




Millersburg TSP

Transportation System Plan

TRANSPORTATION SYSTEM PLAN, VOL. 2

DECEMBER 2016

CITY OF
Millersburg
LINKING AGRICULTURE WITH INDUSTRY

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City of Millersburg

Transportation System Plan

VOLUME 2 – REFERENCE MATERIAL

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

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December 2016

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A. Technical Memorandum #1: Public and Stakeholder Involvement Strategy

CITY OF MILLERSBURG TRANSPORTATION SYSTEM PLAN

Technical Memorandum #1
(Task 2.1 Public and Stakeholder Involvement Strategy)

Prepared for

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November 2015

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Introduction

This Public and Stakeholder Involvement Strategy (PSIS) memorandum will guide stakeholder and public involvement during the Millersburg Transportation System Plan (TSP) update. The PSIS describes fundamental objectives and activities that the City of Millersburg, the consultant team, and other agency staff will implement in order to ensure that interested parties have adequate opportunities to provide meaningful input to the TSP. The following describes the fundamental purpose and objectives for involvement, specific outreach mechanisms, and how the PSIS will be integrated throughout the TSP process.

Public Involvement Purpose and Objectives

The purpose of the involvement process is to gain input throughout the duration of the TSP process at key milestones. Further, the PSIS for the Millersburg TSP complies with the Statewide Planning Goal 1 (Citizen Involvement), which calls for "the opportunity for citizens to be involved in all phases of the planning process." The following public involvement objectives have been established to support a meaningful and effective public involvement process:

1. Potentially affected community residents have an appropriate opportunity to participate in transportation planning decisions about a proposed activity that will affect their environment and health.
2. The public's contribution can influence the City's decision.
3. The concerns of all participants involved will be considered in the decision-making process.
4. The decision makers seek out and facilitate the involvement of those potentially affected.
5. The public involvement process complies with Title VI of the Civil Rights Act.
6. The public involvement process is consistent with applicable state and federal laws and requirements, and is sensitive to local policies, goals, and objectives.

Consideration will be given to outreach needs and reporting requirements consistent with the provisions of federal and ODOT Region 2 Title VI Program and Environmental Justice Executive Order (EJEO) to ensure full and fair participation by all potentially affected community members, including historically underrepresented populations, in the decision-making process.

Identifying Stakeholders: Who's Involved

The public and stakeholder involvement efforts seek participation of all potentially affected and/or interested individuals, communities, and organizations. To date, the Millersburg TSP team has identified a number of stakeholders and a number of types and groups of stakeholders groups to engage in the process. The public involvement process will seek to engage the following potentially affected stakeholder's categories:

- General public
- Pedestrians
- Bicyclists
- Car drivers
- Emergency service providers
- Freight shippers
- Property owners
- Local business/economic development interests
- Agencies (local and state)
- Neighborhood groups
- Environmental/sustainability/land use representatives
- Community organizations (community-based organizations/advocates for underrepresented communities)
- Underserved populations, including low-income and minority communities and people with disabilities
- Elected officials

Involvement Structure and Process

The City of Millersburg will involve the public and stakeholders primarily through a series of committee meetings, community meetings, and work sessions with elected officials, in addition to the distribution of project information through a variety of media, including a project website. The general outline of the PSIS will follow the committee/meeting structure identified below:

- TSP **Project Management Team (PMT)** composed of City, agency, and consultant staff.
- **Joint Planning Commission/City Council (PC/CC) Workshops** as the forum for citizen representation (rather than a separate citizen committee): Four (4) workshops are planned.
- **Technical Advisory Committee (TAC),** including agency staff: Four (4) workshops are planned.
- **Community Meetings/Public Open House Forums** at major milestones: Two (2) Open House Forums ~~open house forums~~ are planned.

Figure 1. Public and Stakeholder Involvement Structure

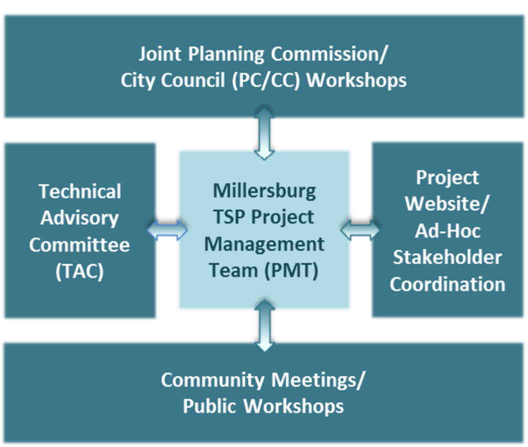
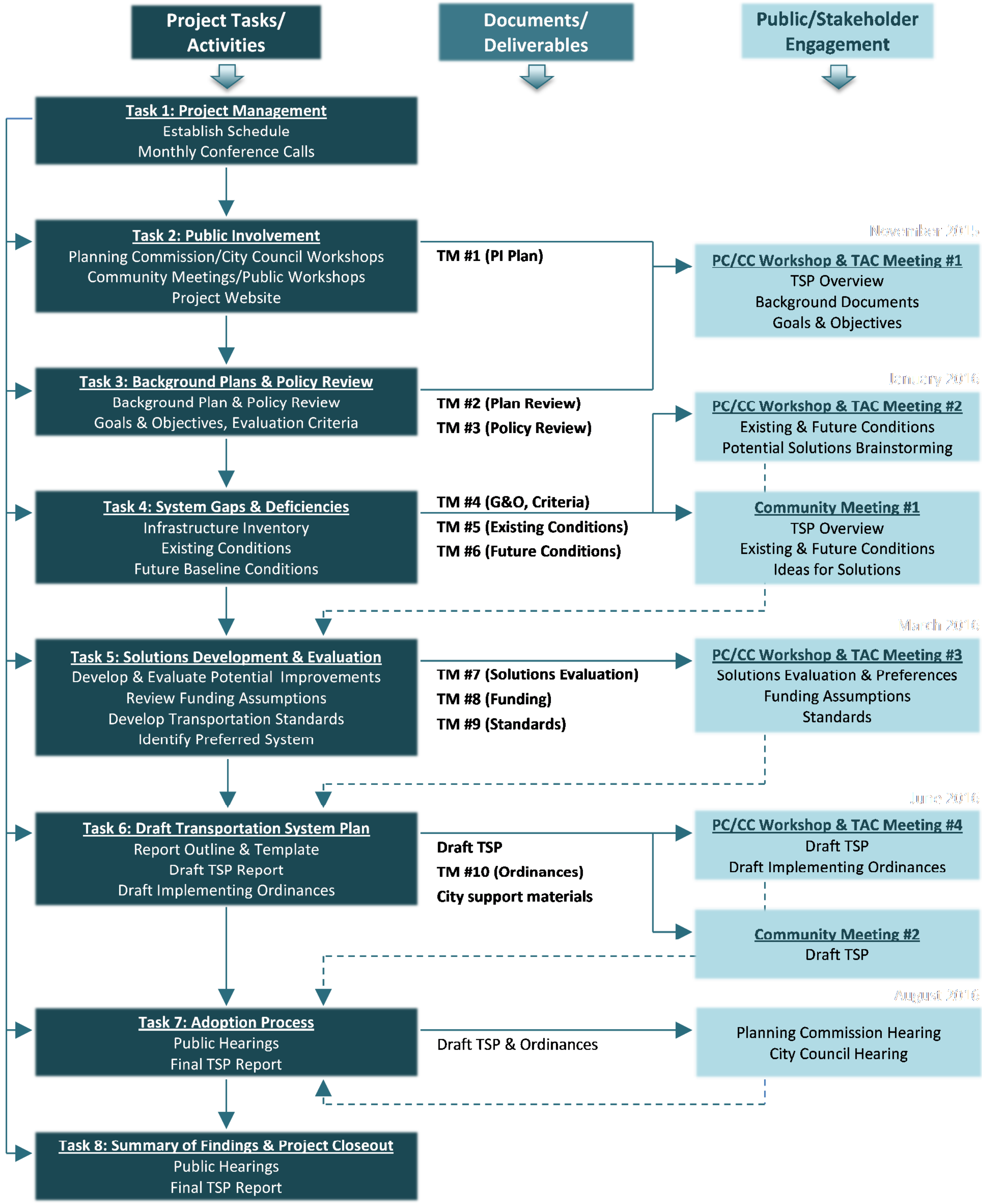


Figure 2. Public and Stakeholder Involvement Process



The advisory groups and committees previously identified will serve as the primary community engagement mechanisms for collaboration and consensus building. In addition to these committees and meetings, engagement with the broader community will be an important element of the public involvement program. Ongoing involvement with the public will occur throughout the life of the TSP, and the TSP team will seek specific input and conduct targeted outreach during three key outreach points using of the public involvement tools defined below. The following describes the purpose, member/attendee composition, and responsibilities associated with each of the key committees/meetings.

Joint Planning Commission/City Council (PC/CC) Workshops

The primary function of the PC/CC Workshops is to brief the Planning Commission and City Council and incorporate their ideas and direction in the progress of the TSP. Millersburg's Planning Commission and City Council members are the official appointed and elected representatives of Millersburg, particularly on planning issues. The PC/CC workshops also provide a secondary function – an opportunity for all Millersburg residents to attend, gain insights on the TSP process, content and progress, and provide the PC/CC and consultant team feedback. All workshop participants provide additional benefit by representing private individual and interest group viewpoints in discussions regarding the TSP, to review and comment on the technical work of the consultant team, and to disseminate information regarding the TSP to the community.

Composition

The Oregon Administrative Rules and Statewide Planning Goal 1 state that the citizen involvement effort should represent the community's interests and geography, generally including: representatives of the general public, as well as local business and special interest representatives. The City will leverage joint PC/CC Workshops as an existing forum with a broad range of citizen representation.

Responsibilities

The PC/CC Workshops include review and input on technical memoranda prepared for the project and presentation materials prepared for public outreach. PC/CC Workshop attendees serve as liaisons to the community at large and report to their organizations regarding the TSP. This group will advise the TAC on community concerns and issues.

Technical Advisory Committee (TAC)

The function of the TAC is to provide technical and policy guidance to the TSP and process, ODOT, City, and consultant project managers.

Composition

The TAC would be composed of representatives from the City, affected government agencies, as well as the PMT, ODOT and consultant TSP team. An example list of members includes:

- Millersburg Manager
- Millersburg Engineer
- City of Albany – Transportation
- City of Albany – Planning
- Linn County Planning
- Emergency Services (Fire and Police)
- Albany Area Metropolitan Planning Organization
- Department of Land Conservation and Development (DLCD)
- ODOT
    - Region 2 Planning
    - ODOT Transportation Planning Analysis Unit (TPAU)
- Consultant staff
    - Project Manager
    - Traffic Engineer

Responsibilities

The TAC reviews technical memoranda prepared for the project and presentation materials prepared for public outreach. The TAC members will evaluate TSP memoranda and provide direction to the PMT, ODOT, City, and consultant project managers for consistency with state and local plans and regulations. TAC members are responsible for building inter-agency consensus by ensuring that issues are identified and addressed early and by communicating with their respective agency staff. The TAC also will review and consider outcomes of the advice provided by PC/CC Workshops and the public Open House forums. The TAC will be provided with summaries and comments from the PC/CC Workshops and public meetings.

At the first TAC meeting, ODOT and consultant staff members will explain the purpose of the Millersburg TSP project, define project tasks, explain TAC responsibilities and meeting protocols, and refine the public input process, and discuss technical memorandum #1. In subsequent meetings, TAC members will discuss information provided in subsequent technical memoranda, as outlined in Figure 2 on the flow chart on page 3.

Community Meetings/Public Open House Forums

Community meetings will be conducted in an open house format: a brief introductory presentation followed by an opportunity for attendees to examine display materials, ask questions, and provide comments. Attendees will be encouraged to leave their names and contact information on sign-up sheets to facilitate communication regarding the project and to provide a record of public participation in keeping with the state regulations. Comment cards will be made available. The City will arrange public meeting locations and times, ensure compliance with the Americans with Disabilities Act, and provide notice to the media and the public in accordance with legal requirements. The City will request that meeting notices and materials be made available in paper and electronic form at public locations (e.g. library or post office). The public meetings will be organized as follows:

Community Meeting #1

The first meeting will provide an opportunity for the City and ODOT to introduce the TSP project, and for the public to provide input on the existing/future conditions analysis and current deficiencies. During this meeting, the public will also have an opportunity to provide input on potential transportation planning solutions to consider and the selection process in the Solutions Development task.

Community Meeting #2

The second community meeting will provide members of the public with an opportunity to review the selection process of the draft TSP multimodal solutions and the draft TSP.

Outreach

The public will be invited to provide input throughout the TSP process, and will play an important role in reviewing and providing comments at key milestones. Engagement will occur through online tools and traditional in-person community Open House forums. A Millersburg TSP website will be developed and maintained to provide important information, transparency, and access for a wide range of interested parties while making good use of limited resources.

Engaging Historically Underrepresented Populations

The consultant team will make special efforts to reach out to communities of color and to low-income, disabled, and other underrepresented groups. Implementation of this PSIS meets the requirements and guidance found in the ODOT Title VI (1964 Civil Rights Act) Plan. Specifically, the Title VI Plan identifies measures to reach and solicit comments from disadvantaged populations within a community. The list of Title VI and Environmental Justice populations includes: race/color/national origin, age, gender, disabilities (mental and physical), limited English proficiency, minority races, and low-income.

The consultant team will perform demographic analysis using U.S. Census data (at the smallest scale possible, e.g., Census Tract or Block Group) and input from the City and other service providers to identify Title VI and Environmental Justice (EJ) populations in the project area. Figure 3 illustrates the 2010 US Census tract and block boundaries for Millersburg, and Table 1 lists the detailed population profile of Millersburg reference areas.

Outreach and reporting protocols will be developed and followed in order to meet Title VI and EJ Program requirements and directives, to ensure full and fair participation by all potentially affected community members in the decision-making process. Title VI and EJ analysis and documentation will be consistent with the Region 2 ODOT Guidelines for Addressing Title VI/Environmental Justice (EJ) in Transportation Planning.

