at 1st Street (based on anticipated site plan for development of this facility) and the southbound movement on 1st Street at Main Street. It is further anticipated that eastbound traffic on Del Mar Drive may periodically queue back over the railroad tracks while waiting to turn onto 1st Street.

3.2 SCENARIO 2: PLUS UGB EXPANSION

Community Growth Assumptions

An analysis was conducted by the City in coordination with the Department of Land Conservation and Development (DLCD) to identify the additional acres by zoning type that could be needed over the next 20 years within the Aumsville UGB to meet community growth expectations. This analysis was conducted for illustrative purposes only. Nothing in this IAMP should be interpreted to imply City, County or State approval of this potential UGB expansion scenario.

In general, it is anticipated that urban growth boundary expansion may occur predominantly to the east and west of the city due to the physical constraints that exist on the north and south (e.g., wetland and 100-year floodplains/floodways). Figure A-4 in Appendix A illustrates the locations of buildable lands where future development could occur with the proposed UGB expansion. However, it should be noted that future growth may not actually occur exactly as depicted in this figure.

Within the areas proposed for UGB expansion it is assumed that there would be approximately 28.5 acres of new single family residential development, 15.4 acres of multi-family residential development, 8 acres of commercial use (including downtown), 12.7 acres of industrial use and 26.6 acres of public use, primarily a new park to be located east of Bishop Road and immediately south of OR 22. A total of 91 additional acres would be added to the existing UGB with this expansion.

Traffic Projections

Based on the land development expectations described above, forecasted future (3020) traffic volumes were prepared for Scenario 2. A total of 916 new peak hour trips are anticipated to be generated by community growth with the UGB Expansion by 2030. These trips are additive to the trips identified with Scenario 1. Trips were assigned to the city's street system consistent with where development is expected and where people are likely to be traveling.

Future turning movement projections were prepared for each study area intersection and evaluated to determine the need for future intersection and roadway system improvements. Turning movement projections for Scenario 2 are presented in Figure 3-2.

Transportation Needs Assessment

Based on the analysis of traffic volumes that would be generated with the UGB expansion (these are additive to the volumes based on development within the UGB), traffic operational deficiencies can be expected to occur in several locations. These would include:

- **Shaw Highway at OR 22:** For left turns from the off-ramps at both intersections (westbound v/c 0.82, LOS F; eastbound v/c > 2.0, LOS F)
- **1st Street at Del Mar Drive:** For eastbound and westbound stop sign-controlled side street movements (v/c >2.0, LOS F)
- **1st Street at Cleveland Street:** For eastbound stop sign controlled side street movements (v/c 0.89, LOS F)
- **1st Street at Main Street:** For northbound and southbound stop sign controlled side street movements (southbound v/c >2.0, LOS F, northbound v/c 0.33, LOS F)
- **11th Street at Olney Street:** For eastbound and westbound stop sign controlled side street movements (v/c >2.0, LOS F for both directions)

Traffic queuing results indicate that available vehicle storage will be exceeded in a number of locations. These include the eastbound right turn lane at the intersection of OR 22 with the westbound ramps at Shaw Highway, and the eastbound left turn lane at the intersection of 1st Street with Main Street.

Additionally, substantial traffic queues are anticipated for through traffic movement at several locations including: the westbound left turn lane at the intersection of OR 22 with the eastbound ramps at Shaw Highway (575-foot back-up is anticipated), the westbound direction on East Del Mar Drive at 1st Street with an estimated queue in excess of 600 feet., and 1st Street at Main Street with a southbound queue of 525 feet. It is further anticipated that eastbound traffic on Del Mar Drive may periodically queue back over the railroad tracks while waiting to turn onto 1st Street.

4. ALTERNATIVES DEVELOPMENT AND ANALYSIS

4.1 RANGE OF IMPROVEMENT OPTIONS CONSIDERED

To address the existing and future transportation system deficiencies, a series of improvement options were developed and evaluated as a part of the TSP. These options include such actions as:

- Improvements to existing facilities such as lengthening or adding lanes, traffic control, intersection modifications, shoulder widening and/or added bicycle lanes.
- New facilities to provide increased connectivity within Aumsville and/or to provide sidewalks.
- Transportation System Management (TSM) measures such as access management to improve the operations of the existing roadway system, and/or installation of traffic signals.
- Transportation Demand Management (TDM) measures such as carpooling, telecommuting, flextime, employer-based transit, or other strategies to reduce travel demand on the roadway system.
- Land use changes to reduce or modify travel demand.

4.2 DEVELOPMENT OF CRITERIA TO EVALUATE IMPROVEMENT OPTIONS

Transportation Goals and Objectives

The development of evaluation criteria is based on the goal and objective policy statements developed for the Aumsville TSP and IAMP. These goals and objectives articulate the community's vision of a system of transportation facilities and services that provide for local needs and maintain the City's commitment to managing growth, supporting economic development, and preserving its small town quality of life. The goal of the TSP is *"To provide a balanced, multi-modal, safe, convenient, and efficient transportation system for Aumsville"*.

Supportive objectives focus on:

- Facilitating mobility and accessibility of community residents in a safe and efficient manner.
- Supporting the development of all transportation modes to reduce reliance on single-occupant automobiles.
- Enhancing bicycle, pedestrian and transit facilities and services.
- Protecting existing rail facilities.
- Using the TSP to help guide land use decisions.
- Cooperating with ODOT and Marion County to development and implement transportation improvements.
- Regularly developing and updating a CIP to guide roadway improvements and repair.
- Involving the public in the transportation planning process.

The IAMP goal and supportive objectives are presented in Chapter 6.

Evaluation Criteria

Evaluation criteria were developed from these goals and objectives to guide the development and assessment of transportation system improvement options. These criteria were intended to measure the effectiveness of proposed strategies to ensure the long-term safety and operations of the community's transportation system. Ten criteria are presented below in five major categories of performance measurement:

- **Mobility and Accessibility:**
 - Provide for smooth traffic movement through the OR 22/Shaw Highway interchange consistent with OHP criteria, and at other key intersections consistent with City and Marion County operational standards.
 - Enhance multi-modal system connectivity for all users.
 - Ensure consistency of improvement recommendations with City and County Comprehensive Plans, the OHP, the Oregon Transportation Plan (OTP), the TPR, and ODOT design and access management standards.
- **Safety:**
 - Strive to improve safety of the transportation system for all travel modes.
- **Multi-modal Transportation:**
 - Ensure adequate and safe access and circulation for non-motorized travel modes.
 - Provide a balanced transportation system that accommodates all modes of travel.
- **Built and Natural Environment:**
 - Minimize potential impacts to the built and/or natural environment associated with any potential improvements.
 - Minimize potential impacts on available ID zoned land available for economic development.
- **Fiscal:**
 - Minimize construction costs of any potential improvements.
 - Evaluate potential improvements in relation to anticipated funding levels.

4.3 EVALUATION OF IMPROVEMENT OPTIONS FOR SCENARIO 1: UGB BUILD-OUT

Using the evaluation criteria described above, an evaluation process was conducted for the range of multi-modal improvement options developed to address existing and potential future transportation deficiencies in the study area. The intent of this process is to identify the positive benefits that each option may have for addressing deficiencies, cost implications, compatibility with ODOT design standards and regulations, and any obvious environmental "fatal flaws" or potential for significant environmental mitigation.

Evaluation of Mobility and Accessibility Impacts

The evaluation of mobility impacts focused on performance measures such as V/C ratios, intersection delay and intersection LOS. An initial step in the development of intersection improvements was the identification of locations where traffic signal, all-way stop sign, and/or turn lane warrants would be met. This analysis provides useful input in developing intersection improvements in that it provides a range of reasonable strategies that could be applied. The warrant analysis is presented below.

Signal Warrant Analysis

ODOT uses Signal Warrants 1, Case A and Case B, from the *Manual on Uniform Traffic Control Devices* (MUTCD), which deal primarily with high volumes on the intersecting minor street and high volumes on the major-street. The unsignalized intersections were evaluated for preliminary signal warrants using the minimum vehicular traffic and interruption of continuous flow warrants, Case A and Case B, respectively. The analysis indicates that the following study intersections would meet Case A and/or B preliminary signal warrants for Scenario 1.

- OR 22 eastbound Ramp at Shaw Highway
- 1st Street at Del Mar Drive
- 1st Street at Cleveland Street
- 1st Street at Main Street
- 11th Street at Olney Street (Aumsville Highway)

Analysis worksheets are included in TSP *Technical Memorandum 8: Transportation Needs and Potential Improvements*. Meeting preliminary warrants is necessary to install an improvement, but it does not mean the turn lane, stop sign or signal should be recommended nor does it guarantee installation. Considerations to be evaluated in recommending an improvement include safety concerns, alternatives to signalization, signal systems issues (including spacing and progression impacts), delay, traffic queuing, bike and pedestrian needs, location of railroad grade crossings, access requirements or restrictions, consistency with local plans, and local agency support. The ODOT Regional Traffic Engineer, County or City Engineer (dependent on jurisdiction) would make the final decision on the installation of a turn lane and the State Traffic Engineer on the recommendation of the Regional Engineer for a signal. Roundabouts may also be considered as an intersection traffic control treatment instead of signalization.

Turning Lane Warrant Analysis

Intersections that did not meet preliminary signal warrants were evaluated for left turn and right turn lane warrants, and for stop sign control. Turning lane warrants were met for Scenario 1 at:

- 1st Street at Willamette Street – Northbound right (if speed limit remains at 45 mph) and southbound left turn lanes.
- 1st Street at Church Street – Northbound left turn lane.
- 8th Street at Main Street – Eastbound and westbound left turn lanes.
- 11th Street at Main Street – Eastbound left and westbound right turn lanes.

The remaining study intersections that don't meet signal warrants also did not meet warrants for either left or right turn lanes.

Intersection Operations Analysis

Table 4-1 summarizes the results of intersection operations analysis for roadway system improvements associated with Scenario 1. Scenario 1 includes those actions designed to address the 2030 PM peak hour travel needs associated with build-out of remaining developable land within the existing Aumsville UGB. Worksheets for Scenario 1 operations analysis are included in Appendix C of TSP *Technical Memorandum 8: Transportation Needs and Potential Improvements*.

As indicated in Table 4-1, build out of the UGB would require that some improvements be made to the existing interchange of Shaw Highway with OR 22. In large part, this

improvement need is related to the development of approximately 57 acres of ID zoned land along 1st Street near OR 22. Access to this development would be via the intersection of 1st Street with an easterly extension of Del Mar Drive and most traffic to/from the ID zone is expected to use the OR 22 interchange.

Table 4-1. 2030 PM Peak Hour Levels of Service with Scenario 1: UGB Build-out

No.	Intersections	Improvement	Critical Movement	PM Peak Hour		
				V/C Ratio	Avg Delay (sec./veh.)	LOS
2	Shaw Highway @ OR 22 WB Ramps	• None needed	--	--	--	--
3	Shaw Highway @ OR 22 EB Ramps	• Signalize and add SB left, 2 nd NB thru and 2 nd WB left	--	0.55	11.9	B
		• Signalize and add SB Left and 2 nd WB Left *	--	0.76	15.8	B
4	1 st Street @ Del Mar Drive	• Signalize • Align with new road to east of 1 st Street including addition of 2 nd NB thru, NB left, 2 nd SB thru, SB left, EB left, WB left, and WB right	--	0.79	21.7	C
5	1 st Street @ Willamette Street	• Add SB left	SB left	0.19	9.2	A
			WB All	0.33	16.0	C
6	1 st Street @ Cleveland Street	• None needed	--	--	--	--
7	1 st Street @ Church Street	• None needed	--	--	--	--
8	1 st Street @ Main Street	• Signalize	--	0.77	14.2	B

Source: Parametrix, Inc. 2009

Note: V/C means volume-to-capacity ratio, LOS means Level of Service. * Preferred concept.

The first set of improvements identified in the table above for the eastbound ramp of the interchange were intended to meet the ODOT HDM mobility requirements for new improvements (e.g., $V/C \leq 0.70$). Proposed improvements include installation of a traffic signal and development of dual westbound left turn lanes to accommodate the substantial traffic volume anticipated for this movement (e.g., > 500 vehicles in the PM peak hour). The addition of a second northbound through lane was considered at this intersection to achieve the V/C standard of 0.70. However, it should be noted that this improvement would require widening of the existing bridge over OR 22 to provide two receiving lanes north of the eastbound ramp intersection.