Figure 3. City of Millersburg Census Block Group Boundaries

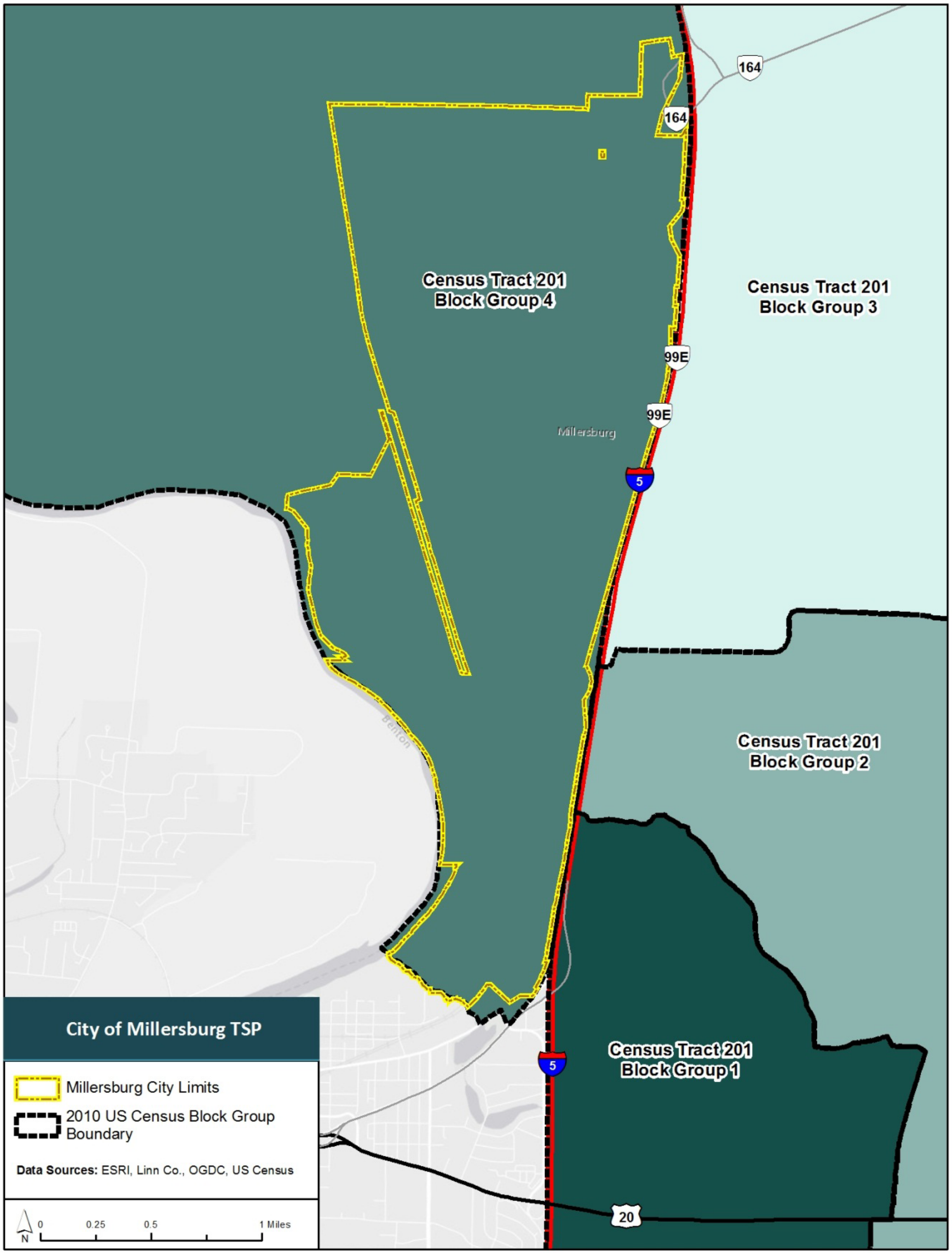


Table 1. Census Data for Millersburg Block Group and Reference Areas

	Millersburg	Reference Areas				
	Tract 201, Block Group (BG) 4	BG 3	BG 2	BG 1	Linn County	Oregon
Total Population[1]	1,738	928	1,617	4,841	116,672	3,831,074
Number of Households[1]	664	363	595	1,891	45,204	1,518,938
Male	878	476	823	2,424	57,578	1,896,002
Female	860	452	794	2,417	59,094	1,935,072
Minority (Nonwhite)[1]	172	59	128	500	15,093	825,226
Minority (nonwhite) (%)[1]	10%	6%	8%	10%	13%	22%
Hispanic or Latino (Population)[1]	161	52	103	381	9127	450062
Hispanic or Latino (%)[1]	9%	6%	6%	8%	8%	12%
White Alone[1]	90%	94%	97%	89.7%	90.6%	83.6%
Black or African American Alone[1]	0%	0%	0%	0.7%	0.5%	1.8%
American Indian or Alaskan Alone[1]	2%	2%	1%	1.5%	1.3%	1.4%
Asian Alone[1]	1%	1%	1%	1.3%	1%	3.7%
Native Hawaiian/Other Pacific Islander[1]	0%	0%	0%	0.1%	0.1%	0.3%
Some Other Race[1]	5%	2%	2%	3.4%	3.3%	5.3%
Two or More Races[1]	3%	3%	3%	3.4%	3.3%	3.8%
Median HH income[2]	$ 66,750	$ 49,650	$ 49,650	$ 57,500	$ 46,939	$ 50,229
Poverty Status (Population)	69	25	41	318	7044	223771
Poverty Status (%)	4%	3%	3%	7%	6%	6%
Median Age[1]	42.1	49.4	40.4	33.6	39.2	38.4
Senior pop (Age >65)	126	86	110	225	17991	533533
Persons with disability[2]	209	91	228	462	14326	406246
Non-Proficient Speaking English[2]	10	0	0	19	2559	225703

[1] 2010 US Census,
[2] 2009-13 ACS

Public Involvement Tools

These tools will be used in the PSIS outreach program:

- **Public and Stakeholder Involvement Strategy** *(this document)*: This Public and Stakeholder Involvement Strategy (PSIS) memorandum will guide stakeholder and public involvement during the Millersburg TSP. The PSIS describes fundamental objectives and activities that the PMT will implement in order to ensure that interested parties have adequate opportunities to provide meaningful input to the TSP.
- **Comment Tracking Database** *(Ongoing)*: The PMT team will log all public comments, questions, and concerns, and respond to or coordinate a response when appropriate. The log will include comments from all sources, including emails, phone calls, web form submissions, and comments made during presentations and briefings with stakeholders.
- **Website** *(Ongoing)*: The project website will be the primary portal for information about the project. It includes: pages that describe TSP activities and events, the process timeline, and documents and materials. The site will host online open houses and surveys. At any time, members of the public may submit comments through the project website's online commenting tool. City staff will receive comments, coordinate responses as needed, and track comments.
- **Interested Parties and Email Communications** *(Ongoing)*: The City will develop and maintain a list of interested parties who will receive meeting notices. The list will serve as the basis of targeted invitations to attend scheduled Community Meetings. The list will also provide information on affiliations and identify individuals related to Title VI and EJ requirements.

Study Team and Roles

The following are the key team members and their roles in the public involvement program:

City of Millersburg

City staff will oversee the public involvement program and take the presentation lead at all meetings, unless otherwise delegated to the Consultant. City staff is expected to provide guidance on the informational materials and graphics for the meetings and finalizing, printing, and distributing the draft materials provided by the consultant. City staff is primarily responsible for managing the stakeholder contact database and comment tracking; creating and distributing news releases and stakeholder emails; and holding meetings and briefings with committees and groups. City staff is responsible for providing summaries at City Council and Planning Commission workshops and all meeting logistics.

Consultant Team

David Evans and Associates, Inc. (DEA) is subcontracted to the primary consultant (DKS Associates), and serves as the consultant project manager for the TSP. DEA provides overall project management, leads the overall work plan, and leads all technical tasks. DEA will review public involvement deliverables and make presentations to groups and committees involved in the TSP (at requested by the City). They will also track and manage public involvement activities, as public record for the project, and implement key many aspects of the public involvement program, particularly: (1) development and management of the project website, and (2) facilitation of the TAC, PC/CC workshops and Public Open House forums committee and community meetings. DEA is responsible for preparing draft meeting announcements, agendas, press releases, and informational materials and graphics.

Distribution and Review of Work Products

The City will email project work products directly to TAC committee members and post them to the project website for access by the general public. TAC and PC/CC Workshop members will be able to comment directly through regular TAC committee meetings and PC/CC workshops. The general public will be able to comment at any time, with a focus on the Open House forums, community meetings, and through the project website. The project website will facilitate public input by including a convenient comment feature. The Millersburg TSP Update team will review comments that are input through the website and include them as part of the project record of public comments.

B. Technical Memorandum #2: Review of Plans and Policies

City of Millersburg Transportation System Plan

Technical Memorandum #2
(Task 3.2 Review of Plans and Policies)

Prepared for

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December 2015

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Introduction

This Technical Memorandum documents state, regional, and local transportation and land use regulations, plans, and policies as well as planned transportation improvement projects that are applicable to transportation planning in the city of Millersburg, Oregon. The purpose of this review is to build upon prior planning efforts, provide the planning context for the TSP, and ensure that the development of the Millersburg Transportation System Plan (TSP) is compatible and compliant with applicable regulations, plans, and policies. Relevant regulations, plans, and policies reviewed in this appendix are listed as follows:

- State Plans and Policies
  - Statewide Transportation Planning Rule (TPR) (OAR 660-012)
  - Oregon Transportation Plan (amended 2006)
    - Oregon Transportation Options Plan (2015)
    - Oregon Highway Plan (amended 2011)
    - Oregon Bicycle and Pedestrian Plan (1995)
    - Oregon State Rail Plan (2014)
    - Oregon Public Transportation Plan (1997)
  - ORS 366.215 – Reduction of Vehicle Carrying Capacity
  - 2015-2018 Statewide Transportation Improvement Plan
  - 2008 Oregon Transportation System Planning (TSP) Guidelines
  - Access Management Rules (OAR 734.051)
  - I-5 South Jefferson to US 20 Section 4(f) and Section 6(f)(3) Background Paper (2014)
  - Millersburg I-5 Corridor Refinement Plan and Existing Environmental/Cultural Features (2006)
  - Regional Plans and Policies Albany Area Metropolitan Planning Organization (AAMPO) Interim Transportation Improvement Program (TIP)
  - Salem-Keizer Transit Long-Range Regional Transit Plan (2013)
- Local Plans and Policies
  - City of Albany Transportation System Plan (2010)
  - Albany Public Transit Plan (2011)
  - Linn County Transportation Plan Code (County Code, Title 9, Chapter 907)
  - Linn County Coordinated Public Transit-Human Services Transportation Plan (2007)
  - City of Millersburg Planning Comprehensive Plan (1984)
  - City of Millersburg Funding

State Plans, Policies, Regulations, Reports, and Funding Sources

Statewide Planning Goal 12 (Transportation) and OAR 660, Division 12 (Transportation Planning Rule)

The purpose of the Statewide Transportation Planning Rule (TPR) is to "implement Statewide Planning Goal 12 (Transportation) to provide and encourage a safe, convenient and economic transportation system." Major purposes of the TPR are to promote more careful coordination of land use and transportation planning, and to assure that planned land uses are supported by and consistent with planned transportation facilities and improvements.

The TPR divides transportation planning into two phases: transportation system planning and transportation project development (660-012-0010(1)). The local government must identify reasonable build design alternatives, assess their impacts, and select the alternative with the least impact.

The primary focus of this rule is keeping land use and transportation in balance. When a plan or zoning amendment would result in levels of traffic that exceed the highway performance standards for a roadway, it is deemed to have a significant effect on the roadway.

Project Relevance

The Millersburg TSP is being developed in accordance with the TPR's specific requirements.

Oregon Transportation Plan (OTP, Amended September 20, 2006)

The Oregon Transportation Plan (OTP) is the state's multimodal transportation plan that assesses the needs of airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation and railroads through 2030. The OTP provides a framework for prioritizing transportation improvements to address the challenges Oregon faces based on various revenue conditions. This plan offers guidance for state, regional, local, and private transportation facilities.

This OTP supersedes the 1992 OTP, which established a vision of a balanced, multimodal transportation system and called for an expansion of ODOT's role in funding non-highway investments. The current OTP furthers these policy objectives with emphasis on maintaining the assets in place, optimizing the existing system performance, creating sustainable funding, and investing in strategic capacity enhancements.

Project Relevance

Transportation improvements must be consistent with the applicable OTP goals and policies and, therefore, findings of compatibility with the OTP will be provided in Technical Memorandum #3 and be used in the TSP adoption process.

Oregon Highway Plan (1999, with Amendments)

The Oregon Highway Plan (OHP), an element of the OTP, identifies OR 164 Jefferson Highway as a designated District Highway. OR 164 intersects Interstate 5 (I-5) at Exit 238 at the north end of

Millersburg and travels east to Jefferson. The OHP defines specific performance standards for district highways, including priorities to provide for safe and efficient, moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movement.

The performance and mobility standards in the OHP vary by location and adjacent land use type, establishing a higher level of service expectation in the more rural areas and a lower level of service in urbanized areas.

The OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. The TSP will build upon the goals and policies of the OHP and OTP to establish a plan for the city's 2040 planning horizon. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and the local road, bicycle, pedestrian, transit, rail, and air systems. The policies applicable to planning to the TSP are described below.

Goal 1 – System Definition

Policy 1A – State Highway Classification System: Establishes that the management objective of Interstate Highways is to provide for safe and efficient, high-speed, continuous-flow operation in urban and rural areas; and for District Highways, to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas and moderate to low-speed operation in urban and urbanizing areas.

Policy 1B – Land Use and Transportation: Recognizes the need for coordination between state and local jurisdictions.

Policy 1C – State Highway Freight System: States the need to balance the movement of goods and services with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck freight routes.

Police 1E – Lifeline Routes: Recognizes the need for a secure lifeline network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.

Policy 1F – Highway Mobility Standards: Sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system based on highway classification and location by providing the appropriate standards that would allow the corridor area and associated interchanges to function in a manner consistent with OHP mobility standards.

Policy 1G – Major Improvements: Requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Goal 2 – System Management

Policy 2A – Partnerships: Establishes cooperative partnerships to make more efficient and effective use of limited resources to develop, operate, and maintain the highway and road system.

Policy 2B – Off-System Improvements: Helps local jurisdictions identify and evaluate off-system improvements that would be cost-effective in improving performance of the state highway.

Policy 2C– Interjurisdictional Transfers: Encourages the State and local jurisdictions to consider interjurisdictional transfers to simplify management, reflect appropriate functional classifications of a roadway or corridor, and result in efficiencies in operations and maintenance.

Policy 2D– Public Involvement: Allows for public input on state highway system projects.

Policy 2E – Intelligent Transportation Systems: Considers services to improve system efficiency and safety through effective incident management, en-route driver information, and traffic control.

Policy 2F – Traffic Safety: Improves the safety of the highway system.

Policy 2G – Rail and Highway Compatibility: States the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroad and highway users.

Goal 3 – Access Management

Policy 3A – Classification and Spacing Standards: Sets spacing standards dependent of the highway classification and function.

Policy 3C – Interchange Access Management Areas: Manage grade-separated interchanges to provide safe and efficient operations between connecting roadways.

Goal 4 – Travel Alternatives

Policy 4A – Efficiency of Freight Movement: Seeks to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban and rural areas.

Policy 4D – Transportation Demand Management: Supports the efficient use of the state transportation system through investment in efforts that reduce peak period congestion.

Project Relevance

The TSP intends to address the function of OR 164 in accordance with the mobility standards set for the OHP's district highway designation. The applicable mobility standards and current and forecast mobility of local roads will be presented in technical memorandums throughout the TSP process. The TSP will address Goals 1-4 of the OHP through specific sections to address system definitions, management, access control and management as well as travel alternatives throughout the city of Millersburg.

Oregon Bicycle and Pedestrian Plan (1995)

The Oregon Department of Transportation (ODOT) is currently in the process of developing a new Oregon Bicycle and Pedestrian Plan, intended to update the plans and policies outlined in the 1995 Oregon Bicycle and Pedestrian Plan. The current plan offers general principles and policies for providing bikeways and walkways along state highways and provides standards for planning, designing, and maintaining bikeways and walkways throughout the state. The plan is intended to provide a framework for cooperation between ODOT and local jurisdictions, and offers guidance to cities and counties for developing local bicycle and pedestrian plans. Fundamentally, the plan is designed to fulfill the requirements of federal transportation funding legislation, whereby each state must adopt a statewide bicycle and pedestrian plan, and Oregon Administrative Rule 660-12 (Transportation Planning Rule 12).

Project Relevance

Improvements to any of the state facilities (I-5, OR 99E, OR 164), including interchanges, must consider the standards presented in the current Plan as well as the updated Plan as it becomes available. The TSP will take guidance on bikeway and walkway development into account when evaluating potential bike and pedestrian improvements throughout the city.

Oregon State Rail Plan (2014)

The Oregon State Rail Plan, adopted September 2014, is a comprehensive assessment of the state's rail planning, freight rail, and passenger rail systems. The Oregon State Rail Plan establishes a vision for the future of rail in Oregon supported by goals, policies, and strategies. The most relevant goals from this Plan are described below.

> ***Goal 1 – Mobility and Accessibility:*** To enhance the state's quality of life and economic vitality through a balanced, efficient, cost-effective and integrated multi-modal transportation system.
>
> ***Goal 2 – Management of the System:*** To improve the efficiency of the transportation system through optimization of existing infrastructure and improved operations and management.
>
> ***Goal 3 – Economic Vitality:*** To promote the expansion and diversification of the economy through an efficient and effective transportation system.
>
> ***Goal 4 – Sustainability:*** To provide a transportation system that meets present needs without compromising the ability of future generations to meet their needs. This system should recognize local and regional land use and economic development plans, offer choices for transportation mode, distributes benefits and burdens fairly, and is operated and maintained to be sensitive to its environment.
>
> ***Goal 5 – Safety and Security:*** To plan, build, operate and maintain the transportation system so that it is safe and secure.

Project Relevance

The city of Millersburg is served by two primary railroads lines that connect Millersburg to the State's larger rail network. Portland & Western Railroad runs north-south through Millersburg at the west end of the city. The Union Pacific Railroad (UPRR) line on the east end of the city parallels I-5 to OR 164. Currently, the city of Millersburg is served by passenger service on Amtrak along the UPRR line between Eugene and Portland, with the closest station in Albany. (The Public Oregon Intercity Transit (POINT) bus service augments Amtrak between Eugene and Portland.) The TSP will address the current rail facilities as part of the existing system inventory. Descriptions of planned or potential future capacity or facility improvements will be documented in the TSP where appropriate.

Oregon Public Transportation Plan (1997)

The Oregon Public Transportation Plan (OPTP) forms the transit modal plan of the Oregon Transportation Plan (OTP). The vision guiding the public transportation plan calls for the following:

- A comprehensive, interconnected and dependable public transportation system, with stable funding, that provides access and mobility in and between communities of Oregon in a convenient, reliable and safe manner that encourages people to ride.
- A public transportation system that provides appropriate service in each area of the state, including service in urban areas that is an attractive alternative to the single-occupant vehicle, and high-quality, dependable service in suburban, rural, and frontier (remote) areas.
- A system that enables those who do not drive to meet their daily needs.
- A public transportation system that plays a critical role in improving the livability and economic prosperity for Oregonians. The plan contains goals, policies, and strategies relating to the whole of the state's public transportation system. The plan is intended to provide guidance for ODOT and public transportation agencies regarding the development of transportation systems. The OPTP also identifies minimum levels of service, by size of jurisdiction, for fulfilling its goals and policies.

Project Relevance

In order to address the OPTP, as part of the TSP the city needs to evaluate the potential for expanding transit within Millersburg or potential agreements with existing transit service in Albany for service expansion. Further discussion of transit service will be discussed in the transit element of the TSP.

ORS 366.215 (Reduction of Vehicle Carrying Capacity)

Oregon Revised Statute (ORS) 366.215 states that "the Oregon Transportation Commission (OTC) may not permanently reduce the vehicle-carrying capacity of an identified freight route." Exceptions to this may be granted by the OTC if it is determined that a reduction in vehicle carrying capacity is in the best interest of the state and that movement of freight is not unreasonably impeded. ORS 366.215 outlines specific procedures for review in the event a reduction in vehicle carrying capacity along identified freight routes is proposed.

Project Relevance

If, during the development of the TSP, a reduction in vehicle carrying capacity is identified as a potential need on I-5 (OR 99E) through the study area (the one identified freight route in the OHP) the review process outlined in ORS 366.215 will be followed.

Oregon Transportation Options Plan (2015)

The Transportation Options Plan (OTO Plan) aims to implement and refine the Oregon Transportation Plan's (OTP) goals, policies, and strategies. The purpose of the OTO Plan, specifically, is to "establish a vision and policy guidance that integrates transportation options in local, regional, and state transportation planning, programming, and investment." The OTO Plan provides an outline for polices and strategies for state and local agencies to expand transportation systems, increase funding, and improve planning. The Plan promotes the use of existing transportation infrastructure to provide Oregon with an efficient and affordable transportation system. The OTO Plan:

- *Identifies opportunities to expand transportation choices.*
- *Looks to increase funding opportunities for transportation options programs and investments.*
- *Provides information to better integrate transportation options into local, regional, and state transportation planning.*

Project Relevance

Within the next 25 years, the population of Oregon is expected to increase by nearly 30 percent. As a local planning effort, the development of the TSP is an opportunity to embrace the OTO Plan's goals and key initiatives by supporting transportation options programs, where feasible, in order to meet the growing demands in the community. The TSP will aim to address the growing populations and economy in the area while improving the efficiency and use of existing transportation systems in a cost-effective manner.

2015-2018 Statewide Transportation Improvement Program (STIP)

The four-year STIP identifies the funding and scheduling for federal, state, city, and county transportation projects. STIP projects are generally regionally significant and many receive state and/or federal funding.

Project Relevance

The city of Millersburg has no projects identified in the 2015-2018 STIP; however, several projects within the area are included, such as the I-5 South Jefferson-US 20 Design Baseline Evaluation submitted by ODOT. Projects identified in the Millersburg TSP may be eligible for state or federal funding and inclusion in a future STIP.

2008 Oregon Transportation System Planning (TSP) Guidelines

The 2008 Oregon TSP Guidelines are designed to assist local jurisdictions both preparing and updating transportation system plans by providing a framework to ensure plans meet local needs while complying with state rules, requirements, and regulations. This framework provides a sequence of planning steps to assist local jurisdictions to strengthen their transportation plan, evaluate their current transportation system, and prepare for future needs. Step-by-step guidance for first time plan preparation is also provided.

Project Relevance

The development of the TSP will follow the 2008 Oregon TSP Guidelines to the maximum extent practicable.

Access Management Rules (OAR 734.051)

The Access Management Rules (OAR 734.051) incorporate mobility standards from the 1999 Oregon Highway Plan for both private and public approaches. The purpose of Division 51 is to balance development needs with transportation safety and access management objectives of state highways. Division 51 provides standards to govern highway approaches, access control, spacing standards, medians, and restriction of turning movements, in compliance with statewide planning goals and in a manner compatible with acknowledged comprehensive plans and consistent with Oregon Revised Statutes (ORS), Oregon Administrative Rules (OAR), and the Oregon Highway Plan (OHP). The Oregon Highway Plan serves as the policy basis for implementing Division 51, and guides the administration of access management rules, including mitigation and public involvement.

Project Relevance

The TSP will include an access management chapter that identifies major approaches and existing approach spacing, and develops standard for local approaches, consistent with Division 51 to the maximum extent practicable.

Oregon Strategy for Greenhouse Gas Reductions (2004)

The Oregon Strategy for Greenhouse Gas Reductions is a report produced by the Governor's Advisory Group on Global Warning to provide recommendations to policy makers, state agencies, and citizens for how global warming can be addressed in Oregon. Within the report the Advisory Group proposes the following goals to guide development of a strategy for Oregon:

1. By 2010, arrest the growth of Oregon's greenhouse gas emissions (including, but not limited to CO2) and begin to reduce them, making measurable progress toward meeting the existing benchmark for CO2 of not exceeding 1990 levels.
2. By 2020, achieve a 10 percent reduction below 1990 greenhouse gas levels.
3. By 2050, achieve a "climate stabilization" emissions level at least 75 percent below 1990 levels.

According to the report, one-third of Oregon's total greenhouse gas (GHG) emissions are from vehicle exhaust. The solutions identified within the report specific to transportation are separated into two categories: 1) reduce GHG emissions from consumption of fossil fuels by displacing conventional combustion engines with hybrid, electric and other technological/fuel options, and 2) to guide land use choices, especially in Oregon's urban areas, toward more efficient choices including higher densities, transit options, mixed-use neighborhoods, and common wall dwelling designs. The recommendations specific to transportation in the state include:

Category 1:

TRAN-1: Convene an interim task force to recommend a proposal for the Environmental Quality Commission or the Governor and the Legislature to adopt emission standards for vehicles.

TRAN-2: Integrate land use and transportation decisions with greenhouse gas consequences.

TRAN-3: Promote biofuel use and production.

Category 2:

TRAN-4: Review and enhance state tax credits and local incentives for citizens purchasing high efficiency vehicles.

TRAN-5: Incorporate greenhouse gas emission impacts into transportation planning decisions.

TRAN-6: Expand "Transportation Choices Programs" and "Travel Smart Pilots."

TRAN-7: Adopt state standards for high efficiency/low rolling resistance tires.

TRAN-8: Reduce GHG emissions from government fleet purchase and vehicle use.

TRAN-9: State and local governments should switch to "clean diesel" fuel, vehicle purchases and retrofits.

TRAN-10: Adopt state and local incentives for high efficiency vehicles.

TRAN-11: Set and meet goals for reduced truck idling at truck and safety stops.

TRAN-12: Set up traffic flow engineering "Best Practices."

TRAN-13: Set and meet goals for freight (truck/rail) transportation efficiency; achieve this through equipment, coordination and land use.

TRAN-14: Establish consumer awareness education link to transportation choices.

TRAN-15: Improve mass transit and inter-city transit links.

Project Relevance

The development of the TSP will incorporate the recommendations applicable to transportation and land use planning identified in the report in order to support the goals of the Advisory Committee. Specifically, the TSP will evaluate and identify opportunities for improved transit and multi-modal facilities as well as improved efficiency for freight and vehicular movement within the city.

I-5: South Jefferson Interchange to US 20 Interchange Design Baseline Evaluation (2015)

The I-5: South Jefferson to US 20 Design Baseline Evaluation considered a range of design options for improvements to a five-mile section of I-5 and its interchanges between mileposts 238 and 233 which serves Millersburg, Albany, and rural Linn County. The Design Baseline Evaluation identified a preferred Build Alternative by selecting design options that avoided or minimized potential impacts while meeting the Purpose and Need for the project to correct roadway geometric deficiencies, reduce congestion, and improve safety. While the Design Baseline Evaluation considered potential impacts from the Build Alternative as a whole, the Evaluation also determined that the Build Alternative is composed of a series of smaller stand-alone projects, each of which has independent utility and logical termini. . The proposed actions identified in the Design Baseline Evaluation include:

- Adding an additional lane in each direction on I-5 through the project area
- Constructing a new Millersburg interchange at milepoint 236.6, creating a new connection between Century Drive and Old Salem Road
- Removing the existing Viewcrest and Murder Creek interchanges after completion of the new Millersburg interchange
- Adding a southbound on-ramp at the Knox Butte interchange
- Adding Auxiliary Lanes or Collector/Distributor Lanes to I-5 between the Knox Butte and US 20 interchanges
- Other improvements to interchanges and the local street system

Currently the 2015-2018 STIP has a project (key no. 18849) for design work and right-of-way acquisition from the I-5 South Jefferson Interchange to the US 20 Interchange. The focus of this project is the Knox Butte interchange as well as additional lanes on I-5 and will be starting soon, though construction funding has not been secured. Other elements of the Build Alternative will be prioritized for construction as funding becomes available.