Traffic impacts associated with the large ID zone will also require significant improvements at the intersection of 1st Street with Del Mar Drive to accommodate the high volume of traffic entering and leaving the site. Since this intersection is located within the city limits on a road under the jurisdiction of Marion County, the applicable performance standard is intersection LOS D.

Other intersection improvements identified with Scenario include 1st Street at Main Street where signalization is recommended and the addition of a southbound left turn lane on 1st Street at Willamette Street. This improvement would help to reduce the risk of rear end crashes by southbound moving vehicles. Left turn lane warrants would be met at this location where the existing posted speed is 45 mph.

Safety Considerations

Locations that present safety concerns are typically those experiencing existing crash problems, sight distance limitations, awkward configurations, or other factors that could affect intersection or roadway safety. There are several of these areas in the Aumsville UGB that are addressed in the TSP. None of these areas lies within the IAMP boundary.

Multi-modal Transportation

Each of the proposed roadway and/or intersection improvement options for the OR 22/Shaw Highway interchange and for 1st Street in the vicinity of the interchange would include provision for added bicycle lanes and sidewalks to improve safety, mobility and connectivity by accommodating the travel needs of these users. If additional transit bus stops are added to the system presently serving Aumsville, consideration should be given to any improved bicycle and/or pedestrian facilities that might be needed to provide safe and convenient access to these stops.

Integration with Railroad

The existing Willamette Valley Railroad trackage passes through Aumsville in a generally north/south direction parallel to 1st Street. There are three at-grade railroad crossings within the Aumsville City Limits. There is one crossing on Mill Creek Road just to the east of the intersection of 1st Street with Main Street. This crossing is indicated by pavement markings, flashers, bells and cross-bars. There are no protective gates nor is there illumination. There is a crossing on 1st Street between Cleveland and Willamette Streets. This crossing is indicated by pavement markings, cross-bars and Yield signs. Another crossing is located on Del Mar Drive west of 1st Street. This location has pavement markings, cross-bars and is stop sign-controlled. Just outside of the city limits, there is also an at-grade railroad crossing on the westbound on-ramp from Shaw Highway to OR 22 which has advance signage warning, flashers and gates.

Input from ODOT Rail Division staff⁴ indicates that some improvements to existing crossings may be needed in conjunction with implementation of selected roadway projects. These include:

- Del Mar Drive Rail Crossing - Any modification of Del Mar Street to the west of 1st Street associated with the proposed intersection enhancement may require installation of automatic flashing lights and gate signals at the existing crossing to accommodate an increase in projected traffic volumes. If the crossing is signalized along with signalization at the 1st Street/Del Mar Drive intersection, then the traffic and crossing signals should be interconnected with Traffic Signal Preemption Control (TSPC). The sidewalk crossings along Del Mar Drive approaching but not crossing the tracks will need to be authorized by Rail Division Order and completed over the track.
- 1st Street Rail Crossing – The major challenge at this crossing is the severely skewed 15-degree angle of the road and track intersection. Sidewalks should cross the tracks at a near 90-degree angle. This requirement coupled with the proposed street widening in the area south of Willamette Drive will require right-of-way acquisition. According to ODOT Rail staff, any widening of 1st Street within 360 feet of the track will require that the widening be carried over the track intersection and may require

⁴ Email to Naomi Zwerdling from Michael Hays, ODOT Rail Division, September 29, 2009, and follow-up conversations during November 2009.

installation of automatic signals at the crossing. Additionally, there are several driveways within 100 feet of the crossing that will need to be combined or relocated further from the crossing.

Built and Natural Environment

There are several key challenges that must be addressed in the development of some of the proposed transportation system improvements in the Aumsville study area. These include:

- Minimize impacts on the existing drainage ditch running parallel to and east of 1st Street/Shaw Highway from approximately the OR 22 interchange area to Willamette Street. Relocation of this ditch will likely be required to implement the proposed widening project along 1st Street and this must be done in a manner that retains the water transportation function while minimizing water quality impacts from the project.
- Address the need for water quality treatment associated with various widening projects, particularly along 1st Street.
- Minimize impacts on the existing 100-year floodplains to the north and west of the city, as well as to the south along Mill Creek.
- Minimize impacts to the existing Willamette Valley Railroad crossing locations on the OR 22 westbound on-ramp, 1st Street, Del Mar Drive and Main Street. Due to the very low volume and speeds of existing train traffic along this line, improvements to add gated crossings at existing ungated locations are not proposed.
- The proposed improvements along 1st Street/Shaw Highway, particularly in the vicinity of the OR 22 interchange provide the street system capacity needed to accommodate the economic development potential of the City's new ID zone.

4.4 EVALUATION OF IMPROVEMENT OPTIONS FOR SCENARIO 2: PLUS UGB BUILD-OUT

Evaluation of Mobility and Accessibility Impacts

Table 4-2 summarizes the results of intersection operations analysis for Scenario 2. Scenario 2 includes those actions designed to address the 2030 PM peak hour travel needs associated with a proposed 91-acre UGB expansion as described in TSP *Technical Memorandum #7: Future Conditions*. Worksheets for Scenario 2 operations analysis are included in Appendix E of TSP *Technical Memorandum 8: Transportation Needs and Potential Improvements*.

The UGB expansion is expected to result in a 2030 V/C of 0.82 for eastbound left turns at the intersection of Shaw Highway with the OR 22 westbound ramps. This falls below the OHP standard of 0.85. Signalization would be required to address the long delays experienced with this movement; however, signal warrants would not be met at this location. Since the movement meets ODOT's V/C standard and, since the impacted volume is low (25 vehicles in the peak hour), no improvement is recommended. It is recommended that the northbound through lane be restriped to provide for separated through and left turn movements as traffic volumes increase and left turn warrants are met (these warrants would be met with 2030 traffic volumes). This would enhance safety for northbound-moving traffic by separating through and turning traffic movements.

Additional improvements would be required at the intersection of Shaw Highway with the OR 22 eastbound ramps to accommodate the added traffic associated with the UGB expansion. Consideration was given to three options:

Table 4-2. 2030 PM Peak Hour Levels of Service – Scenario 2: Plus UGB Expansion

No.	Intersections	Improvement	Critical Movement	PM Peak Hour		
				V/C Ratio	Average Delay (sec./veh.)	LOS
1	Shaw Highway @ Brownell Drive	• None needed	--	--	--	--
2	Shaw Highway @ OR 22 WB Ramps	• Widen and restripe for separate NB left	NB Left	0.53	9.8	A
			EB Left	0.82	>200.0	F
			EB Right	0.51	14.6	B
3	Shaw Highway @ OR 22 EB Ramps	<ul style="list-style-type: none"> • (1) Signalize and add SB left, 2nd NB and SB thru and 2nd WB left • (2) Signalize and add SB left, 2nd SB thru, and 2nd WB left • (3) Signalize and add direct ramp for east-to-south traffic, 2nd SB thru, and SB left * 	--	0.69	13.1	B
			--	0.93	24.8	C
			--	0.71	3.4	A
4	1 st Street @ Del Mar Drive	<ul style="list-style-type: none"> • Signalize • Add 2nd NB thru, NB left, 2nd SB thru, dual SB lefts, EB left, WB left, and WB right 	--	0.79	22.7	C
5	1 st Street @ Willamette Street	• Add SB left	SB Left	0.28	10.6	B
			WB All	0.49	22.7	C
6	1 st Street @ Cleveland Street	<ul style="list-style-type: none"> • Signalize • Add NB left 	--	0.64	6.8	A
7	1 st Street @ Church Street	• Install median and convert Church to right-in/right-out	EB Right	0.04	13.3	B
8	1 st Street @ Main Street	<ul style="list-style-type: none"> • Signalize • Add SB left and WB right 	--	0.75	12.2	B

Source: Parametrix, Inc. 2009

* Preferred concept

- Option 1 - Signalize and provide 2 northbound and southbound through lanes, a northbound right turn lane, a southbound left turn lane, dual westbound left turn lanes and a single westbound right turn lane – V/C 0.69
- Option 2- Signalize and provide a single northbound through lane, 2 southbound through lanes, a northbound right turn lane, a southbound left turn lane, dual westbound left turn lanes and a single westbound right turn lane – V/C 0.93
- Option 3 – Signalize and provide a separate direct ramp for traffic from eastbound OR 22 to southbound 1st Street, a single northbound through lane, 2 southbound through lanes, a northbound right turn lane, a southbound left turn lane, and a westbound right turn lane – V/C 0.71

Option 1 would require widening of the existing bridge over OR 22 between the eastbound and westbound ramp termini as there is insufficient space on the existing structure to provide for a single southbound lane and two northbound lanes. This would be a very expensive option.

Option 2 would not meet the OHP mobility standard (existing = 0.85) and the UGB expansion would cause additional degradation of operating performance beyond the level anticipated with UGB Build-out.

Option 3 would provide two ramps for traffic exiting the freeway at Shaw Highway – one would merge direction with Shaw Highway heading south into Aumsville, and the other would provide for traffic heading north toward Shaw (using the existing ramp which would be modified to provide for right turning traffic only onto Shaw Highway. The eastbound-to-southbound traffic heading into Aumsville would be added to the southbound through traffic already on Shaw Highway as it passes through the intersection of the highway with the OR 22 eastbound ramps. Elimination of green time for the large westbound-to-southbound movement at that intersection (as would exist under Options 1 and 2) would significantly improve traffic operations at the intersection resulting in a V/C of 0.71. This could be accommodated with the mobility standard of 0.85. Further conceptual design would be necessary to determine the feasibility of these options, as well as the need for right-of-way acquisition, extension of on-ramp(s), and ramp spacing along OR 22. This assessment should be conducted, as appropriate, as part of future UGB expansions.

Improvements to the intersection of 1st Street with Del Mar Drive would be needed to accommodate additional traffic attracted to the easterly extension of Del Mar Drive when it is fully extended to Bishop Road to serve development in part of the proposed UGB expansion. A second southbound left turn lane would be required, necessitating provision of two eastbound through lanes on Del Mar Drive for at least several hundred feet from the intersection.

Improvement to the intersection of 1st Street and Willamette Street would include the addition of a southbound left turn lane as described above.

It is proposed that the intersection of 1st Street with Cleveland Street be signalized to better accommodate traffic using Cleveland Street to head out of the core residential and business areas of the city. For safety and to avoid rear end collisions, it is also proposed that a northbound left turn lane be added at this intersection.

Due to the low volume of traffic anticipated to use the Church Street leg of the intersection with 1st Street and because of potential traffic back-ups on 1st Street from Main Street (expected to exceed 20 feet), it is proposed that a median be placed in the center of 1st Street to restrict turns from Church Street to right-in and right-out. This would improve traffic operations for left turning traffic at Main Street and would enhance traffic safety.

Two additional turn lanes are proposed to be added at the intersection of 1st Street with Main Street. One would accommodate southbound left turning traffic and the other would serve westbound right turning traffic. These two movements are expected to grow substantially with the proposed UGB expansion to the east of Bishop Road and along Mill Creek Road.

5. INTERCHANGE AREA MANAGEMENT PLAN

5.1 IMPROVEMENT RECOMMENDATIONS

The Aumsville TSP focuses on Aumsville's transportation needs and the decisions that must be made to ensure that the system meets the community's expectations over the long-term. Participants in the planning process created a set of recommendations that implement state transportation planning policies, but are tailored to Aumsville's current and future needs. From all of the input that citizens and businesses offered during the TSP process, there were some clear messages. The highest priorities for improving transportation in Aumsville are:

- Ensure that the community's small town feel and quality of life are maintained while accommodating the need for local economic development.
- Improve pedestrian and bicycle circulation throughout the city.
- Maintain existing facilities.
- Improve safety.

Collectively, the transportation mode-specific plan elements in Chapters 4 through 7 of the TSP describe the proposed capital and operational improvements to the transportation system between 2010 and 2030. While these potential improvements are presented as benefiting one mode, when possible, multiple modes are combined into one project. For instance, the 1st Street road-widening project listed in the Roadway Element could include new bike lanes and sidewalks, as well as improvements for freight mobility and rail safety. The following paragraphs briefly highlight key findings related to transportation improvement recommendations.

Table 5-1 summarizes the recommended street system improvements identified for the two land use scenarios. Long-term recommendations for Scenario 1 are shown in Figure 5-1. Long-term recommendations for Scenario 2 are illustrated Figure 5-2.