Project Relevance

The I-5: South Jefferson to US Highway 20 project is currently in the planning phase and does not have construction funds secured. Since funding for a new freeway interchange in Millersburg may not be available during the TSP planning horizon, the improvements recommended as part of the Build Alternative will not be considered as part of the future baseline traffic forecast analysis for the TSP. The TSP will not consider how the local system would work with the proposed interchange improvements.

Millersburg I-5 Corridor Refinement Plan and Existing Environmental/Cultural Features (2006)

The Millersburg I-5 Corridor Refinement Plan and Existing Environmental/Cultural Features provides both short and long term recommended improvements and impacts associated with improvements for the nearly three mile strip of I-5 to the east of Millersburg. Millersburg is served by four interchanges within this section of I-5. The four interchanges include Knox Butte, Murder Creek, Viewcrest, and South Jefferson. The Millersburg I-5 Corridor Refinement Plan identified current and future problems along I-5 and has been used to inform the development of the Build Alternative in the I-5: South Jefferson Interchange to US 20 Interchange Design Baseline Evaluation study. The Millersburg I-5 Corridor Refinement Plan was not formally adopted by the Oregon Transportation Commission. Relevant recommendations in the Refinement Plan include:

Short Term

- Widen I-5 to six lanes as soon as possible

- Reconstruct the southbound South Jefferson Interchange ramps
- Signalize the South Jefferson Interchange ramp terminal intersections
- Realign Jefferson Highway through the South Jefferson Interchange
- Manage access near the South Jefferson Interchange
- Lengthen the southbound Murder Creek Interchange on-ramp
- Signalize the Murder Creek Interchange ramp terminal intersection on Old Salem Road
- Widen Murder Creek Drive, raise Murder Creek Drive above the flood plain and signalize the intersections on Murder Creek Drive

Long Term

- Consider widening I-5 to eight lanes
- Widen Jefferson Highway to five lanes through the South Jefferson Interchange if the Tank Farm Interchange is not built
- Remove the Viewcrest Interchange when the Tank Farm Interchange is built
- Remove the Murder Creek Interchange ramps when the Tank Farm Interchange is built
- Construct the Tank Farm Interchange

The "Tank Farm" Interchange referred to in the Refinement Plan was shifted slightly south and is referred to as the Millersburg Interchange in the 2015 I-5: South Jefferson Interchange to US 20 Interchange Design Baseline Evaluation study.

Project Relevance

Millersburg has no jurisdiction over the interstate system, but the TSP will strive to ensure that the local street system is supportive of the potential changes presented in the Refinement Plan that were included or not eliminated by the 2015 I-5: South Jefferson Interchange to US 20 Interchange Design Baseline Evaluation study.

Regional Plans, Policies, Regulations, Reports, and Funding Sources

Albany Area Metropolitan Planning Organization (AAMPO) Interim Transportation Improvement Program (TIP)

The AAMPO Interim TIP is a formal mechanism required by federal regulations to identify, prioritize, schedule, and allocate funding for short-range projects within the MPO that have been identified in the Regional Transportation Plan (RTP). The AAMPO is not required to complete a full federally-compliant RTP and TIP until March of 2016. Until then, the Interim TIP will provide guidance for the development of the TSP. While both the AAMPO and Millersburg TSP projects are currently underway there is on-going coordination between the project teams. The Millersburg TSP project will provide a draft list of regionally significant projects to the AAMPO process in February. After which the two plans will be on different timelines. The Millersburg TSP is anticipated to finish prior to the AAMPO project and may require updates of the TSP to create consistency between the documents.

Project Relevance
The TSP will consider projects within the city of Millersburg with secured funding as part of the future conditions analysis. Projects currently programmed within the City include:

- *(18707) I-5: South Jefferson – North Albany (NB)*: Grind/inlay of northbound lanes
- *(18849) I-5: South Jefferson Interchange – Santiam Highway Interchange*: Complete preliminary engineering and begin right-of-way purchase
- *(18698) Old Salem Road: Truax Creek Bridge Replacement*
- *(17814) I-5 Murder Creek Bridge; Miller Creek Median Cable Barrier*

Salem-Keizer Transit Long-Range Regional Transit Plan (2013)
The Salem-Keizer Transit (SKT) Long-Range Regional Transit Plan provides guidance to SKT and local jurisdictions over the next 20 years for seeking transit funding and coordinating transit service between agencies. The guidance includes strategies for prioritizing transit projects and coordinating between local transit agencies to enhance transit use as well as reduce greenhouse gas emissions. This Long-Range Plan is intended to help other communities plan for transit service during the development of their TSPs. The Plan's specific recommendations within the Albany/Millersburg – Salem corridor are:

- ***Albany/Millersburg – Salem (Priority 2):*** Create new fixed-route service focused on commuters with a stop in Millersburg.
- ***Corvallis – Salem (Priority 4):*** Provide service through a connection in Albany. Develop timed transfer that connects in Albany with the Linn-Benton Loop Bus.

Project Relevance
The TSP will consider the SKT Long-Range Regional Transit Plan in the development of transit recommendations and improvements within the city of Millersburg. As part of the transit considerations, the city should evaluate the potential for coordination between regional and local transit agencies to identify opportunities for system expansion to include Millersburg.

Local Plans, Policies, Regulations, Reports, and Funding Sources

City of Albany Transportation System Plan (2010)
The city of Albany's Transportation System Plan (TSP) guides development of transportation facilities while incorporating the community's vision of providing "a safe, diversified, and efficient transportation system that serves the needs of anticipated growth while protecting and enhancing Albany's economy, neighborhood quality, and natural and built environment." The TSP provides guidance for the development of transportation infrastructure within Albany while considering state and local plans and policies.

Project Relevance
The city of Millersburg TSP will consider the city of Albany's functional classifications and standards for roadways that are in both cities to strive to ensure that differences do not cause unsafe or inconsistent conditions.

Linn County Transportation Plan Code (County Code, Title 9, Chapter 907)

Chapter 907 - Linn County Transportation Plan Code was developed to update the 1980 Comprehensive Plan to account for the increase in population, growth, and issues as they relate specifically to the County's transportation system. The Plan Code provides support on how to maintain and enhance the current multimodal transportation of Linn County through goals, policies, procedures, and proposed projects. Linn County has started work on development of a TSP and updates to the Code as necessary. That update is expected to be complete in 2017.

Project Relevance

The TSP will incorporate the applicable policies and actions to the maximum extent practicable. The TSP will consider the County Transportation Plan Code to ensure the city and county are consistent in function and geometry for shared facilities. The city will also monitor the County's TSP update process to ensure consistency with any updated policies and actions that may affect Millersburg.

The relevant Transportation Planning policy statements from the Plan Code include:

(1) Linn County supports a transportation system that:

(a) Furnishes efficient movement for Linn County residents, businesses and other users;

(b) Facilitates the flow of goods and services so as to strengthen the local and regional economy;

(c) Adequately serves the needs of agricultural and forest enterprises; and

(d) Maintains and supports multimodal transportation opportunities.

(2) It is the policy of Linn County that an integrated transportation system, which accommodates a variety of travel modes and demand management programs, be maintained and promoted. It is the policy of Linn County to:

(a) Consider all modes of transportation including highways and roads, public transit, air, rail, bicycling, walking and telecommunication, where needed and economically feasible, when making transportation decisions;

(b) Consider carpooling, vanpooling, telecommuting and staggered work shifts as alternatives for reducing congestion when making transportation decisions;

(c) Avoid total reliance on any one mode of transportation and support other modes of travel besides the automobile;

(d) Reduce auto reliance through providing a road network that can accommodate public transit, bicycling and walking facilities;

(e) Plan land uses that support alternative modes when appropriate; and

(f) Support transportation access for all residents through a combination of walking and bicycling facilities, provision of special transportation for the transportation disadvantaged, identification of opportunities for coordinating special transportation, encouragement of use of alternate modes and coordination of multimodal passenger services.

(3) It is the policy of Linn County that conflicts between transportation modes be minimized, especially:

(a) Conflicts between movements of automobiles, pedestrians and bicyclists; and

(b) Conflicts between roads, rail lines and airports.

(4) It is the policy of Linn County to cooperate with appropriate agencies, organizations and jurisdictions in locating multimodal transfer points, especially public transit and bicycle facilities.

(5) It is the policy of Linn County that the presence of a transportation facility or improvement shall not be a basis for allowing residential, commercial, or industrial development on rural resource lands.

Linn County Coordinated Public Transit-Human Services Transportation Plan (2007)

This Plan was developed to provide a framework for enhancing the delivery of transportation services to seniors, persons with disabilities, and residents with low income. The goal of this Plan is to "identify transportation needs and outline opportunities to coordinate and enhance community transportation services." The Plan evaluated the community's resources, assesses transportation needs, provides strategies to address the identified needs, and establishes relative priority. The applicable goals from this Coordinated Plan include:

- Strengthen existing public transportation programs and utilize, where possible, these programs to particularly provide service to seniors, persons with disabilities and persons with low income.
- Strengthen regional partnerships to improve coordination, connectivity, accessibility and efficiency of transportation services.
- Identify and secure realistic, equitable and sustainable funding, including the use of local resources to leverage federal and state funds, for transportation options.
- Improve transportation services that are an essential part of daily life for residents with developmental disabilities.
- Improve economic vitality by improving employment-related transportation options.
- Working with federal and state partners, advocate and support efforts to secure strategic and sustainable investments in transit infrastructure, particularly vehicles.
- Increase public involvement in planning, development and funding decisions related to public transportation.

Project Relevance

The Project will utilize needs and recommendations outlined in this Plan to inform the development of a TSP consistent with the vision of the Coordinated Plan.

Albany Public Transit Plan (2011)

The Albany Transit Plan evaluates the existing transit service and infrastructure and provides framework for future improvements and capital investments needed to allow for population growth. The Albany Public Transit Plan provides operation, capital, fare system, and marketing improvement recommendations for transit within Albany. It recognizes that with the formation of the MPO, the role of public transportation may be expanded. A Transit Development Plan (TDP) is currently being prepared for AAMPO in conjunction with the RTP. The TDP is will include considerations about the existing transit system, summary of future growth and regional travel, and prioritized projects to address existing and future transit needs. The TDP process will result in a separate plan that focuses on transit and interim documentation, but will share some of the same outreach and public events as the RTP process.

Project Relevance

The recommendations will be considered in the development of any proposed transit improvements to expand to the city of Millersburg the transit system within the greater Albany area.

City of Millersburg Comprehensive Plan (1984)

The transportation element of the city of Millersburg Comprehensive Plan contains an inventory of the transportation system with recommendations and policies aimed at developing streets, highways, mass transit, bicycle and pedestrian facilities, and railroads within the Millersburg area.

Listed below are the goals and policies that should inform the development of the TSP.

Transportation Element

Goals:

To provide a transportation policy plan as a guide for a systematic network of traffic ways related to the patterns and needs of community activity.

To ensure the development of a balanced transportation system for the safe, convenient and efficient movement of people and goods.

General Policies:

1. Seek to develop a balance d transportation system which includes all transportation modes appropriate for the City’s needs.
2. Proposals shall be reviewed to determine whether they enhance or deter the overall growth policy of the Urban Growth Area.
3. Transportation proposals shall be reviewed to endure adverse social, economic, energy and environmental impacts and costs are minimized.

4. Cooperate with other units of government in planning and developing transportation facilities.
5. Future projects shall contribute to the emergence of a systematic circulation network.
6. Encourage multiple uses of transportation rights-of-way.

Streets and Highways:

1. Future streets and highways shall contribute to the creation of an efficient circulation network and provide for convenient movement of traffic and access to all parts of the community.
2. The circulation network shall encourage compact community development.
3. The street element of the Comprehensive Plan shall be the official street map for the city of Millersburg.
4. The Street and Highway Functional Classification System and Standards shall apply.
5. The city shall investigate alternatives to improve traffic and safety on existing streets and develop standards to prevent congestion and hazards.
6. The city shall cooperate with the county and state to guarantee that safe conditions are maintained for the protection of residents.
7. Arterials shall provide for the convenient movement of traffic around the periphery of main concentrations of community activity.
8. The use of land adjacent to arterials shall not be allowed to conflict with the safe and efficient movement of traffic.
9. Old Salem Road, Conser Road, Millers Cemetery Road, Morning Star Road, and Century Drive's connection to Old Salem Road shall be preserved and maintained as the city's primary arterial streets.
10. Collector streets shall provide for movement within the city's neighborhoods and collect and distribute traffic from arterial streets and highways.
11. Woods Road, Waverly Drive, and Alexander Lane are designated internal collectors.
12. As the city grows, additional collectors should be developed, particularly within the area north of Conser Road.
13. Development proposals shall be reviewed to ensure they do not adversely impact potential rights-of-way for needed arterial and collector streets.
14. The city encourages development of an industrial service road paralleling Old Salem Road between Conser Road and Millers Cemetery Road to serve existing and potential industrial populations.
15. All other existing streets in the community shall be designated local streets.
16. Local residential streets shall be designated and constructed to discourage through traffic within residential areas.
17. New streets shall provide logical continuations of the existing street network.
18. The alignment of new streets shall be determined with consideration given to existing property lines, natural features and maximum land utilization.

19. New streets shall provide for a logical pattern of street names and addresses.
20. Existing and proposed street alignments and rights-of-way shall be protected from encroachment by future developments through adherence to the standards and review criteria of the Zoning and Subdivision Ordinance.
21. Developments on slopes shall be designed for a minimum of cut and fill to avoid adverse environmental conflicts wherever possible.
22. City design and construction standards for street development and maintenance shall be enforced.

Mass Transit:

1. The city has a need for a public transit system to transport area residents to nearby urban centers and shall encourage the development of a regional transit system.
2. The planned Albany-Corvallis-Philomath bus system should eventually be expanded to serve Millersburg.
3. The city supports the Linn County Senior Bus Service as a necessary and needed transportation for elderly and handicapped citizens. The city supports eventual extension of this service to Millersburg.
4. The city shall support additional mass transit services to meet the needs of the community.
5. The city shall support the provision of improved mass transit services to meet the needs of the transportation disadvantaged.
6. The city shall work with and support efforts by other governmental agencies or private industry interests concerned with future regional public transit within the Linn-Benton County area.