Table 5-1. Recommended Street Improvements in IAMP Study Area and Vicinity

No.	Intersections	Scenario 1:	No.	Scenario 2:
		Improvements Needed with UGB Build-out		Improvements Needed with UGB Build-out and Expansion
	Shaw Highway @ Brownell Drive	<ul style="list-style-type: none"> • None needed 		<ul style="list-style-type: none"> • None needed
	Shaw Highway @ OR 22 WB Ramps	<ul style="list-style-type: none"> ▪ None needed 	X-1	<ul style="list-style-type: none"> • Widen and restripe for separate NB left
1	Shaw Highway @ OR 22 EB Ramps	<ul style="list-style-type: none"> ▪ Signalize and add SB left, and 2nd WB left ▪ Widen 1st Street south of intersection for approx. 600 feet to provide 2 northbound and 2 southbound thru lanes 	X-2	<ul style="list-style-type: none"> • Add direct ramp from OR 22 for east-to-south traffic merging into 2nd SB thru • Signalize intersection and add SB left, then modify existing off-ramp to allow right turns only • Widen 1st Street south of intersection for approx. 600 feet to provide 2 northbound and 2 southbound thru lanes

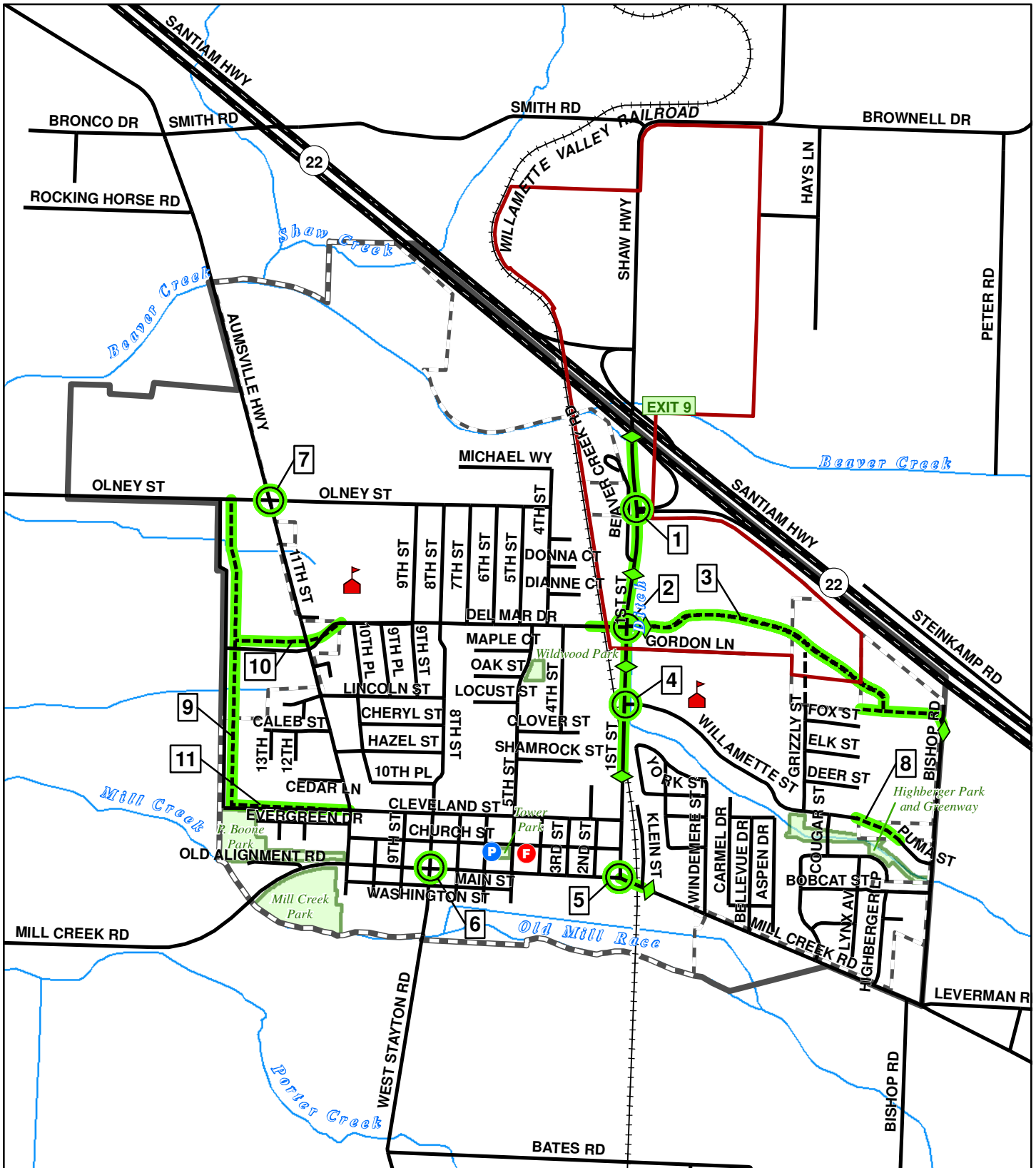
Table 5-1 Continued. Recommended Street Improvements

No.	Intersections	Scenario 1:	No.	Scenario 2:
		Improvements Needed with UGB Build-out		Improvements Needed with UGB Build-out and Expansion
2	1 st Street @ Del Mar Drive	<ul style="list-style-type: none"> • Install traffic signal, and widen to add 2nd NB and SB thru lanes approx. 500 feet north of intersection and 300 feet south • Align with new road to east of 1st Street including addition of left turn lanes for all movements, and WB right turn lane • Transition back to single NB and SB thru lanes between Del Mar Drive and Willamette Street ▪ Improve railroad crossing of Del Mar west of intersection and install automatic gates, interconnect with signal on 1st 	X-3	<ul style="list-style-type: none"> • Same as Scenario 1 plus addition of second SB left turn lane
3	East Del Mar Drive, 1 st Street to Bishop Road	<ul style="list-style-type: none"> • Construct new 3-lane urban roadway with bike lanes and sidewalks 	X-4	<ul style="list-style-type: none"> • Same as Scenario 1
4	1 st Street @ Willamette Street	<ul style="list-style-type: none"> • Install southbound left turn lane • Complete transition for approx. 300 feet from north and improve 2-lane cross-section with bike lanes and sidewalks for approx. 650 feet to south • Install railroad crossing gates and relocate local street access on west side of 1st Street 	X-5	<ul style="list-style-type: none"> • Same as Scenario 1
	1 st Street @ Cleveland Street	<ul style="list-style-type: none"> • None needed 	X-6	<ul style="list-style-type: none"> • Signalize • Add NB left turn lane
	1 st Street @ Church Street	<ul style="list-style-type: none"> • None needed 	X-7	<ul style="list-style-type: none"> • Install median and convert Church access to right-in/right-out
5	1 st Street @ Main Street	<ul style="list-style-type: none"> • Signalize intersection, add bike lanes and sidewalk enhancements • Install automatic railroad gates and interconnect with signal at 1st 	X-8	<ul style="list-style-type: none"> • Same as Scenario 1 plus addition of SB left and WB right turn lanes

Source: Parametrix, Inc. 2009

Note: Only projects in the general vicinity of the interchange are shown in this table and described in this section. See the Aumsville TSP for a complete list of recommended improvements.

It is important to note that the recommended projects on the State of Oregon, Aumsville or Marion County transportation systems that are included in the OR 22/Shaw Highway IAMP are not guaranteed funding and implementation through inclusion in this document. They cannot be considered to be reasonably likely to be constructed during the planning horizon. Consequently, these projects cannot be relied upon to support plan amendments or zone changes (including amendments to the urban growth boundary) to achieve compliance with Oregon Administrative Rule 660-012-0060 unless or until they are included, as appropriate, in the adopted Statewide Transportation Improvement Program (STIP), County CIP or City



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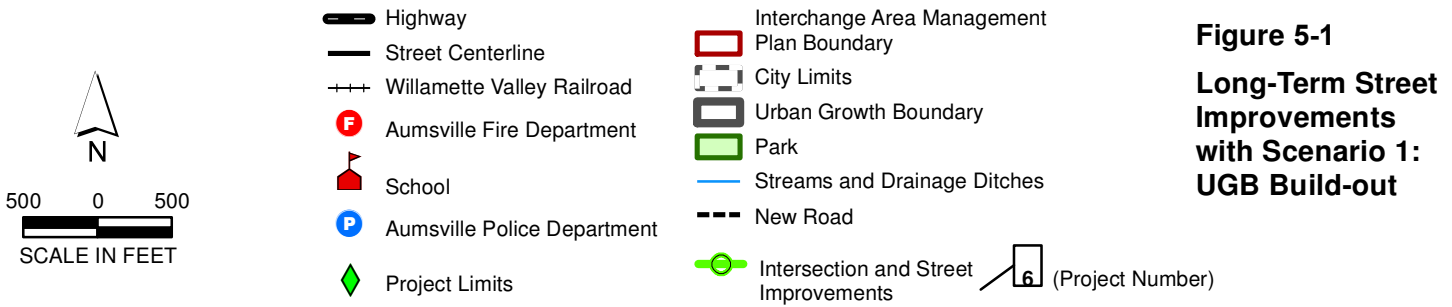
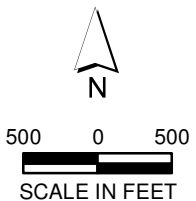
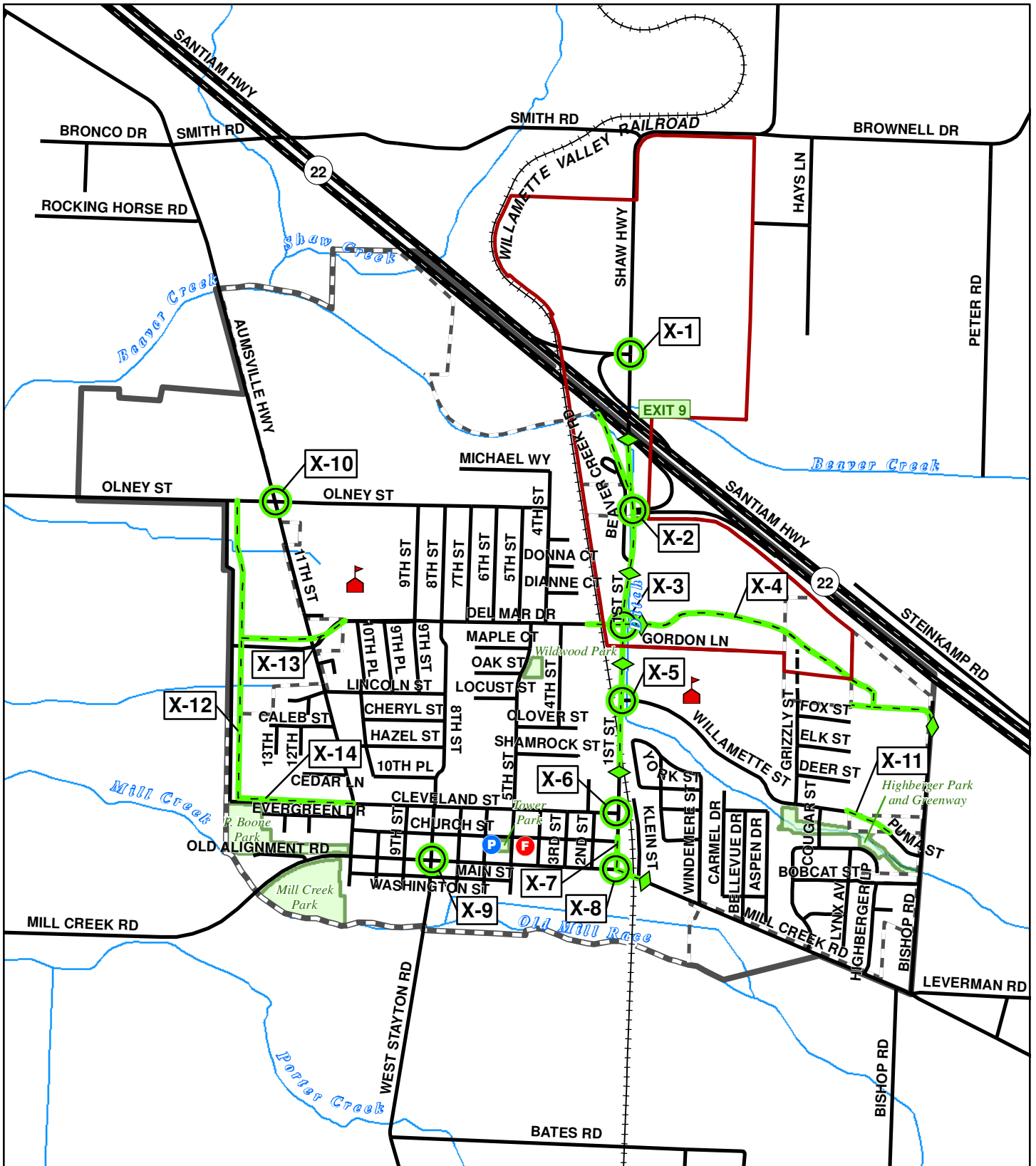


Figure 5-1
Long-Term Street Improvements with Scenario 1: UGB Build-out





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- Highway
- Street Centerline
- Willamette Valley Railroad
- Aumville Fire Department
- School
- Aumville Police Department
- Project Limits

- Interchange Area Management Plan Boundary
- City Limits
- Urban Growth Boundary
- Park
- Streams and Drainage Ditches
- Intersection and Street Improvements
- (Project Number)

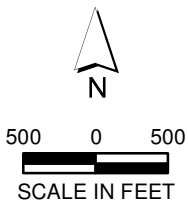


Figure 5-2
Long-Term Street Improvements with Scenario 2: Plus UGB Build-out

Visioning Plan (or CIP) or a specific funding source is identified and supported by any of the three jurisdictions in writing or a funding plan that is supported by any of the three jurisdictions in writing is developed. The projects recommended in this document simply represent state and local agreement about transportation system needs in the project area that have been identified through extensive analysis.

Intersection Improvements

The following paragraphs summarize and describe the improvement recommendations made for each intersection, including a short explanation of key project elements.

OR 22 Ramps at Shaw Highway (#1, #X-1 and #X-2)

The eastbound OR 22 ramp would require improvement under both scenarios, and the westbound ramp would require improvement under the UGB expansion scenario. The improvements proposed for the westbound ramp could include widening and restriping for a northbound left turn lane to reduce conflicts between turning traffic and traffic desiring to proceed northbound toward Shaw. Left turn lane warrants would be met at this location. It should be noted that for a design speed of 55 mph, 835-feet would be required to develop this turn pocket. As only 540-feet of space is available between the bridge and the ramp intersection, a design exception would be required.

The improvements proposed for the eastbound ramp under both scenarios could include signalization of the intersection, the addition of a southbound left turn lane, and the addition of a second southbound through lane which is what is included in the cost estimate. With a design speed of 55 mph, 835-feet would be required to develop the southbound left turn pocket and only 625-feet of space is available. This improvement would also require a design exception.

For conditions with UGB Build-out (Scenario 1), it is also recommended that a second westbound left turn lane be provided. See Figure B-1 in Appendix B for an illustration of this concept. For Scenario 2 (Plus UGB Expansion) it is recommended that consideration be given to relocating the westbound left turning movements to a new and separate single lane off-ramp which merges onto 1st Street as an add lane heading southbound. This merge would occur north of the existing eastbound ramp intersection to provide two southbound through lanes at the intersection. Only westbound right turns toward Shaw would be accommodated at the existing intersection which could be signalized. Signalization is included in the cost estimate prepared for this project, but other improvement concepts could be considered as the project nears implementation.

1st Street and Del Mar Drive Intersection (#2, #X-3)

In the future the east leg of this intersection will be improved to provide access to large undeveloped parcels of ID zoned property. The new east leg should provide separate left, through and right turn lanes for westbound traffic. Separate left turn lanes should also be added to the other approaches. Preliminary signal warrants for the intersection would be met for both scenarios. According to ODOT staff, as a part of this intersection improvement it will be necessary to improve Del Mar Drive to the west of the intersection across the existing railroad at-grade crossing and to install automatic gates. These gates must be interconnected with the new traffic signal at 1st Street. See Figure B-2 in Appendix B for an illustration of this concept. With Scenario 2, additional improvements needed would include adding a second southbound left turn lane. It should be noted that this will require two receiving lanes for future traffic desired to access the ID zoned area and other destinations along Bishop Road. As an alternate to constructing this second turn lane, consideration

should be given to connecting Willamette Street to Bishop Road via Puma Street and accommodating the south-to-eastbound traffic added by the UGB Expansion via this route.

1st Street and Willamette Street Intersection (#4, X-5)

The addition of a southbound left turn lane is warranted and recommended under both scenarios. The left turn lane will improve safety and capacity of 1st Street by providing a space for turning vehicles to wait without interrupting through traffic flow. See Figure B-3 in Appendix B for an illustration of this concept. Improvements to 1st Street in the vicinity of Willamette Street will include providing a full urban cross-section with bike lanes and sidewalks. Additionally, automatic gates at the railroad at-grade crossing are recommended consistent with the comments received from ODOT rail staff.

1st Street and Cleveland Street Intersection (#X-6)

No improvements are proposed for the intersection under Scenario 1. A northbound left turn lane is warranted under Scenario 2. The left turn lane will improve safety and capacity of 1st Street by providing a space for turning vehicles to wait without interrupting the through traffic flow. A signal is also warranted at the intersection to provide sufficient gaps in traffic for the eastbound traffic to enter 1st Street. Cleveland Street is expected to function as an alternative to Main Street for some trips and is one of the few through connections to 1st Street from the west side of the city.

1st Street and Main Street Intersection (#5, #X-7, #X-8)

This intersection is expected to fail and to meet preliminary signal warrants under both scenarios. Installation of a traffic signal is recommended under Scenario 1. Under Scenario 2, in addition to signalization, a separate southbound left turn lane and a westbound right turn lane are needed to accommodate growth associated with the UGB Expansion. In either scenario, the southbound traffic back-up during the 2030 PM peak hour period, is expected to extend to and past Church Street. Therefore, it is recommended for safety and smooth traffic operations that turning movements on Church Street where it joins 1st Street be restricted to right-in, right-out movements only for Scenario 2. Based on comments received from ODOT rail, signalization of the intersection of 1st Street with Main Street will also require installation of automatic gates at the railroad at-grade crossing just to the east of the intersection.

Transportation Demand Management

In addition to physical improvements at the interchange, it is recommended that Aumsville work cooperatively with regional transit providers to maximize the use of transit and Transportation Demand Management (TDM) strategies to reduce the use of single-occupant automobiles, particularly for those traveling to/from Salem. It should be noted that for purposes of determine compliance of development projects with the Transportation Planning Rule (TPR) none of the foregoing projects should be considered as “planned” or committed.

5.2 ACCESS MANAGEMENT

The term access management refers to the process of balancing the need for access to parcels of land adjacent to roadways with the need for safe and efficient through movement of vehicular traffic on the roadway. Frequent driveway and cross-street access can significantly degrade traffic operations along major streets, as motorists must contend with people slowing to turn into adjacent property or attempting to get back onto the major street from a side access location. Not only do frequent driveways adversely affect the operational capacity of a road, they also affect safety in that each driveway or intersecting street represents a

potential conflict point for through-moving vehicles. The strip development that often occurs as a result of the lack of access management can also be inhospitable to pedestrians and can be difficult to adequately serve by transit due to the spread out nature of destinations.

Access management can be implemented by a variety of means. These include median treatments (e.g., raised concrete medians), driveway spacing and/or driveway consolidation (so that there are fewer driveways serving one parcel or multiple parcels), requiring that driveways be placed on lower order streets where a parcel abuts both higher and lower order streets, and intersection spacing to reduce the number of conflict points or signal-controlled locations along a street as the frequency of these locations can reduce the benefits of effective signal timing progression.

Access management can be most effectively implemented during the land development process when access locations and localized street improvements can be adapted to ensure that adjacent street traffic-carrying functions are not degraded. Access management controls are more difficult to implement along streets with developed property due to possible right-of-way limitations and/or the concerns of property owners about business or on-site circulation impacts. In these cases, access management can be incorporated into a roadway improvement project.

Access Management Recommendations

Access management recommendations focus primarily on an approach to meet the requirements of OAR 734, Division 51 in the vicinity of the OR 22/Shaw Highway interchange. Recommended policy and action strategies are incorporated into the IAMP for this interchange and include the following provisions:

General Provisions

1. Restrict all access from abutting properties in the interchange and interchange ramps.
2. Meet or move in the direction of meeting the minimum standards in the 1999 OHP (as amended), Policy C, as follows:
 - When new approach roads are planned or constructed near the interchange, the nearest intersection on a crossroad shall be no closer than 1,320 feet from the interchange, unless no alternative exists for providing property access and/or local street circulation. Measurement is taken from the ramp intersection or the end of a free flow ramp terminal merge lane taper. When this standard cannot be achieved, a formal deviation as per OAR 734-051-0135 (Deviations from Access Management Spacing Standards) shall be required from the Region Access Management Engineer. The IAMP shall document constraints and considerations that will be factored into deviation requests.
 - Deviations are permitted for new access for farm and forestry equipment and associated farm uses, as defined in Oregon Revised Statue (ORS) 215.203, on lands zoned for exclusive farm use, and accepted forest practices on those lands that are within the boundary of the OR 22/Shaw Highway Interchange Area Management Plan (IAMP), but only when access meeting the standards identified above is unfeasible.
 - In attempting to meet access management spacing standards, exceptions may be allowed to take advantage of existing property boundaries and existing or planned public streets, and to accommodate environmental concerns. A formal deviation for this condition shall be required from the Region Access Management Engineer.

3. Replace private approaches with public streets, where feasible, to provide consolidated access to multiple properties.
4. Ensure that all properties impacted by future improvements along 1st Street/Shaw Highway are provided reasonable access to the transportation system.
5. Align approaches on opposite sides of roadways where feasible to reduce turning conflicts.
6. The City and County shall work with ODOT to implement the operational, physical and access recommendations identified in the TSP.

Location Specific Recommendations

Using the strategy identified above, an action plan for each existing approach within the IAMP boundary has been developed as shown in Table 5-2. The long-term actions are intended to be implemented over the 20-year planning horizon of the TSP and IAMP, as funding for improvements becomes available and opportunities for access modifications arise through property development or redevelopment. Locations of the various access points referenced in this table are illustrated in Figure 5-3, which also presents the long-term action plan’s recommendations.

Table 5-2. 1st Street/Shaw Highway Access Actions

Access #	Feet from Interchange	Access Type	Long-Term Action
1	1,280 ft north / west side	Driveway for farm	Allow deviation from standards for all-way farm access
2	770 ft north / west side	Driveway for farm	Allow deviation from standards for all-way farm access
3	600 ft north / east side	Driveway for farm	Allow deviation from standards for all-way farm access
4	440 ft south / west side	Beaver Creek Road	Allow deviation from standards for RIRO movements to access ID zone. Consider long-term access consolidation with other parcels further south on west side of 1 st Street as redevelopment opportunities occur
5	470 ft south/ east side	Driveway for farm	Allow deviation from standards for RIRO emergency access to large parcel development in ID zone
6	960 ft south / west side	Driveway for residence	Allow deviation from standards for RIRO access until property redevelops, then consider consolidation with future adjacent properties or relocation of access to Del Mar Drive
7	1,125 ft south / west side (future east side)	Del Mar Drive (East Del Mar Drive)	Allow deviation from standards for signalized all-way traffic movement. East/west collector street, major access to future development on ID zone.
8	1,320 ft south / east side	Gordon Lane	Future intersection closure when East Del Mar Drive constructed and access can be taken via local street to this collector road.

Prior to implementing the recommendations of this plan regarding access management, input from affected property owners and/or tenants should be obtained to validate assumptions made regarding both property ownership and access requirements related to property development plans.