Bicycle and Pedestrian Ways:

1. The city shall develop a bikeway and pedestrian plan.
2. In developing the bicycle and pedestrian plan, consideration shall be given to relating bike and pedestrian pathways to employment centers; future parks, greenways, schools; and other public sites.
3. The bike and pedestrian plan shall contain a priority list of future bike and pedestrian ways.
4. The Planning Commission shall include consideration of bicycle and pedestrian needs as part of the project review procedure.
5. The city shall continue to provide and improve bikeways and pedestrian ways as part of its continuing street improvement program.
6. The city shall cooperate with the city of Albany and Linn County in providing connections or extensions to future bike or pedestrian ways within the Planning Area.
7. The existing bike path along Old Salem Road should eventually be extended into the northern segment of the community as development warrants.

Railroad:

1. The city supports freight and passenger railroads service as vital elements of a balanced transportation system.

2. The city supports expanded Willamette Valley passenger rail service that includes service to the Albany-Millersburg area.
3. Priority consideration for future land uses along existing rail freight lines should be given to those uses which require rail transport services.

Air:

1. The city of Millersburg shall cooperate with other units of government in supporting development of a regional airport facility as part of a balanced transportation system.

Land Use Element

The land use elements sets policies and recommendations for the suitable types, amounts, and intensities of land uses specific parts of the city should be designated with.

General Policies:

1. Sufficient area shall be maintained for the balanced expansion of all major land uses.
2. Areas with existing consistent land use patterns shall be preserved and reinforced unless other overriding factors suggest a change.
3. The carrying capacity of air, land and water resources shall be utilized in determining appropriate land uses within the community.
4. Standards shall be adopted and enforced to ensure the preservation and provision of natural vegetation in all development areas.
5. The extent and boundaries of each land use district shall be shown on the Comprehensive Plan Map.

Project Relevance

The TSP will be developed to become incorporated as an element of the city's Comprehensive Plan. The TSP will incorporate the goals and policies of the Comprehensive Plan to further implement the vision for the city while re-evaluating the goals stated within to ensure the transportation element is modified to suit the needs of Millersburg through the 2040 planning horizon.

Millersburg Funding

Funding data summarizing historic street System Development Charges (SDC) and expenditures and street fund credits were obtained from the city for an analysis of current funding conditions. SDCs are fees collected from new development and changes in use to help the city offset the costs of impacts to the street network. Street fund history from fiscal year 2014-2015 and 2015 to-date was also available for review. The city's street fund is made up of SDCs, the State Highway Use Tax, and occasional transfers from the General Fund, when needed.

Project Relevance

The TSP will consider the city's funding and expenditures when establishing project lists. A summary of available funding data is summarized below.

Historic Funding Table (Last 10-years)					
Fiscal Year	Street SDCs Received in Fiscal Year	Total Received To Date	Total Spent in Fiscal Year	Spent On	Remaining
2005-2006	$12,464	$12,464			$12,464
2006-2007	$187,388	$199,952			$199,852
2007-2008	$63,911	$263,763			$263,763
2008-2009	$30,600	$294,363	$294,363	Millersburg Drive Improvements	
2009-2010	$63,756	$358,119			$63,756
2010-2011	$56,672	$414,791			$120,428
2011-2012	$42,504	$457,295	$162,932	Alexander Lane Improvements	
2012-2013	$109,802	$567,097			$109,802
2013-2014	$120,428	$687,525	$74,789	Knox Butte Avenue Improvements	$155,441
2014-2015	$120,428 *(as of 5/5/15)*	$808,153			$275,869

- ***Fiscal Year 2014 Street Fund:*** $76,176.47
- ***Fiscal Year 2015 (to-date) Street Fund:*** $22,964.69

Millersburg Land Use Development Code

The city of Millersburg's Land Use Development Code was adopted in 2006 and amended in 2012. The purpose of the zoning code is to establish standards and procedures to encourage the appropriate and orderly physical development of land in the city in alignment with goals set forth in the Millersburg Comprehensive Plan. The Development Code also protects the property rights of city residents, establishes procedures for due process of law, and promotes public health, safety and welfare for the citizens of Millersburg.

Project Relevance

The TSP may propose new policies to meet current regional and state requirements. The following code sections specifically affect transportation planning in Millersburg:

Section 5.120, Section 5.121 – Parking, Off-Street Parking Requirements

These sections provide basic standards for development of parking facilities. Thoughtful planning and design parking supply that is appropriate for the anticipated demand are encouraged. Off-street minimum parking requirements are provided for each land use. Shared parking agreements that encourage more efficient use of parking resources are also permitted. The TSP may propose new policies to meet current regional and state requirements.

Section 5.122 – Transportation Standards

This section outlines required standards for developments as they relate to the improvement and maintenance of the transportation system. Requirements for bicycle and pedestrian facilities, access management, infrastructure improvements and maintenance are discussed.

Section 5.123, Section 5.124, Section 5.125 – Streets, Sidewalks, Bikeways

These sections provide planning and design standards for public and private transportation facilities. This includes standards for attractive and safe streets that can accommodate vehicle traffic from planned growth and provide a range of multimodal transportation options, in addition to driving.

C. Technical Memorandum #3: Regulatory Review

City of Millersburg Transportation System Plan

Technical Memorandum #3
(Task 3.3 Regulatory Review)

Prepared for

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Introduction

As part of the development of the City of Millersburg Transportation System Plan (TSP), this Technical Memorandum reviews and identifies regulatory gaps in the City of Millersburg Comprehensive Plan (January 1984) and Land Use Development Code (2006, amended 2002) that need to be updated to bring them into compliance with:

- Statewide Planning Goal 12 (Transportation);
- Transportation Planning Rule (TPR) (OAR 660-012);
- Oregon Transportation Plan (OTP); and
- Anticipated TSP policies.

TSP policies must:

- Protect the function of roadway facilities;
- Promote alternate modes including transit, walking, and bicycling; and
- Ensure that land uses and roadway classifications are compatible.

The recommended changes in this memorandum will be used to develop implementing regulations in a later task.

The review summarizes existing policies or gap in policy and regulations which protect the function of roadway facilities, promote alternate modes (transit, bicycling, and walking), ensure that land uses and roadway classifications are compatible.

Statewide Planning Goal 12, Transportation

In 1973, Oregon established a statewide program for land use planning with 19 statewide planning goals. The goals are adopted as administrative rules in Oregon Administrative Rules Chapter 660, Division 015 (please see the next section). Oregon's statewide goals are implemented through local comprehensive plans, which must be consistent with the goals, and zoning and land-division ordinances. The laws strongly emphasize coordination—keeping plans and programs consistent with each other, with the goals, and with acknowledged local plans.

Goal 12 is to "provide and encourage a safe, convenient and economic transportation system." The required elements of a transportation plan that Goal 12 mandates are in the first column of **TABLE** 1.

TABLE 1. ASSESSMENT OF THE 1984 MILLERSBURG COMPREHENSIVE PLAN COMPLIANCE WITH GOAL 12

Statewide Planning Goal 12	1984 Comprehensive Plan Transportation Element
(1) consider all modes of transportation including mass transit, air, water, pipeline, rail, highway, bicycle and pedestrian;	Does not include water One goal related to air, but no evaluation Pipelines are assessed in a separate chapter
(2) be based upon an inventory of local, regional, and state transportation needs;	No inventory of needs; qualitative statements
(3) consider the differences in social consequences that would result from utilizing differing combinations of transportation modes;	Not included
(4) avoid principal reliance upon any one mode of transportation;	No evaluation included General Policy #1: *The City shall seek to develop a balanced transportation system which includes all transportation modes appropriate to the City's needs.*
(5) minimize adverse social, economic and environmental impacts and costs;	No minimization measures included General Policy #3: *Transportation proposals shall be reviewed to ensure adverse social, economic, energy and environmental impacts and costs are minimized.* Aspirational statement in the introduction: *It is important to note that changes to the transportation system can have a wide variety of economic, social, and environmental impacts. Major transportation facilities should efficiently meet economic and social needs, without disrupting urban social units, unique natural resources, or cohesive land use districts.*
(6) conserve energy;	Energy is evaluated in a separate chapter, but not in relation to transportation Mass Transit Goal #4: *The City shall support additional mass transit services to meet the transportation needs of the community and to assist in the conservation of energy, the reduction of air pollution and the improvement to overall community livability.*
(7) meet the needs of the transportation disadvantaged by improving transportation services;	No evaluation included Mass Transit goals: *3. The City supports the Linn County Senior Bus Service as a necessary and needed transportation system for elderly and handicapped citizens. The City supports eventual extension of this service to include Millersburg.* *5. The City shall support the provision of improved mass transit services to meet the needs of the transportation disadvantaged, including those individuals who have difficulty in obtaining transportation because of their age, income or physical or mental disability.*

Statewide Planning Goal 12	1984 Comprehensive Plan Transportation Element
(8) facilitate the flow of goods and services so as to strengthen the local and regional economy; and	See the assessment of (5), above
(9) conform with local and regional comprehensive land use plans. Each plan shall include a provision for transportation as a key facility.	Contains a transportation element

For the preparation of the TSP, the project team will inventory existing facilities and assess deficiencies and future needs for all transportation modes and users, including the transportation disadvantaged. Social, economic, and environmental effects will be evaluated.

Statewide Transportation Planning Rule (TPR) (OAR 660-012)

The purpose of the Statewide Transportation Planning Rule (TPR) is to "implement Statewide Planning Goal 12 (Transportation) to provide and encourage a safe, convenient and economic transportation system." The principle intent of the TPR is to promote more careful coordination of land use and transportation planning, in order to assure that planned land uses are supported by and consistent with planned transportation facilities and improvements. When a plan or zoning amendment would result in levels of traffic that exceed the highway performance standards for a roadway, it is deemed to have a significant effect on the roadway. Moreover, TSPs are required to be developed in accordance with the TPR, therefore, the TPR contains specific requirements for the development of TSPs.

Transportation Planning Rule Compliance

The Transportation Planning Rule (TPR) requires local jurisdictions to adopt ordinances and regulations to protect transportation facilities. Table 2 provides a checklist of TPR requirements and shows how Millersburg's (a) Comprehensive Plan and Zoning Ordinance address the requirements, and (b) how the Millersburg TSP recommends new of revised policy and code to implement the TSP (this later section to be completed as part of Task 6.3)

The TPR requirements are grouped by general topic. For each requirement, Table 2 identifies whether the current code is in compliance, summarizes the current code, and summarizes the adopted policy and/or code change(s). The adoption of the amendments listed in this table (when completed) brings the City of Millersburg into full compliance with the TPR.

TABLE 2. ASSESSMENT OF THE 1984 MILLERSBURG COMPREHENSIVE PLAN COMPLIANCE WITH THE TPR

Elements of Transportation System Plans					
		Current Compliance			
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Yes**	**Partial**	**No**	**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
OAR 660-12-020 (2) (b) TSP shall include a road plan including a functional classification consistent with state and regional TSPs. Road standards for local streets to: 1) address extensions of existing streets 2) connections to existing and planned arterials and collectors 3) connections to neighborhood destinations	City's Comprehensive Plan Transportation Plan (1994) defines functional classification and basic design elements. 1-3) Millersburg LUDC [5.122 (1) (b)] requires consideration of 'street' extensions but no city-wide mapping.		X X		To be completed in Task 6.3
OAR 660-12-020 (2) (c) TSP shall include a public transportation plan which describes a description of: 1) public transportation services for the disadvantaged and identifies service inadequacies 2) intercity bus and passenger rail system	1) City's Comprehensive Plan includes only general goals for 'mass transit', but no identified deficiencies, all of which is largely outdated. 2) City's Comprehensive Plan includes general goals for 'mass transit', all of which is largely outdated.			X X	
OAR 660-12-020 (2) (d) The TSP shall include a bicycle and pedestrian plan	Comprehensive Plan includes only general plan for bicycle and pedestrian connections. *To be completed as part of the Millersburg TSP process.*			X	
OAR 660-12-045(6) Bicycle and pedestrian plans must include improvements that connect neighborhood activity centers (schools, shopping)	Comprehensive Plan includes only general plan direction for bicycle and pedestrian connections. *To be completed as part of the Millersburg TSP process.*			X	

Elements of Transportation System Plans					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-020 (2) (e) The TSP shall include air, rail, water and pipeline transportation plans	Comprehensive Plan has goal(s) but no mapping or plan for air, rail and pipeline; does not include water. *To be completed as part of the Millersburg TSP process.*		X		To be completed in Task 6.3

TSP Preparation					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-015 (4) The TSP must be adopted as part of the Comprehensive Plan	*To be completed as part of the Millersburg TSP process.*			X	To be completed in Task 6.3
OAR 660-12-015 (5) Preparation of the TSP will be coordinated with state and federal agencies and other jurisdictions.	*To be completed as part of the Millersburg TSP process.*			X	

TSP Preparation					
		Current Compliance			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Yes**	**Partial**	**No**	
OAR 660-12-015 (6) Mass transit, transportation airport and port districts must participate in preparation of the TSP and adopt plans for the transportation facilities they maintain consistent with the TSP.	The city of Albany provides public bus transportation within the Albany urban area. No transit service is provided in Millersburg as part of the Albany MPO. There are no airport or port districts within the Millersburg urban growth boundary. This provision of the TPR does not apply.	 **X**		**X**	To be completed in Task 6.3

Implementation of the Transportation System Plan					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-045(2) Local governments shall adopt regulations/policies to protect transportation facilities for the following topics:					To be completed in Task 6.3
1) access management standards	1) Millersburg LUDC [5.122 (5)] includes access management standards discussion. TSP may consider detailed metrics.	**X**			
2) future operation of roads and transit corridors	2) Millersburg LUDC [5.122 (5) (1)(4)] includes discussion of future operation performance, but no specific threshold.		**X**		
3) control of land use around airports	3) Millersburg has no airport.	**X**			
4) coordinated review of transportation facility projects, including notice to ODOT of certain actions	4) Millersburg LUDC does not include review/notification of projects to ODOT			**X**	
5) land use, density should be consistent with road classifications in TSP	5) *To be completed as part of the Millersburg TSP process.*			**X**	