Deviations Required to Accommodate Existing Land Uses

1. **Shaw Highway Access #1:** This access is located 1,280 feet north of the OR 22 westbound ramp termini intersection on the west side of the highway. The access serves an existing farm located outside of the Aumsville UGB. Use of this property is not anticipated to change over the planning period, nor are there any improvements recommended on Shaw Highway in this area. A deviation from the 1,320 access spacing requirement is requested for this location to maintain current usage.
2. **Shaw Highway Access #2:** This access is located 770 feet north of the OR 22 westbound ramp termini intersection on the west side of the highway. The access serves an existing farm located outside of the Aumsville UGB. Use of this property is not anticipated to change over the planning period, nor are there any improvements recommended on Shaw Highway in this area. A deviation from the 1,320 access spacing requirement is requested for this location to maintain current usage.
3. **Shaw Highway Access #3:** This access is located 600 feet north of the OR 22 westbound ramp termini intersection on the east side of the highway. The access serves an existing farm located outside of the Aumsville UGB. Use of this property is not anticipated to change over the planning period, nor are there any improvements recommended on Shaw Highway in this area. A deviation from the 1,320 access spacing requirement is requested for this location to maintain current usage.
4. **1st Street Access #4:** This access is the intersection of 1st Street with Beaver Creek Road which is located 440 feet south of the OR 22 eastbound ramp termini on the west side of the highway. Currently, full way access is provided at this intersection which serves several residences and a park-and-ride lot located immediately southwest of the OR 22 interchange. As improvements are made to the OR 22 eastbound ramp termini intersection and 1st Street in the vicinity of this intersection, access shall be restricted to right-in/right-out (RIRO) and left-in movements. Additionally, as development or redevelopment occurs on properties fronting 1st Street to the south, access to Beaver Creek Road shall be evaluated for feasibility. Where feasible to connect properties to Beaver Creek Road, this shall be accomplished to eliminate another access location (#6) on the west side of 1st Street. A deviation from the 1,320 access spacing requirement is requested for this location to maintain access to the ID-zoned property, as no other feasible alternatives exist except direct access onto 1st Street.
5. **1st Street Access #5:** This access is located 470 feet south of the OR 22 eastbound ramp termini intersection on the east side of the highway. The access serves an existing farm located inside of the Aumsville UGB. Use of this property is anticipated to change over the planning period consistent with the City's Interchange Development zoning. Improvements are planned for the eastbound ramp intersection and along 1st Street in the vicinity of this access which would make it desirable to either close the access or to limit its use to emergency vehicle traffic when the property is developed. Emergency access shall require an access spacing deviation. Emergency access can be permitted as a restricted access in which case access spacing standards do not apply.
6. **1st Street Access #6:** This access is located 960 feet south of the OR 22 eastbound ramp termini intersection on the west side of the highway. The access currently serves a single family residence. Until such time as this property is redeveloped consistent with its Interchange Development (ID) zoning, driveway access onto 1st Street will need to be maintained. As the ID zone redevelops, opportunities shall be explored to provide access to the site via a new internal street to the Beaver Creek Road/1st Street intersection. Alternately, consideration could be given to providing access to this parcel via a new, re-oriented driveway onto Del Mar Drive just west of the 1st Street intersection and east of

the Willamette Valley Railroad tracks. A deviation from the 1,320 access spacing requirement is requested for this location to maintain current usage until an opportunity to modify the access arises. If the property does not redevelop prior to signalization and improvements at the intersection of 1st Street with Del Mar Drive, access may need to be limited to RIRO only.

Deviation Required to Accommodate Future Roadway Improvement

1. **1st Street Access #7:** This access is the intersection of 1st Street with Del Mar Drive which is located 1,125 feet south of the OR 22 eastbound ramp termini on the west side of the highway. Currently, full way access is provided at this intersection which serves the residential area on the north side of the City. This street also provides access to the industrial area along Olney Street. The street is currently stop sign-controlled at its intersection with 1st Street. With development of the ID zone on the east side of 1st Street, a new, easterly leg will be added to this intersection providing the primary access route into and out of the ID zone. Based on recommendations developed for the City's TSP, this intersection will be widened to add through and turning lanes, and will be signalized. A deviation from the 1,320 access spacing requirement is requested for this location to maintain access to the existing Del Mar Street on the west side of 1st Street and to accommodate proposed improvements that add an easterly leg to the intersection as the ID zone is developed. The easterly leg of the intersection would be known as East Del Mar Drive.

Recommended Access Closure

1. **1st Street Access #8:** This access is the intersection of 1st Street with Gordon Lane, a private road serving existing farm uses, which is located approximately 1,320 feet south of the OR 22 eastbound ramp termini on the east side of the highway. Currently, full way access is provided at this intersection which is stop controlled at 1st Street. As the ID-zoned area to the north develops, access to this property can be provided via a new local north/south street that shall be built as a part of any development on site currently served by Gordon Lane. This new local road will allow access to the property to be made via the signalized intersection at Del Mar Drive and 1st Street. Closure of Gordon Lane at 1st Street is recommended at such time as alternate access is provided, the existing access easement is abandoned and the use of the property changes. If the property does not redevelop with access via Del Mar Drive prior to signalization and improvements at the intersection of 1st Street with Del Mar Drive, access onto 1st Street may need to be limited to RIRO only.



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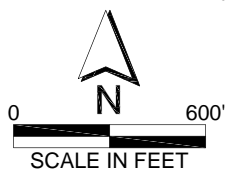
Driveway Access/
Location Number



Eliminate With Interchange
Reconstruction



Consider Elimination/Consolidation
with Redevelopment



**Figure 5-3
Long Term
Action Plan**

6. ADOPTION AND IMPLEMENTATION

This IAMP has been prepared in conjunction with development of a Transportation System Plan for the City of Aumsville. Both the IAMP and the TSP were prepared cooperatively with the affected jurisdictions including the City, ODOT and Marion County. Public involvement in developing the TSP and IAMP development included participation by a Planning Advisory Committee (PAC) throughout the planning process, three public events and briefings of City Council at regular meetings that were open to the public. The city newsletter which is delivered regularly to all residents, also periodically included articles about the TSP and IAMP as various milestones were reached.

Adoption and implementation of the Aumsville TSP and OR 22/Shaw Highway IAMP will be critical to addressing the long-term transportation impacts in the interchange area associated with anticipated land development. Adoption and implementation will occur in different ways at different levels of government. It is necessary that the City of Aumsville incorporate the elements of the IAMP into the TSP as it is adopted, and to the City's development ordinance. Marion County will need to make modifications to its existing Rural TSP and its development code to reflect the elements of the IAMP. Adoption and implementation will involve Planning Commission and City Council hearings at the city level, and County Commission hearings at the county level. Following successful adoption of the OR 22/Shaw Highway IAMP at the local level, the document will be presented to the Oregon Transportation Commission (OTC) for review and adoption.

As noted earlier in this IAMP, the improvements listed in the Improvement Recommendations (Section 5.1) are not guaranteed future funding and cannot be considered reasonably likely to be funded during the identified planning horizon for purposes of addressing OAR 660-012-0060. For recommended projects to be considered reasonably likely to be funded during the identified planning horizon, they must either be selected for inclusion in the STIP, associated with a specific source of funding that is supported by ODOT in writing, or identified in a funding plan that is supported by ODOT in writing. The STIP is a scheduling and funding document.

Unlike projects lists contained in the STIP, the IAMP project list is not required by federal or state laws to be "fiscally constrained." Fiscal constraint is defined as a "*demonstration of sufficient funds (federal, state, local, and private) to implement proposed transportation system improvements, as well as to operate and maintain the entire system, through a comparison of revenues and costs.*"⁵ This means that this plan can provide a single comprehensive list of regional transportation improvements needs and associated costs without having to provide a fiscal rationale as to how the respective projects will be funded. With this rationale, however, the projects cannot be used to support local land use changes.

The OR 22/Shaw Highway IAMP recommendations, therefore, act only as a reference for regional and local officials (City of Aumsville and Marion County) to consult when (1) considering projects to propose to the State for inclusion in the STIP; (2) developing priorities for local funding; (3) determining project needs associated with private development proposals; and (4) determining projects needed to support publicly or privately initiated plan comprehensive amendments and zone changes. Because the cost of needed transportation improvements across the state far exceeds available funds, state officials must decide what projects to fund on the state system, through inclusion in the STIP, based on a

⁵ Source: Federal Highway Administration web page: <http://www.fhwa.dot.gov/planning/fcdef62805.htm>

thorough evaluation of all projects proposed statewide. This evaluation process is detailed in the *STIP User's Guide*.⁶

6.1 IMPLEMENTATION GOAL AND SUPPORTING POLICIES

The following goal and supporting objectives were to provide guidance to the development, modification and implementation of the OR 22/Shaw Highway IAMP. This goal and objectives provide a statement of intent for the IAMP and provide support for the implementing actions that will be taken by the City of Aumsville, Marion County and ODOT. They articulate the community's vision of a system of transportation facilities and services that provide for local needs and maintain the City's commitment to managing growth, supporting economic development, and preserving quality of life. They also support the requirements of State Planning Goal 12 (the Transportation Planning Rule), the Oregon Transportation Plan (OTP), and the Oregon Highway Plan (OHP). The draft goal and objectives are intended to provide the overall guidance necessary for the IAMP

IAMP Goal - To ensure that the OR 22/Shaw Highway Interchange area continues to operate and function as designed and to recommend land use measures to protect the function of interchange, and improvement strategies to meet identified transportation needs.

IAMP Policies

As stated in Policy 3C of the 1999 OHP, "it is the policy of the State of Oregon to plan for and manage grade-separated interchange areas to ensure safe and efficient operation between connecting roadways."⁷ Based on this definition and consideration of project specific local transportation issues, the policies of the OR 22/Shaw Highway IAMP are to:

1. Prolong the useful life of the state's investment in the OR 22/Shaw Highway Interchange, while maintaining the existing State Highway and National Highway System (NHS) classifications for Oregon Highway 22, and Collector classification for Shaw Highway.
2. In the absence of a specific interchange improvement project, recommend cost-effective improvement strategies to ensure that the interchange area conforms to current design standards and safely accommodates the long-term capacity needs of the system.
3. Provide for an adequate system of local roads and streets to provide access and circulation within the interchange area.
4. Through access management measures, control or decrease the number of conflict points on Shaw Highway/1st Street in the vicinity of the OR 22 Interchange.
5. Provide feasible and equitable driveway relocation alternatives for property owners with current direct access to Shaw Highway.
6. Balance the need for the interchange to support community development and economic interests with the need for safe and efficient operation within the interchange area, consistent with the Aumsville and Marion County Comprehensive Plans.

⁶ STIP User's Guide available on-line at: <http://oregon.gov/ODOT/TD/TP/stipguide.shtml>

⁷ ODOT, 1999

7. Establish agreements with local governments on how to effectively manage the long-term function of the interchange.
8. Monitor how the interchange capacity is managed through cooperation with local governments.
9. Provide certainty for property and business owners and local governments.

6.2 IMPLEMENTATION AUTHORITY

Local agency authority to implement the provision of the IAMP comes through state statutes, and through city and county comprehensive plans and development codes or ordinances. The State of Oregon's authority is provided by policy and administrative rules governing the transportation system under its jurisdiction through the following:

- State Agency Coordination Rule and Agreement (SAC 1990-OAR 731-015) – This rule defines ODOT actions that are related to land use and identifies how ODOT will meet its responsibilities for coordination of land use activities on a statewide basis involving other state agencies and local governments.
- Transportation Planning Rule (OAR 660-012) – This rule reflects one of many statewide goals that seeks to protect the long-term livability of Oregon's communities. The TPR requires that the development of multi-modal transportation plans be coordinated with land use plans, and that implementation of transportation improvements be consistent with planned land uses.
- Access Management Rule (OAR 734-051) – This rule guides the location, construction, maintenance and usage of access approaches onto a state highway right-of-way that is under the jurisdiction of ODOT. This rule also governs actions related to these approaches including closure of existing approaches, spacing standards, deviations from standards, medians, grants of access, indentures of access, and an appeals process.

6.3 IMPLEMENTATION STEPS AND RESPONSIBILITIES

This section describes the actions that will be undertaken by each responsible jurisdiction to implement the transportation improvements in the IAMP.

City of Aumsville Actions

The City of Aumsville should take the following actions to implement the IAMP for the OR 22/Shaw Highway interchange:

- Amend the City's Development Ordinance to include a new section 22.13 that will add intersection and driveway access spacing standards consistent with those of ODOT and Marion County on facilities under the jurisdiction of these entities and create access spacing standards for City streets.
- Amend the City's Development Ordinance to include a new section 22.16 to recognize the IAMP boundary and address the City's responsibilities within that boundary including policy commitments and specific actions as outlined for Aumsville in the IAMP document.
- Amend the City's adopted Zoning Map to include the boundaries of the Interchange Management Area.

- Amend the City's Development Ordinance to include a new section 22.15 that will institute Transportation Impact Analysis thresholds and procedures to evaluate the traffic impacts and mitigation needed as land development within the IAMP boundary and UGB occurs.
- Amend the City's Development Ordinance to include a new section 10.15 that will institute a trip budget for ID-zoned land within the IAMP boundary. The purpose of this trip budget is to manage the growth of traffic within the ID zone to balance the City's economic development objectives with maintaining the long-term functionality of the interchange.
- Work cooperatively with ODOT and Marion County to identify changes to the adopted mobility standards at the OR 22/Shaw Highway interchange at such time as these changes may be necessitated by community growth.
- When considering a UGB expansion that will affect the OR 22/Shaw Highway interchange, the City will work cooperatively with Marion County and ODOT to review traffic impacts and identify appropriate mitigation.

Marion County Actions

Marion County will perform the following actions:

- Through new County ordinance, adopt the IAMP boundary, along with policy commitments and specific actions as outlined for Marion County in the IAMP document to support preservation of the long-term functionality of the interchange.
- In cooperation with the City, close the identified approach(es) along 1st Street as identified in the IAMP, when feasible.
- As development opportunities arise and in cooperation with the City, consolidate the approach on 1st Street as identified in the IAMP.
- Reaffirm the County's commitment to preserving existing EFU land on the north side of the OR 22/Shaw Highway interchange.
- Work cooperatively with ODOT and the City of Aumsville to identify changes to the adopted mobility standards at the OR 22/Shaw Highway interchange at such time as these changes may be necessitated by community growth.
- When considering a UGB expansion that will affect the OR 22/Shaw Highway interchange, Marion County will work cooperatively with the City of Aumsville and ODOT to review traffic impacts and identify appropriate mitigation.
- As funding is available and opportunities arise, work cooperatively with ODOT who would purchase access control along Shaw Highway north of the OR 22/Shaw Highway interchange within the IAMP boundary.

ODOT and State Actions

ODOT and the State of Oregon will perform the following actions:

- Adopt the IAMP as a facility plan (OTC).
- Work with the City of Aumsville and Marion County to secure funding for and construct applicable IAMP-identified transportation system physical improvements to state facilities.

- Participate and comment on local land development actions with the potential to affect the interchange.
- Ensure that proposed land use changes comply with OAR 660-012-0060 of the TPR within the management area and require that land use changes mitigate to the OHP mobility policy at the ramps for the planning horizon (where mobility policy standards are being met) or for the day of opening (where mobility policy standards are exceeded).
- Reduce mobility standard for the westbound ramp terminal of the OR 22/Shaw Highway interchange to $V/C = 0.50$ to manage traffic growth within the existing UGB and to preserve roadway and intersection capacity for future UGB expansion(s).
- Work cooperatively with the City of Aumsville and Marion County to identify changes to the adopted mobility standards at the OR 22/Shaw Highway interchange at such time as these changes may be necessitated by community growth.
- When considering a UGB expansion that will affect the OR 22/Shaw Highway interchange, work cooperatively with the City of Aumsville and Marion County to review traffic impacts and identify appropriate mitigation.
- As funding is available and opportunities arise, work cooperatively with Marion County who would purchase access control along Shaw Highway north of the OR 22/Shaw Highway interchange within the IAMP boundary.

Oregon Department of Land Conservation and Development (DLCD) Actions

DLCD will perform the following actions:

- Acknowledge any TSP refinements made as part of IAMP implementation.
- Review IAMP

APPENDIX A

Aumsville 2030 Development Expectations

APPENDIX A AUMSVILLE 2030 DEVELOPMENT EXPECTATIONS

POTENTIAL FUTURE DEVELOPABLE LAND

This appendix discusses potential future land development in the Aumsville study area including both within and in addition to the existing UGB. These development forecasts will form the basis upon which the growth in future traffic volumes and the evaluation of improvement needs is founded.

Within Existing Urban Growth Boundary

The City of Aumsville's UGB is 640 acres in size. An assessment of buildable lands¹ for this area was performed by the City's planning consultant so as to predict the type and location of likely future development (a summary of this assessment is included in Table A-1). This land use survey was initially performed in the Fall 2006, and was updated to account for the recent subdivisions and an expansion of the UGB. The land use survey is based on the existing Aumsville Comprehensive Plan and Zoning Ordinance designations for property within the City Limits. Existing zoning in the city is illustrated in Figure A-1. For parcels outside of the city limits but within the UGB, land uses are categorized by the expected City zoning for each parcel.

The land use survey identifies existing developed parcels, parcels with redevelopment potential, vacant parcels, and parcels that are currently occupied by "non-optimal" uses. These categories are defined as follows:

- Developed – Parcels which are built upon without space for additional development
- Redevelopable – Parcels which are built upon with space for additional development
- Vacant – Parcels without existing urban land uses
- Non-optimal use – A use that is not the primary development type as designated under the zoning code. Examples of non-optimal uses include: residential development in a CL, I or ID zone, or industrial or commercial development in an RS or RM zone.

Buildable lands include those with potential for redevelopment, those that are currently vacant and those currently supporting non-optimal land uses that are assumed to redevelop.

For purposes of the land use survey, all area measurements are described in acres. Area is determined parcel by parcel based on information contained on the Marion County Tax Assessor maps. For all non-industrial parcels where assessor maps did not display parcel areas, the parcel dimensions were used to estimate a square footage which was converted to acres. The conversion to acres was done by placing ranges of square footages into acreage categories delineated by one-hundredth acre in size. The area of all industrially zoned parcels was determined by the Marion County Tax Assessor's database. The only estimations on these areas occurred when lots included a portion outside the UGB. For two unusual parcels the following assumptions were made:

- Parcel 82W24C lot 1800 – is Compost Oregon which includes no buildings but uses all the land with working compost distribution piles and trucking lanes. This parcel was assumed to be fully developed.
- Parcel 82W25B lots 100 and 101 – are covered with trailers. It was assumed that this parcel was fully developed.

¹ Buildable acreage does not include land that is physically constrained (for example, wetlands, flood hazards, steep slopes).

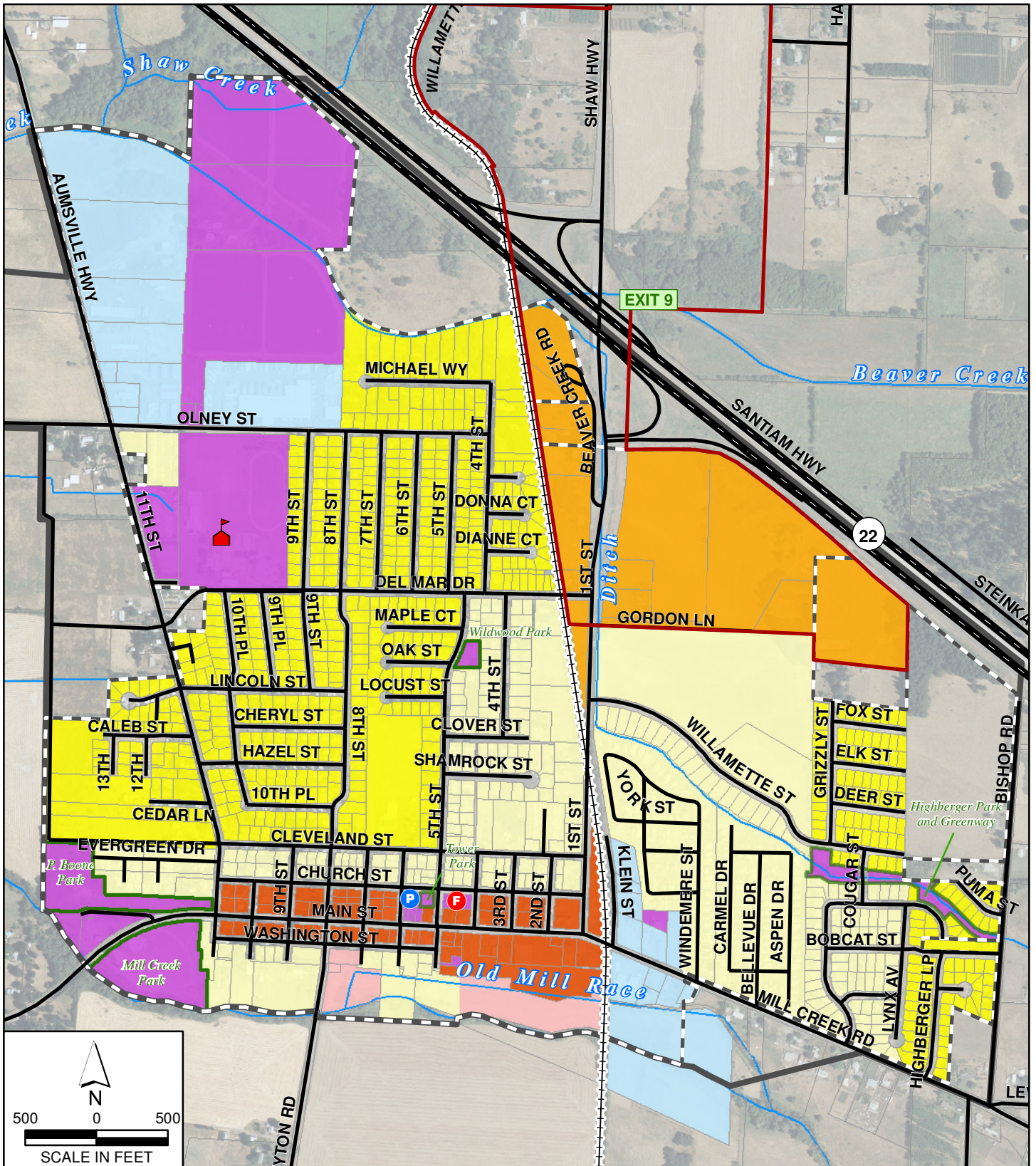
Table A-1 summarizes the amount of available buildable land, by land use type², within the study area. Figure A-2 shows the location of Transportation Analysis Zones (TAZs) for the area within the UGB. TAZs are used to aggregate generally homogeneous land uses into specific geographic areas for the purpose of estimating future traffic demand and assigning that demand to the surrounding street system. Figure A-3 illustrates the approximately location of developable land within the UGB. A detailed breakdown of buildable lands by parcel is included as Attachment A to this appendix.

As noted in the table, there is an estimated 251 acres available for development within the existing Aumsville UGB. Slightly more than 94 acres is zoned for single family residential uses which could accommodate approximately 417 new dwelling units (at 4.44 dwelling units per acre per the Aumsville Comprehensive Plan). This represents a population increase of nearly 1,169 persons (based on the 2.8 persons per household rate assumed in the Comprehensive Plan). Approximately 31 acres is zoned for multi-family residential uses which could accommodate about 247 new dwelling units (at 7.96 per acre) and 691 persons.