Implementation of the Transportation System Plan					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-045(3) Local governments must amend subdivision regulations in accordance with the following directions: 1) provide bike parking in multi-family developments 4 units or more 2) provision of pedestrian and bicycle connections from new subdivisions/multi-family development to neighborhood activity centers 3) on-site road improvements must accommodate bicycle and pedestrian facilities on arterials and major collectors.	1) Millersburg LUDC [5.125 (4)] requires bicycle parking for commercial. office/residential uses, and multi-family developments. 2) Millersburg LUDC [5.122 (1) (b)] requires consideration of 'street' extensions but not pedestrian-specific connections. 3) Millersburg LUDC [5.123 (4 - Streets); 5.124 (5 – Sidewalks); and, 5.125 (Bikeways)] require bicycle and pedestrian facilities on arterial and collector streets.	X X	X		

Implementation of the Transportation System Plan					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-045 (5)(c) (In MPO areas, local governments shall adopt land use and subdivision regulations to reduce reliance on the automobile which Implements a **parking plan** which <u>either</u> 1) Achieves a 10 percent reduction in the number of parking spaces per capita (in the MPO area) over the planning period, and 2) Includes land use and subdivision regulations setting minimum and maximum parking requirements <u>or</u> 3) Revise ordinance requirements for parking to: • Reduce minimum off-street parking requirements for all non-residential uses • Allow provision of on-street parking and shared parking to meet minimum off-street parking requirements • Establish off-street parking maximums in appropriate locations • Exempt structures parking and on-street parking from parking maximums	*To be completed as part of the Millersburg TSP process.* This assessment will require intergovernmental planning and coordination through the RTP development process.			**X**	To be completed in Task 6.3

Implementation of the Transportation System Plan					
TPR Requirements	Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements	Current Compliance			Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments
		Yes	Partial	No	
OAR 660-12-045 (7) Local governments shall provide street standards that minimize right-of-way widths and pavement width	Adopted street standards in LUDC [5.123 (4)] include minimum rights-of-way and street widths. Some refinement may be assessed in the TSP process.	X			

Coordination of Land Use Reviews and Decisions/Plan and Land Use Amendments					
TPR Requirements	Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements	Current Compliance			Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments
		Yes	Partial	No	
OAR 660-12-060 Amendments to comprehensive plans that significantly affect a transportation facility shall assure that allowed land uses are consistent with identified function, capacity and level of service on that road.	Current policies do not address this provision of the Administrative Rule.			X	To be completed in Task 6.3

Coordination of Land Use Reviews and Decisions/Plan and Land Use Amendments					
		Current Compliance			
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Yes**	**Partial**	**No**	**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
OAR 660-12-025 Findings of compliance with applicable statewide planning goals and acknowledged comprehensive plan policies shall be developed with the adoption of the TSP.	*To be completed as part of the Millersburg TSP process.*			X	

Determination of Transportation Needs					
		Current Compliance			
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Yes**	**Partial**	**No**	**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
OAR 660-12-030(1) The TSP should identify the following transportation needs: 1) state, regional and local 2) needs of the transportation disadvantaged 3) freight movement for industrial and commercial uses	*To be completed as part of the Millersburg TSP process.*			X	To be completed in Task 6.3

Determination of Transportation Needs					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-030(2) and (3) City TSPs shall use the state TSP for information on state needs and the county TSP for information on county needs. Within UGBs, local transportation needs are based on population and employment forecasts for 20 years	Current transportation plan for Millersburg does not include this information regarding state and county TSP needs. *To be completed as part of the Millersburg TSP process.*			X	

Evaluation and Selection of Transportation System Alternatives					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-035(1) The following alternatives shall be analyzed in the TSP: 1) improvements to existing facilities 2) new facilities 3) system management 4) demand management measures 5) no build alternative	*To be completed as part of the Millersburg TSP process.*			**X**	To be completed in Task 6.3

Evaluation and Selection of Transportation System Alternatives					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
OAR 660-12-035(3) As standards for evaluation, the transportation system shall: 1) support urban and rural development by providing transportation system that will serve the land uses identified in the comprehensive plan; 2) be consistent with state and federal protection of air, land and water quality measures; 3) shall minimize adverse economic, social, environmental and energy consequences; 4) minimize conflicts between modes; and 5) avoid reliance on one mode of travel and reduce reliance on the automobile.	*To be completed as part of the Millersburg TSP process.*			**X**	

Evaluation and Selection of Transportation System Alternatives					
		Current Compliance			
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Yes**	**Partial**	**No**	**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
OAR 660-12-035(4) In MPO areas, regional and local TSPs shall be designed to achieve adopted standards for increasing transportation choices and reducing reliance on the automobile. OAR 660-12-035(5) MPO areas shall adopt standards to demonstrate progress towards increasing transportation choices and reducing automobile reliance as provided for in this rule: For MPO areas, the TPR establishes three objectives for reducing automobile vehicle miles traveled (VMT) per capita: 1. No increase within 10 years 2. A 10 percent reduction in 20 years 3. A 20 percent reduction in 30 years.	*To be completed as part of the Millersburg TSP process.* This assessment will require intergovernmental planning and coordination through the RTP development process.			**X**	

Evaluation and Selection of Transportation System Alternatives					
TPR Requirements	**Summary of Current Plans, Policies and/or Land Use Development Code (LUDC) Requirements**	**Current Compliance**			**Summary of Adopted Plan, Policy and/or Zoning Ordinance Amendments**
		Yes	**Partial**	**No**	
These objectives are to be achieved by increasing the share of non-automobile trips (pedestrian, bicycle or transit), reducing the number of single occupant vehicle trips, increasing average vehicle occupancy, or reducing the number of trips and/or length of trips required through more intensive land use and/or a better mix of land uses.					
OAR 660-12-035(8) Where existing and committed transportation facilities can adequately serve land uses in the acknowledged comprehensive plan, local governments are not required to evaluate alternatives (above).	*To be assessed as part of the Millersburg TSP process (see below).*			**X**	

Oregon Transportation Plan (OTP, Amended September 20, 2006)

The Oregon Transportation Plan (OTP) is the state's multimodal transportation plan that assesses the needs of airports, bicycle and pedestrian facilities, highways and roadways, pipelines, ports and waterway facilities, public transportation and railroads through 2030. The OTP provides a framework for prioritizing transportation improvements to address the challenges Oregon faces based on various revenue conditions. This plan offers guidance for state, regional, local, and private transportation facilities.

This OTP supersedes the 1992 OTP, which established a vision of a balanced, multimodal transportation system and called for an expansion of ODOT's role in funding non-highway investments. The current OTP furthers these policy objectives with emphasis on maintaining the assets in place, optimizing the existing system performance, creating sustainable funding, and investing in strategic capacity enhancements.

The pertinent OTP goals and policies for the TSP are as follows:

Goal 1 – Mobility and Accessibility

Policy 1.1 – Development of an Integrated Multimodal System: It is the policy of the State of Oregon to plan and develop a balanced, integrated transportation system with modal choices for the movement of people and goods.

Policy 1.3 – Relationship of Interurban and Urban Mobility: It is the policy of the State of Oregon to provide intercity mobility through and near urban areas in a manner that minimizes adverse effects on urban land use and travel patterns and provides for efficient long distance travel.

Goal 2 – Management of the System

Policy 2.1 - Capacity and Operational Efficiency: It is the policy of the State of Oregon to manage the transportation system to improve its capacity and operational efficiency for the long-term benefit of people and goods movement.

Policy 2.2 - Management of Assets: It is the policy of the State of Oregon to manage transportation assets to extend their life and reduce maintenance costs.

Goal 3 – Economic Vitality

Policy 3.1 – An Integrated and Efficient Freight System: It is the policy of the State of Oregon to promote an integrated, efficient, and reliable freight system involving air, barges, pipelines, rail, ships, and trucks to provide Oregon a competitive advantage by moving goods faster and more reliably to regional, national, and international markets.

Policy 3.2 – Moving People to Support Economic Vitality: It is the policy of the State of Oregon to develop an integrated system of transportation facilities, services, and information so that intrastate, interstate, and international travelers can travel easily for business and recreation.

Goal 4 – Sustainability

Policy 4.1 – Environmentally Responsible Transportation System: It is the policy of the State of Oregon to provide a transportation system that is environmentally responsible and encourages conservation and protection of natural resources.

Policy 4.3 – Creating Communities: It is the policy of the State of Oregon to increase access to goods and services and promote health by encouraging the development of compact communities and neighborhoods that integrate residential, commercial, and employment land uses to help make shorter trips, transit, walking, and bicycling feasible, and that integrate features that support the use of transportation choices.

Goal 5 – Safety and Security

Policy 5.1 – Safety and Security: It is the policy of the State of Oregon to continually improve the safety and security of all modes and transportation facilities for system users including operators, passengers, pedestrians, recipients of goods and services, and property owners.

Policy 5.2 – Security: It is the policy of the State of Oregon to provide transportation security consistent with the leadership of federal, state, and local homeland security entities.

Goal 7 – Coordination, Communication and Cooperation

Policy 7.1 - A Coordinated Transportation System: It is the policy of the State of Oregon to work collaboratively with other jurisdictions and agencies with the objective of removing barriers so the transportation system can function as one system.

Policy 7.3 – Public Involvement and Consultation: It is the policy of the State of Oregon to involve Oregonians to the fullest practical extent in transportation planning and implementation in order to deliver a transportation system that meets the diverse needs of the state.

Policy 7.4 – Environmental Justice: It is the policy of the State of Oregon to provide all Oregonians, regardless of race, culture or income, equal access to transportation decision-making so all Oregonians may fairly share in benefits and burdens and enjoy the same degree of protection from disproportionate adverse impacts.

Oregon Highway Plan (1999, with Amendments)

The Oregon Highway Plan (OHP) identifies OR 164 Jefferson Highway, which intersects Interstate 5 (I-5) at Exit 238 at the north end of Millersburg and travels east to Jefferson, as a designated District Highway. The OHP further defines specific performance standards for district highways, including priorities to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas reflecting the surrounding environment and moderate to low-speed operation in urban and urbanizing areas for traffic flow and for pedestrian and bicycle movement.

The performance and mobility standards in the OHP vary by location and adjacent land use type, establishing a higher level of service expectation in the more rural areas and a lower level of service in urbanized areas.

The OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. Policies in the OHP emphasize the efficient management of the highway system to increase safety and to extend highway capacity, partnerships with other agencies and local governments, and the use of new techniques to improve road safety and capacity. These policies also link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and the local road, bicycle, pedestrian, transit, rail, and air systems.

Project Relevance

The policies applicable to planning to the TSP are described below.

Goal 1 – System Definition

Policy 1A – State Highway Classification System: Establishes that the management objective of Interstate Highways is to provide for safe and efficient, high-speed, continuous-flow operation in urban and rural areas; and for District Highways, to provide for safe and efficient, moderate to high-speed continuous-flow operation in rural areas and moderate to low-speed operation in urban and urbanizing areas.

Policy 1B – Land Use and Transportation: Recognizes the need for coordination between state and local jurisdictions.

Policy 1C – State Highway Freight System: States the need to balance the movement of goods and services with other uses of the highway system, and to recognize the importance of maintaining efficient through movement on major truck freight routes.

Police 1E – Lifeline Routes: Recognizes the need for a secure lifeline network of streets, highways, and bridges to facilitate emergency services response and to support rapid economic recovery after a disaster.

Policy 1F – Highway Mobility Standards: Sets mobility standards for ensuring a reliable and acceptable level of mobility on the highway system based on highway classification and location by providing the appropriate standards that would allow the corridor area and associated interchanges to function in a manner consistent with OHP mobility standards.

Policy 1G – Major Improvements: Requires maintaining performance and improving safety by improving efficiency and management before adding capacity.

Goal 2 – System Management

Policy 2A – Partnerships: Establishes cooperative partnerships to make more efficient and effective use of limited resources to develop, operate, and maintain the highway and road system.

Policy 2B – Off-System Improvements: Helps local jurisdictions identify and evaluate off-system improvements that would be cost-effective in improving performance of the state highway.

Policy 2C– Interjurisdictional Transfers: Encourages the State and local jurisdictions to consider interjurisdictional transfers to simplify management, reflect appropriate functional classifications of a roadway or corridor, and result in efficiencies in operations and maintenance.

Policy 2D– Public Involvement: Allows for public input on state highway system projects.

Policy 2E – Intelligent Transportation Systems: Considers services to improve system efficiency and safety through effective incident management, en-route driver information, and traffic control.

Policy 2F – Traffic Safety: Improves the safety of the highway system.

Policy 2G – Rail and Highway Compatibility: States the need to increase safety and transportation efficiency through the reduction and prevention of conflicts between railroad and highway users.

Goal 3 – Access Management

Policy 3A – Classification and Spacing Standards: Sets spacing standards dependent of the highway classification and function.

Policy 3C – Interchange Access Management Areas: Manage grade-separated interchange to provide safe and efficient operations between connecting roadways.

Goal 4 – Travel Alternatives

Policy 4A – Efficiency of Freight Movement: Seeks to balance the needs of long distance and through freight movements with local transportation needs on highway facilities in both urban and rural areas.

Policy 4D – Transportation Demand Management: Supports the efficient use of the state transportation system through investment in efforts that reduce peak period congestion.

EXAMPLE POLICIES FOR THE APPROVAL PROCESS

Policies should clarify the approval process for different types of projects. The following policies may be considered in the Millersburg TSP:

- The Transportation System Plan is an element of the Comprehensive Plan. It identifies the general location of transportation improvements. Changes in the specific alignment of proposed public road and highway projects shall be permitted without plan amendment if the new alignment falls within a transportation corridor identified in the Transportation System Plan.

- Operation, maintenance, repair, and preservation of existing transportation facilities shall be allowed without land use review, except where specifically regulated.

- Dedication of right-of-way, authorization of construction and the construction of facilities and improvements shall be allowed without land use review for those improvements that are either specifically designated in the Transportation System Plan or that are consistent with the classification of the roadway and approved road standards of the Transportation System Plan.

- Changes in the frequency of rail service that are consistent with the Transportation System Plan shall be allowed without land use review.