Table A-1. Aumsville Buildable Acreage Within Existing UGB

TAZ	Comprehensive Plan Zoning Designation	Buildable Acreage
#1	Single Family Residential	1.71
	Industrial	2.37
	Public	0.5
#2	Industrial	41.03
#3	Single Family Residential	25.15
	Multi-Family Residential	0.67
	Public	3.0
#5	Interchange Development	7.73
#6	Interchange Development	47.89
#7	Single Family Residential	35.99
	Multi-Family Residential	9.18
	Public (school)	12.07
#8	Multi-Family Residential	8.75
	Commercial (CBD)	0.87
	Interchange Development	1.05
#9	Single Family Residential	5.73
	Commercial (CBD)	0.25
	Public	0.20
#10	Single Family Residential	0.18
	Multi-Family Residential	0.24
	Commercial (CBD)	1.10
#11	Single Family Residential	14.35
#12	Multi-Family Residential	6.28
	Commercial	0.77
#13	Industrial	4.59
#14	Single Family Residential	11.14
	Multi-Family Residential	5.68
	Commercial	0.67
	Industrial	2.07

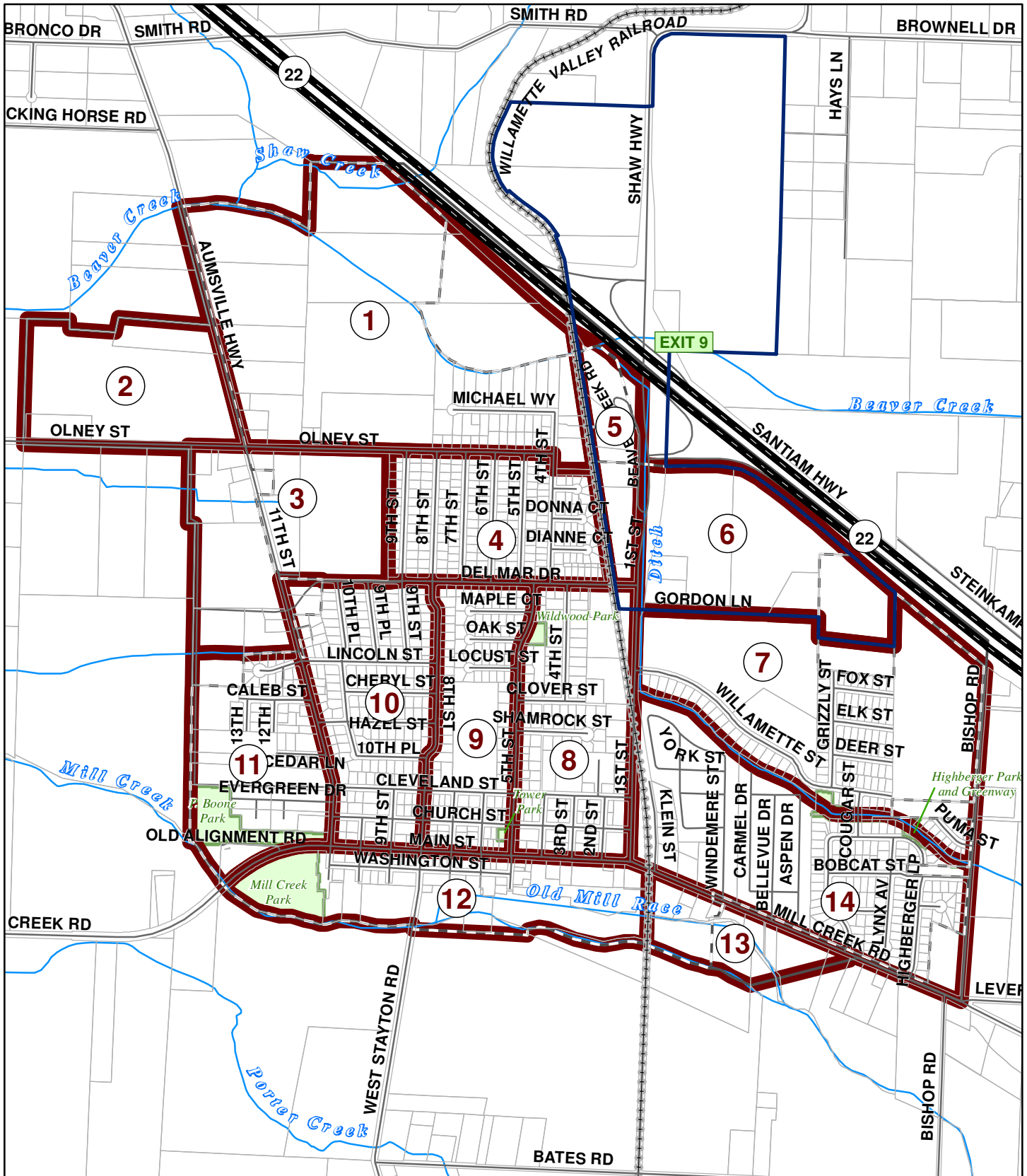
² “Land use types” represent Zoning designations as described in Table 3-1.



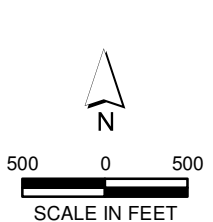
File: Aumsville_Zoning.mxd Date: July 23, 2010

- | | | |
|-----------------------------|------------------------------|------------------------------|
| Highway | Interchange Area Management | Commercial |
| Street Centerline | Plan Boundary | Commercial Business District |
| Willamette Valley Railroad | City Limits | Industrial |
| Aumsville Fire Department | Urban Growth Boundary | Interchange Development |
| Aumsville Elementary School | Taxlot | Public |
| Aumsville Police Department | Park | Residential Multi-Family |
| | Streams and Drainage Ditches | Residential Single-Family |

Figure A-1
Aumsville
Zoning
Designations



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





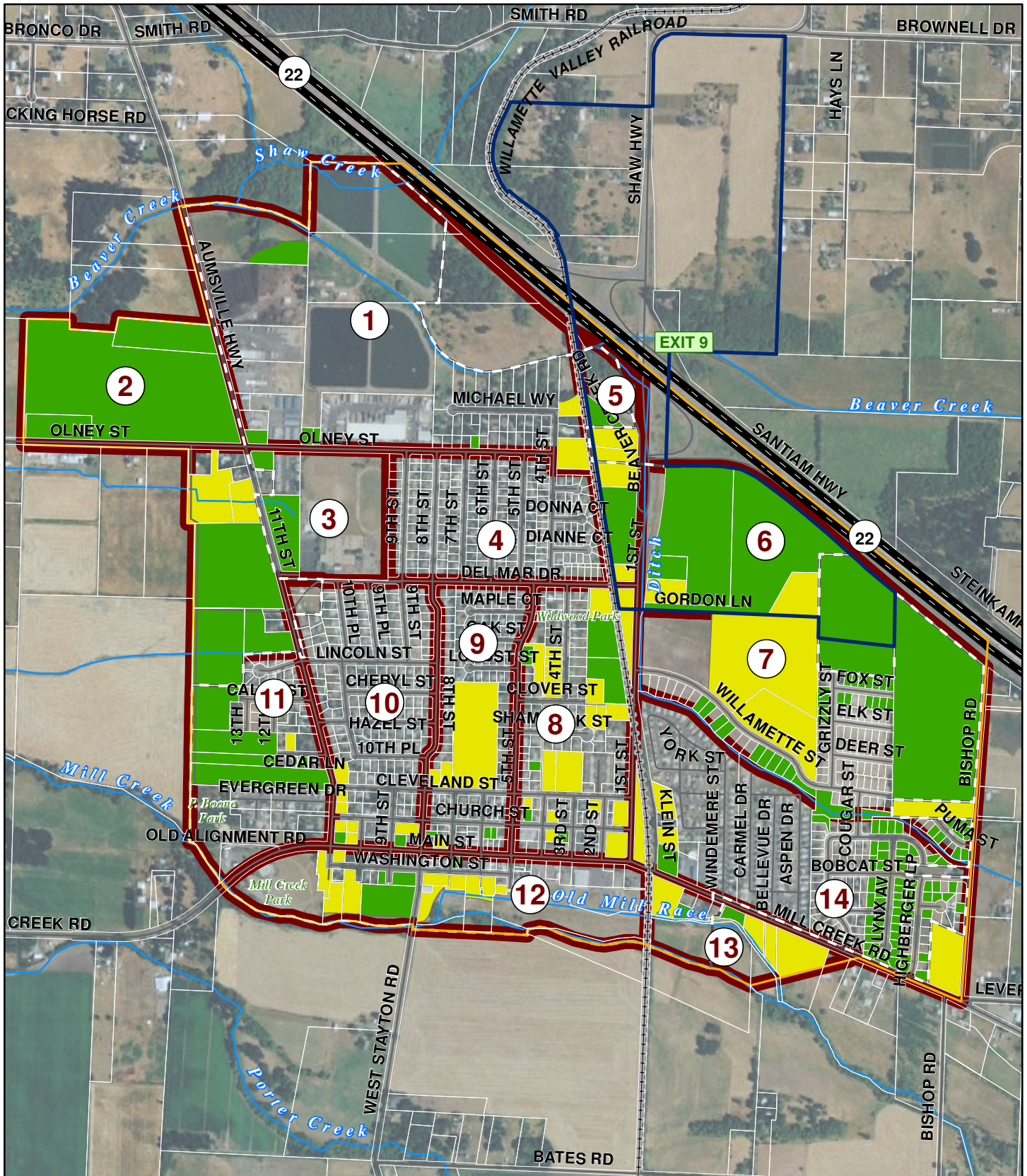
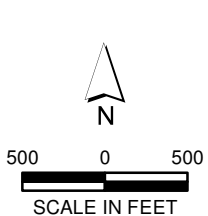
- | | | | |
|---|-----------------------------|---|------------------------------|
|  | TAZ Boundary |  | City Limits |
|  | Interchange Area Management |  | Urban Growth Boundary |
|  | Plan Boundary |  | Taxlot |
|  | Highway |  | Park |
|  | Street Centerline |  | Streams and Drainage Ditches |
|  | Willamette Valley Railroad | | |

Figure A-2
Aumsville
Transportation
Analysis Zones

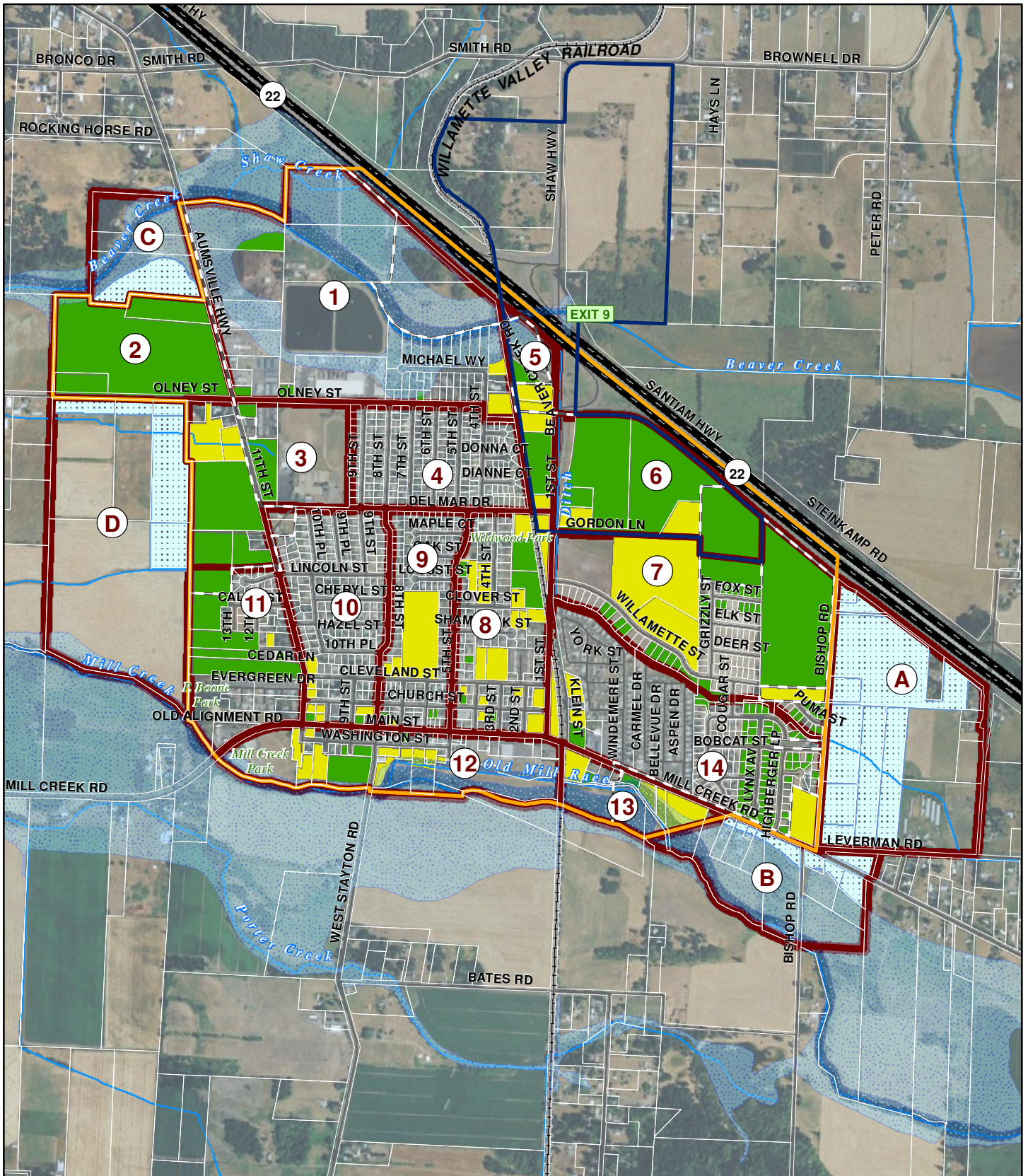


File: Aumsville_Buildable.mxd Date: July 23, 2010

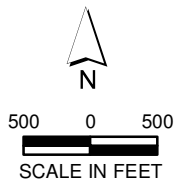


- | | | |
|--|--|------------------------------|
| Vacant Buildable Lands Inventory | | City Limits |
| Partially Vacant Buildable Lands Inventory | | Highway |
| | | Street Centerline |
| | | Willamette Valley Railroad |
| | | Streams and Drainage Ditches |

Figure A-3
Buildable Lands
Within the Aumsville UGB



File: Aumville_Buildable_LocalArea.mxd Date: July 23, 2010



- Vacant Buildable Lands Inventory
- Partially Vacant Buildable Lands Inventory
- Buildable Lands Outside of UGB
- TAZ Boundary
- Interchange Area Management Plan Boundary
- Urban Growth Boundary
- City Limits
- Highway
- Street Centerline
- Willamette Valley Railroad
- Streams and Drainage Ditches
- 100 Year Flood Area
- Floodway

Figure A-4
Buildable Lands
Outside the Aumville UGB

Table A-1 Continued. Aumsville Buildable Acreage Within Existing UGB

TAZ	Comprehensive Plan Zoning Designation	Buildable Acreage
	Total Residential Single Family	94.24
	Total Residential Multi-Family	30.80
	Total Commercial (including CBD)	3.66
	Total Interchange Development	56.67
	Total Industrial	50.06
	Total Public	15.77
	Total Buildable Acreage	251.20

A modest amount of commercially-zoned land is available for development within the UGB (about 4 acres), however, the Interchange Development zone could also be used to accommodate appropriate commercial development that met the purpose of the zone and did not adversely compete with the downtown commercial core. Approximately 12 acres of the land designated as “public” represents the proposed school on the Baptist Church property along 1st Street.

Potential Urban Growth Boundary Expansion

An analysis was conducted by the City in coordination with DLCD to identify the additional acres by zoning type that are expected to be needed over the next 20 years within the Aumsville UGB to meet community growth expectations.

In general, it is anticipated that UGB expansion will occur predominantly to the east and west of the city due to the physical constraints that exist on the north and south (e.g., wetland and 100-year floodplains/floodways. Attachment B presents a detailed assessment of the likely locations by tax lot where this expansion could occur. However, it should be noted that future growth may not actually occur exactly as depicted in this attachment. The tax lot descriptions are meant to serve as a guide for mapping and traffic analysis purposes as a part of the TSP process. Table A-2 presents a summary of the anticipated 20-year growth outside of the existing Aumsville UGB.

The land uses in Table A-2 have been spatially organized by TAZ A through D (to distinguish them from the TAZs within the UGB which are numbered). These new TAZs are illustrated in Figure A-4.

Table A-2. Aumsville Buildable Acreage Outside Existing UGB

TAZ	Comprehensive Plan Zoning Designation	Buildable Acreage
A	Community Park	26.64
	Single Family Residential	28.46
	Neighborhood Commercial	2.06
B	Neighborhood Commercial	5.94
C	Industrial	7.95
D	Industrial	4.72
	Multi-Family Residential	15.43
	Total Residential Single Family	28.46
	Total Residential Multi-Family	15.43
	Total Commercial (including CBD)	8.0
	Total Industrial	12.67
	Total Public	26.64
	Total Buildable Acreage	91.2

As indicated in the table, the UGB expansion in TAZ A would add approximately 26 acres of publicly-owned space to be developed for community park uses. The park would be located east of Bishop Road

and would be accessed via the planned easterly extension of Del Mar Drive. 28.46 acres of single family residential uses are proposed for the area east of Bishop Road and generally south of the park. This area would be accessed by Bishop Road and Leverman Road and, based on densities in the City's existing Comprehensive Plan, would include 126 dwelling units. A small 2-acre neighborhood commercial use would be developed on the northeast quadrant of Bishop Road and Leverman Road.

TAZ B would include an additional 5.9 acres of commercial use located along the south side of Mill Creek Road, both to the east and west of Bishop Road. Development in this area would be constrained by existing the 100-year floodplain in this area (see Figure A-4).

TAZ C is located on the west side of 11th Street, north of the existing UGB and is significantly constrained by the existing floodplain associated with Beaver Creek. Approximately 8 acres of industrial property have been identified in this TAZ.

TAZ D is located on the south side of Olney Street immediately to the west of the existing UGB. Industrial development within this TAZ is anticipated to occur along the southern edge of Olney Street for a total of approximately 4.7 acres. Multi-family residential development is proposed for the area south of the industrial property along Olney Street and west of the existing UGB for a total of 15.4 acres. Based on densities in the city's existing Comprehensive Plan, 122 dwelling units could be developed on this acreage.

**Attachment B
2030 Buildable Lands Outside Aumsville UGB**

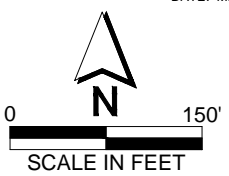
TAZ	Taxlot	Lot #	Buildable Acres	Comments
A	081W30D	300	0.79	Community park
A	081W30D	400	1.31	Community park
A	081W30D	500	2.67	Community park
A	081W30D	600	21.87	Community park
A	081W30D	700	1.82	SF residential
A	081W30D	800	6.77	SF residential
A	081W30D	900	3.60	North half - SF residential
A	081W30D	900	2.06	South half - N-hood commercial
A	081W30D	1000	8.35	SF residential
A	081W30D	1100	7.92	SF residential
	TAZ Total		57.16	
	<i>Total Park</i>		<i>26.64</i>	
	<i>Total SF Res</i>		<i>28.46</i>	
	<i>Total Comm.</i>		<i>2.06</i>	
B	081W31AB	600	1.62	N-hood commercial
B	081W31AB	700	0.73	Outside of floodplain - N-hood commercial
B	081W31AB	800	0.69	Outside of floodplain - N-hood commercial
B	081W31AB	900	0.71	Outside of floodplain - N-hood commercial
B	081W30B	100	1.35	Outside of floodplain - N-hood commercial
B	081W30B	200	0.21	Outside of floodplain - N-hood commercial
B	081W30B	300	0.17	Outside of floodplain - N-hood commercial
B	081W30B	400	0.23	Outside of floodplain - N-hood commercial
B	081W30B	500	0.23	Outside of floodplain - N-hood commercial
	TAZ Total		5.94	
C	082W24C	501	7.95	Industrial
	TAZ Total		7.95	
D	082W25B	500	2.21	North part along Olney - Industrial
D	082W25B	600	1.33	North part along Olney - Industrial
D	082W25B	700	1.18	North part along Olney - Industrial
D	082W25B	700	10.4	South part - Multi-family residential
D	082W25C	100	5.03	Northeastern part as wide as 082W25C 700 - Multi-family residential
	TAZ Total		20.15	
	<i>Total Industrial</i>		<i>4.72</i>	
	<i>Total MF Res</i>		<i>15.43</i>	
	Total SF Res		28.46	
	Total MF Res		15.43	
	Total Comm		8.00	
	Total Industrial		12.67	
	Total Park		26.64	
	GRAND TOTAL		91.2	

APPENDIX B






Improvement Concepts for OR 22/Shaw Highway Interchange Area



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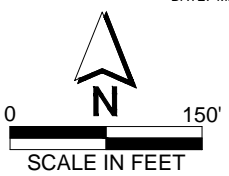
LEGEND

-  TRAFFIC SIGNAL
-  RAILROAD CROSSING
-  EDGE OF PAVEMENT
-  SIDEWALK / CURB
-  STRIPPING

**Figure B-1
OR HWY 22 EB Ramps At
Shaw Highway
UGB Build-out**



DATE: Mar 25, 2010 FILE: PO2395051F-08



LEGEND






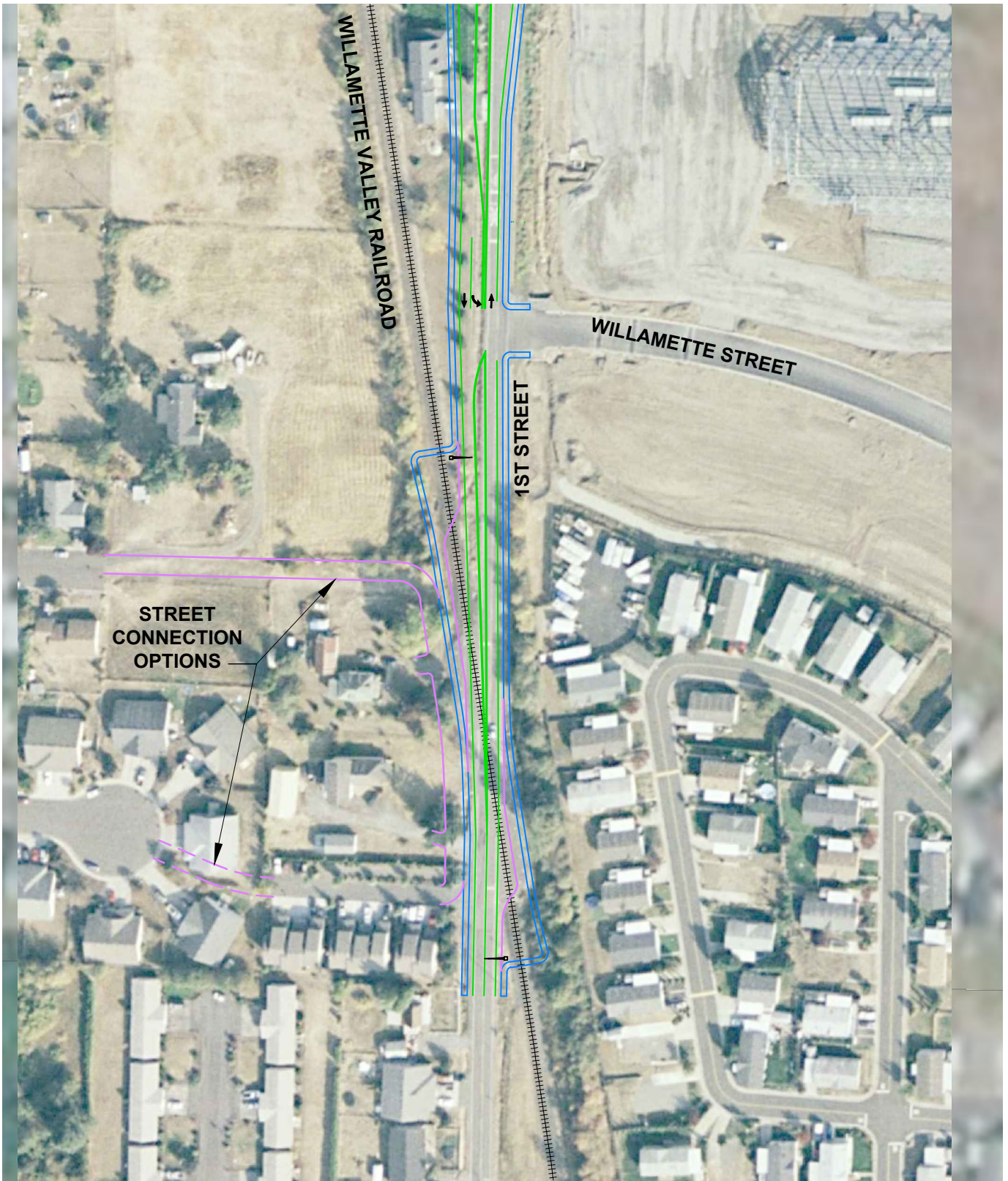
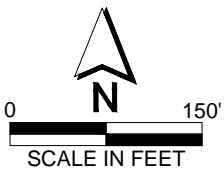
-  TRAFFIC SIGNAL
-  RAILROAD CROSSING
-  EDGE OF PAVEMENT
-  SIDEWALK / CURB
-  STRIPING

Figure B-2
1st Street At Del Mar Drive
UGB Build-out



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LEGEND





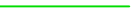

-  TRAFFIC SIGNAL
-  RAILROAD CROSSING
-  EDGE OF PAVEMENT
-  SIDEWALK / CURB
-  STRIPING
-  ALTERNATE LOCAL ACCESS

Figure B-3
1st Street At Willamette Street
UGB Build-out