- For State projects that require an Environmental Impact Study (EIS) or Environmental Assessment (EA), if local review is required the draft EIS or EA shall serve as the documentation for local land use review, as follows:

  (1) Where the project is consistent with the Transportation System Plan, formal review of the draft EIS or EA and concurrent or subsequent compliance with applicable development standards or conditions;

  (2) Where the project is not consistent with the Transportation System Plan, formal review of the draft EIS or EA and concurrent completion of necessary goal exceptions or plan amendments.

- Uses permitted outright under ORS 215.213(1)(m) through (p) and ORS 215.283 (k) through (n), consistent with the Transportation System Plan, the classification of the street, and approved street standards, shall be allowed without land use review.

References

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Oregon Department of Transportation. 2006 (September 20). Oregon Transportation Plan, Volume 1. http://www.oregon.gov/odot/td/tp/pages/otp.aspx#cat2. Accessed on October 22, 2015.

D. Technical Memorandum #4: Goals, Policies, and Objectives

City of Millersburg Transportation System Plan

Technical Memorandum #4
(Task 3.5 Goals, Policies & Objectives)

Prepared for

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February 2016

Introduction

This memorandum defines the purpose and context of the Millersburg Transportation System Plan (TSP). It introduces the draft transportation-related goals, policies and objectives that will be used to evaluate the Draft Millersburg TSP and its implementation.

Memorandum Note: This Memo was prepared to facilitate review and refinement by the Millersburg TSP Project Management Team and Technical Advisory Committee. The Goals, Policies and Objectives are initially defined to reflect the City of Millersburg Comprehensive Plan and vision, in a manner that effectively coordinates with and compliments the Albany Area Metropolitan Planning Organization's (AAMPO) 2040 - RTP.

Purpose of the TSP

The City of Millersburg does not currently have a TSP. The outcome of this process will include creation of a new vision for the transportation system within the City of Millersburg, establishment of the TSP's consistency with other planning efforts in the region, and an updated set of short- and long-term priorities for improvements to the City's transportation system.

Goals, Policies & Objectives

Development and implementation of the Millersburg TSP will be guided by a series of goals, policies and measureable objectives (see Attachment A for definitions). Once adopted, the goals, policies and objectives outlined here will become part of the City of Millersburg's Comprehensive Plan. The Millersburg TSP will also seek consistency with the on-going development of the Albany Area Metropolitan Planning Organization's (AAMPO) 2040 Regional Transportation Plan (RTP), thereby helping fulfill requirements in Oregon Administrative Rule 660-012, commonly known as the Transportation Planning Rule (TPR).

Goal 1	**Increase the safety and security for all travel modes.**
Policies	• Educate the public about areas of multimodal transportation safety concerns • Identify improvements at locations with existing safety issues • Coordinate with emergency-response agencies to design and operate a transportation system that supports timely and safe response
Objectives	**1. Reduce the number of injury and fatal crashes** **2. Reduce emergency response times through improved connectivity**

Goal 2	**Enhance connectivity for all travel modes.**
Policies	• Develop a balanced transportation system which includes all modes of transportation • Coordinate with regional planning partners to introduce accessible and regular and reliable public transportation services • Encourage compact community development to facilitate multimodal network connectivity and circulation
Objectives	**1. Increase the sidewalk coverage on collector and arterial streets** **2. Increase the total length of shared-use paths (off-street) and collector/arterial bike lanes (on-street)** **3. Introduce and improve transit frequency and coverage** **4. Reduce out of direction travel**

Goal 3	**Promote economic development and preserve the mobility of existing freight routes to ensure the efficient movement of goods.**
Policies	• Facilitate the through-movement of goods and services along city arterial streets and state highways • Facilitate the movement of freight by rail and truck • Promote intermodal safety at and near railway crossings
Objectives	**1. Increase total number of jobs by enhancing freight mobility**

Goal 4	**Provide for a balanced, multimodal transportation system that meets existing and future needs.**
Policies	• Maximize efficiency of existing street system • Maintain acceptable roadway and intersection operations • Adopt access management standards, multimodal level of service policies/mobility targets, street functional classification and design standards which balance the need for access with the need for automobile, transit, pedestrian and bicycle safety with the need for efficient movement of through traffic • Ensure that the benefits and impacts of the transportation system are socially equitable • Maintain the condition of the street and sidewalk system infrastructure • Plan for transportation improvements that are needed to support future growth and transportation system needs • Provide a transportation system that serves a balance of transportation modes
Objectives	**1. Add local streets, as identified in the adopted TSP, to increase connectivity** **2. Increase walking, bicycling and transit mode shares** **3. Maintain the transportation system in a state of good repair** **4. Increase transit frequency and reliability** **5. Reduce Vehicle Miles of Traveled (VMT) per Capita**

Goal 5	**Plan and design a transportation system to enhance livability and support positive health impacts.**
Policies	• Identify the 20-year, multimodal system needs to accommodate developing or undeveloped areas without undermining the 'small town' character of Millersburg • Design and construct transportation system improvements which, to the degree possible, mitigate noise, energy consumption and neighborhood disruption • Design and construct transportation facilities with aesthetics and streetscaping to enhance livability, where appropriate and financially feasible • Encourage bicycle tourism by promoting and upgrading recreational routes through the City and surrounding areas • Support active transportation options • Identify and support beneficial public health impacts when planning and funding transportation projects • Support physical activity by maintaining existing recreational corridors and increasing pathway and trail connections
Objectives	**1. Increase the total length of shared-use paths and trails** **2. Improve health and wellness of the general population by increasing active transportation choices and access to care facilities**

Goal 6	**Demonstrate responsible stewardship of funds and resources.**
Policies	• Prioritize preservation of the existing transportation system • Maximize the cost effectiveness of transportation improvements • Support inter-jurisdictional coordination to improve project delivery and leverage funding opportunities
Objectives	**1. Minimize new capital cost expenditures when possible** **2. Reduce system lifecycle costs through advanced planning (maintenance and preservation)** **3. Increase total transportation revenue**

Goal 7	**Coordinate transportation and land use decision-making to foster development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.**
Policies	• Provide transportation facilities and services which reflect and support the land use designations and development patterns identified in the Millersburg Comprehensive Plan • Encourage integration of bicycle and pedestrian facilities into site designs for community activity centers such as schools, parks, employment and shopping areas, and major transit stops
Objectives	**1. Increase relative land values**

Goal 8	**Provide for a diversified transportation system that ensures mobility for all.**
Policies	• Provide greater transportation options for those who are transportation disadvantaged • Improve accessibility of the public transportation system
Objectives	**1. Distribute transportation system user benefits evenly across all population groups** **2. Confirm or revise city transportation design standards (as needed) to help ensure that they meet the requirements set forth in the American with Disabilities Acts (ADA).**

Goal 9	**Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.**
Policies	• Maintain acceptable roadway and intersection operations where feasible considering environmental, land use, and topographical factors • Reduce regional roadway environmental impacts by promoting transportation options and/or transportation system management and operations (TSMO) strategies in place of capacity upgrades, wherever feasible • Reduce the regional carbon footprint by reducing stopped delay, trip lengths, and vehicle miles traveled • Increase multimodal access to public parks and nature reserves to better expose the public to the benefits of environmental stewardship
Objectives	**1. Reduce total air contaminates and toxins created by the regional transportation system** **2. Reduce total impacts on life cycle CO2 caused by the transportation system** **3. Reduce transportation system related risks to the natural, built, and cultural resources**

Attachment A Definitions

For specific consistency with the AAMPO RTP, and in order to assist in interagency transportation plan coordination, this memorandum contains specific definitions and hierarchy of:

- Goals
- Policies
- Objectives

Goals are broad overarching statements about the city's desired outcomes. While not always appearing attainable, a goal describes a principal that will influence how decisions are made about future transportation investments in Millersburg.

Policies describe the approach that will be used by Millersburg to guide the city toward each goal.

An ***objective*** is a *measureable outcome*, sometimes referred to as a "performance indicator", that indicates if (or how) a policy is achieved. These objectives also address the performance-based planning requirements established in MAP-21, which are also embodied in the Draft AAMPO RTP.

E. Technical Memorandum #5: Evaluate Existing Conditions

City of Millersburg Transportation System Plan

Technical Memorandum #5
(Task 4.1 Evaluate Existing Conditions)

Prepared for

City of Millersburg
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*Appendices available upon request

This memorandum provides an existing transportation system conditions inventory and operations analysis to document existing conditions, problems, and deficiencies for all travel modes within the City of Millersburg, Oregon. The study area can be seen in Figure 1.

Existing Transportation System Inventory

An inventory of the existing transportation system in Millersburg was conducted as part of the process of developing the Transportation System Plan (TSP). This inventory includes the street, pedestrian, bikeway, public transportation, rail, air, water, and pipeline systems within the City of Millersburg City Limits and Urban Growth Boundary (UGB).

Street Network

Several jurisdictions, including the Oregon Department of Transportation (ODOT), Linn County and the City of Millersburg maintain portions of the existing street system within the study area. A comprehensive inventory was conducted of all arterial and collector streets within the City's UGB. This data collection was updated using aerial photography and field data collected in June of 2015.

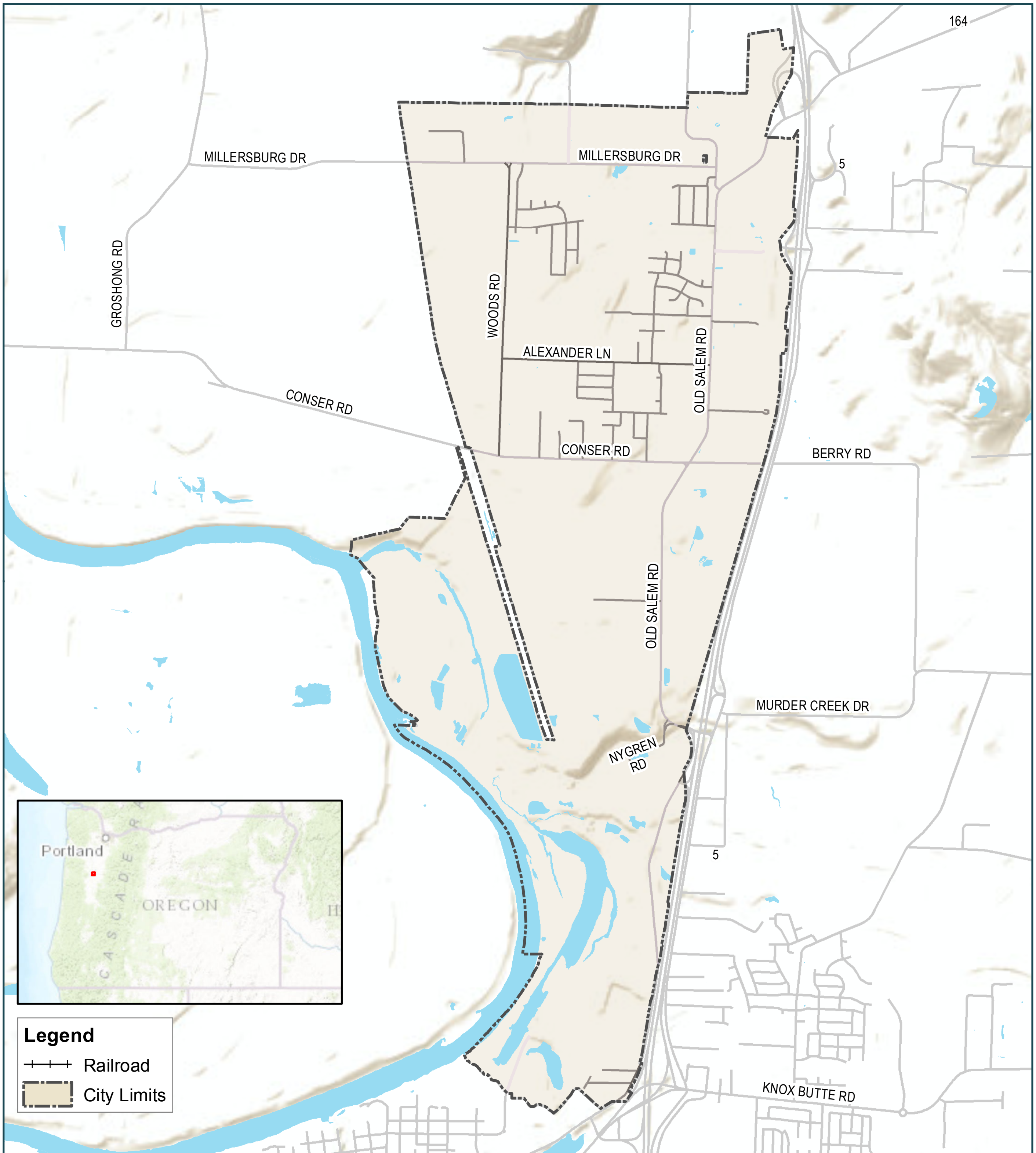
Table 1 presents an inventory of study area roadways, functional classification, jurisdiction, posted speed, number of lanes, and pavement information. A complete inventory table of the Millersburg street system is available in Appendix A. Figure 2 also displays the roadway system and other transportation related inventory information such as bridge locations and railroad crossings.

Table 1. Inventory of Arterials and Collectors

Roadway Name	Functional Classification	Jurisdiction	Speed (mph)	No. of Lanes	Paved Width (ft)	Pavement Condition
Old Salem Rd NE	Minor Arterial	ODOT/Linn County[1]	40/50/55[2]	3	40-55	Good/Fair
Millersburg Dr	Minor Arterial	City	40	2	22-32	Good/Fair
Morningstar Rd NE	Minor Arterial	City	40	2	22-24	Fair
Conser Rd NE	Minor Arterial	City/Linn County[3]	35	2	32-41	Fair/Good
Alexander Ln NE	Collector	City	35	2	24-32	Very Good
Woods Rd NE	Collector	City	45	2	21-25	Good
Century Dr NE	Collector	ODOT	55	2	22-25	Good

Notes:
1. Old Salem Rd is an ODOT facility outside Millersburg City Limits
2. Speed limit is 55 mph northeast of City Limits and 40 mph from west of Nygren Rd to Century Dr
3. Conser Rd is Linn County's jurisdiction east of Old Salem Rd

None of the study area roadways have unique designations; the only designated freight route near the study area is Interstate 5 (I-5), traveling north-south along the eastern edge of the Millersburg City Limits. However, many roadways through the city serve nearby agricultural and industrial lands. Old Salem Road in particular provides a parallel route to I-5 and serves several businesses that cater to or are related to the trucking industry. Further discussion on truck freight operations and volumes are discussed in the Existing Transportation Operations section of this report.

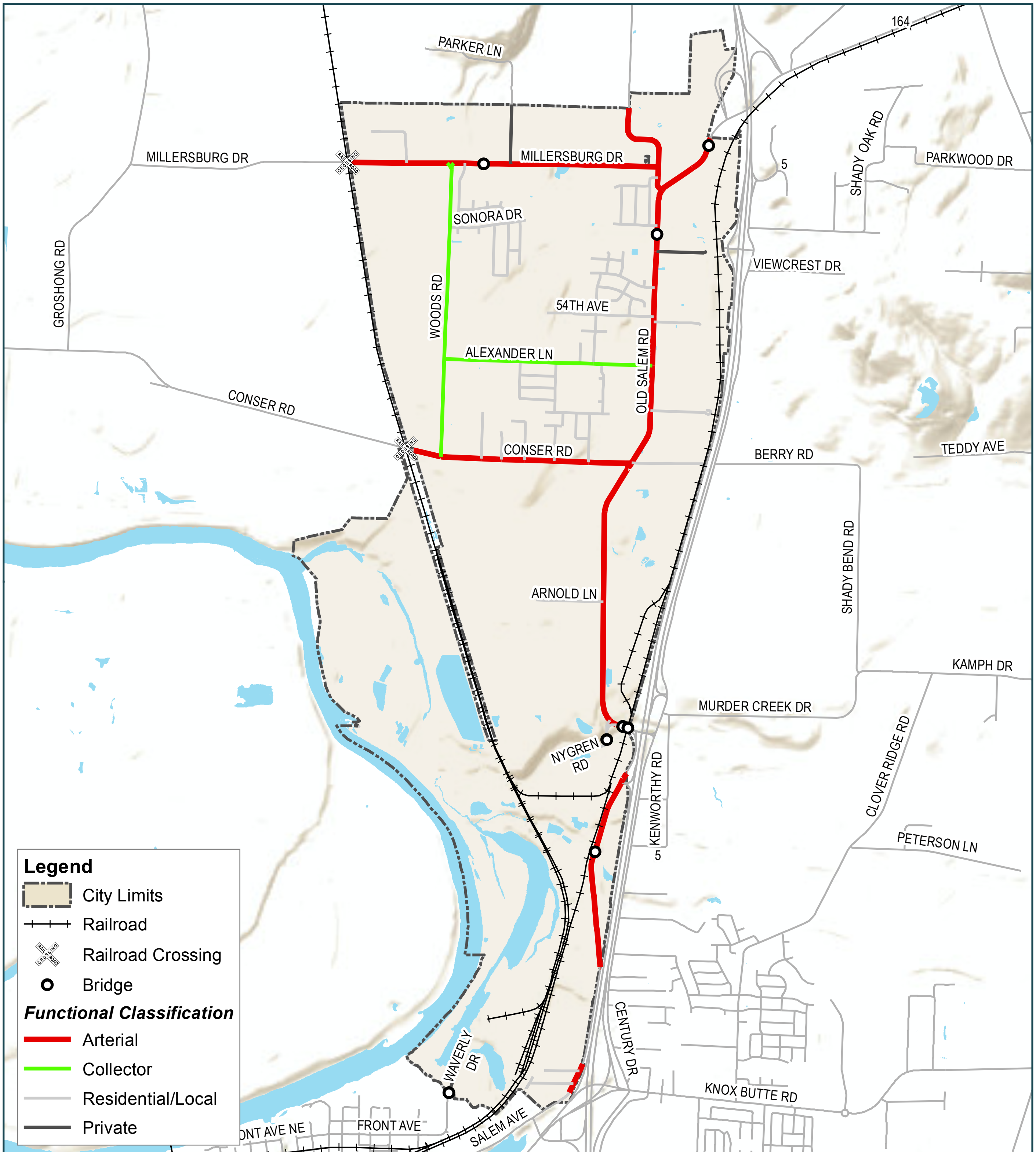


CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

Figure 1

Study Area



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

Figure 2

Transportation Inventory

0 3,000 6,000 Feet

Document Path: P:\D\DKSA00000005\0600INFO\GS\Maps\Memo Figures\TM5_02-MillersburgTSP_Transportation_Inventory.mxd

Street Jurisdiction

The street system within the City of Millersburg includes roadways under three jurisdictions: State, County, and City. There are also numerous private streets within the city.

State-Maintained Highways

Near the planning area, ODOT maintains I-5 and Old Salem Road (Jefferson Highway No. 164 - OR 164) outside of the City Limits. I-5 is a well-maintained, four-lane divided freeway with a posted speed of 65 miles per hour in the Millersburg area. It is classified by the 1999 Oregon Highway Plan as having interstate significance and serves as the primary route for traffic traveling to the area. Century Drive within the study area is also a state facility and functions as a frontage road to I-5. The two-lane road has minimal shoulder width (0-2 feet) and is assumed to have a 55 mph speed limit due to the absence of a posted speed limit sign.

Terminating just outside the planning area, OR 164 primarily serves as a loop road to the neighboring city of Jefferson and is classified in the 1999 Oregon Highway Plan as a District Highway. The highway has a two-lane cross section and posted speed near the Millersburg area is 45 mph.

County-Maintained Roads

Linn County maintains several roads within the Millersburg UGB, including portions of Old Salem Road and Conser Road. There are also two at-grade rail crossings on County maintained sections of Conser Road and Millersburg Road just west of the City Limits. See Table 1 for further details of Linn County road facilities.

City-Maintained Roads

The City of Millersburg maintains a network of streets with the two-lane cross-sections where the posted speed ranges from 25 to 40 mph.

Privately Maintained Roads

There are a few streets in Millersburg that are maintained privately. These streets are specifically listed in the street inventory table in Appendix A as privately maintained streets.

Functional Classification

The functional classification system established in the Millersburg Comprehensive Plan[1] identifies a three-fold functional classification system of arterials, collectors and local service streets which have street design standards available in the Millersburg Land Use Development Code.[2] These three classifications can be further refined for alignment with the federal functional classification system: Arterials (major and minor), collectors (major and minor) and local streets. Figure 2 illustrates the existing functional classification system and the street classifications are also listed in Table 1.

General descriptions of the classifications include:

- **Major arterial** streets are intended to serve as primary routes for travel between major urban activity centers and are equivalent to ODOT's classification of principal arterial. These streets

[1] *Millersburg Comprehensive Plan*, January 1984, p. 7-5.

[2] *City of Millersburg Land Use Development Code,* Section 5.123, amended April 10, 2012.

function in a similar manner to minor arterial streets but generally carry a much higher traffic volume.

- **Minor arterial** streets are intended to move traffic, loaded from collector streets, between areas and across portions of a city or region.
- **Major collector** streets gather traffic from neighborhoods but also serve abutting lands, particularly commercial uses. Major collector streets can serve residential, commercial, industrial, or mixed land uses.
- **Minor collector** streets are primarily intended to serve abutting lands and local access needs of neighborhoods. Minor collector streets can serve residential, commercial, industrial, or mixed land uses.
- **Local residential streets** are intended to serve the adjacent land without carrying through traffic. To maintain low volumes, local residential streets shall be designed to encourage low-speed travel.
- **Local industrial streets** are intended to serve the adjacent land without carrying through traffic.

Pavement Conditions

The pavement condition ratings for the street system were obtained from the City of Millersburg according to methods specified in the 1994 ODOT Pavement Rating guide and generally fall between fair and good. Generally, a "fair" rating would indicate evidence of cracking, some patching and minimal rutting, while "very good" would indicate nothing would improve the roadway at this time. This data collection was updated using aerial photography and field data collected in June of 2015. The pavement ratings for arterial and collector streets within the City are summarized in Table 1.

Bicycle and Pedestrian Inventory

The City of Millersburg bicycle and pedestrian system varies widely from neighborhood to neighborhood. Most of the newer subdivisions have complete sidewalk systems, while older neighborhoods lack adequate facilities. Generally the arterial or collector roadways either have shoulder or striped bicycle lanes, but not both. Morningstar Road and Woods Road do not have any bicycle or pedestrian facilities, neither does Century Drive, however this roadway is technically outside City Limits but intersects with a study area intersection. Table 2 provides a summary of the bicycle and pedestrian facilities on arterial and collector roads within the City of Millersburg.

Table 2. Inventory of Bicycle and Pedestrian Facilities on Arterials and Collectors

Roadway Name	Functional Classification	Sidewalks	Bike Lanes	Street Lighting	Shoulder	On-Street Parking
Old Salem Rd NE	Minor Arterial	Yes[1]	No	Minimal	Yes	No
Millersburg Dr	Minor Arterial	Yes[2]	Yes[2]	Minimal	No	No
Morningstar Rd NE	Minor Arterial	No	No	At intersections	No	No
Conser Rd NE	Minor Arterial	Yes[3]	Yes	At intersections	No	No
Alexander Ln NE	Collector	Yes	Yes	At intersections	No	No
Woods Rd NE	Collector	No	No	No	No	No
Century Dr NE	Collector	No	No	No	No	No

Notes:

1. Old Salem Rd has sidewalks on the west side from the north City Limits to approximately 400 feet northwest of Nygren Rd
2. No sidewalk or bike lane west of Woods Rd

3. Sidewalks exist on both sides of Conser Rd extending approximately 500 feet west from Old Salem Road and on the north side from Old Salem Rd to approximately 140 feet west of Katelyn Way.

Most of the streets are two lanes with narrower cross sections and low traffic demand, however higher speeds. As there are no schools within Millersburg, the major bicycle and pedestrian generators are the two city parks (generally accessed via Alexander Lane) and potentially City Hall. Pedestrians would benefit from the aid of pedestrian-activated crossing devices or other marked crossings that do not currently exist within the City of Millersburg. In addition to an inventory of bicycle lanes and sidewalks, the presence of pedestrian ramps at study area intersections are listed below in Table 3. The presence of pedestrian ramps does not indicate ADA compliance; further field measurements would be required to measure compliance with current ADA standards.

Table 3. Study Intersection Pedestrian Ramp Inventory

	Ramp Location			
Study Area Intersection	NW Corner	NE Corner	SW Corner	SE Corner
Woods Rd at Millersburg Dr	--	--	Yes	Yes
Morningstar Rd at Millersburg Dr	No	No	No	No
Morningstar Rd at Old Salem Rd	Yes	Yes	--	--
Woods Rd at Alexander Ln	--	No	--	No
Old Salem Rd at Alexander Ln	Yes	--	Yes	--
Woods Rd at Conser Rd	No	No	--	--
Old Salem Rd at Conser Rd	Yes	No	Yes	No
Old Salem Rd at Nygren Rd	--	--	No	No
Old Salem Rd at NE Old Salem Rd	--	--	No	No
Old Salem Rd at Century Dr NE	No	--	No	--
I-5 Exit 238 Southbound at Jefferson Hwy	No	No	--	--
I-5 Exit 238 Northbound at Jefferson Hwy	No	No	--	--
I-5 Exit 235 Northbound at Century Dr	No	--	No	--

Note: None of the intersections in Millersburg have marked crosswalks

Public Transportation Inventory

Millersburg does not currently have an established public transportation system; however there are private on-demand services. A Transit Development Plan (TDP) is currently being prepared for Albany Area Metropolitan Planning Organization (AAMPO) in conjunction with the Regional Transit Plan (RTP). The TDP will include considerations about the existing transit system, summary of future growth and regional travel, and prioritized projects to address existing and future transit needs. The TDP process will result in a separate plan that focuses on transit and interim documentation, but will share some of the same outreach and public events as the RTP process.

Willamette Valley Transport

Willamette Valley Transport provides wheelchair, stretcher and ambulatory transportation for those who need more assistance than can be provided by a basic taxi service.

Willamette Valley Transport has branches in Salem and Portland, and the Millersburg area is served by the Salem branch. Prices vary depending on the distance and customer's needs.

Taxi Service

There are several privately operated taxi services available to the Millersburg area operated out of the City of Albany. Most operators provide service 24 hours per day, seven days per week.

Rail Inventory

There are currently two railroads that travel through and serve the Millersburg area: Union Pacific (UP), Portland & Western (PNWR). Figure 2 (page 6) shows the path of the railroads and indicates at-grade crossings. The crossing on Millersburg Road is stop-controlled and the crossing on Conser Road is an active gated crossing.

Freight Rail Service

In the United States, rail lines are classified as Class I, II or III based on operating revenue, from highest to lowest, respectively. Both the UP and PNWR lines operate freight trains through the Millersburg area. UP runs adjacent to I-5 on the east side of Millersburg, while PNWR borders the western city limits. In a single day, the UP track serves approximately 25 through freight trains as a Class I railroad. PNWR serves approximately ten freight trains per day as a Class III railroad. Currently, UP serves seven industries and PNWR serves five industries within the study area, though UP and PNWR both have the potential to handle any freight commodity throughout the area.

Just south of the study area are the Albany/Millersburg Rail Yards, where a project funded through the "ConnectOregon II" grant program was recently completed in 2014 that will improve the switching operations by shifting some from the Albany yard to Millersburg.

Passenger Rail Service

Passenger rail service is not available in Millersburg itself; however there is an Amtrak station approximately four miles south of the city limits in the City of Albany. Amtrak provides north-south rail passenger service through the Willamette Valley corridor via Amtrak Cascades (between Eugene, Oregon and Vancouver, British Columbia) and Amtrak Coast Starlight (between Los Angeles, California and Seattle, Washington) trains. The passenger rail service runs approximately six passenger trains per day on track owned by UP[3].

Aviation Inventory

Although the City of Millersburg does not have an airport within its UGB, the Albany Municipal Airport is near the planning area. The Albany Municipal Airport is located south and east of I-5 between Knox Butte Road and Santiam Highway, southeast of the southern City Limits of Millersburg.

The airport has a single runway and serves a wide variety of aircrafts including small single- and multi-engine aircrafts, business class turbine aircraft and helicopters. Owned and operated by the City of Albany, the airport is classified as a Local General Aviation airport, generally serving the immediate region's local markets. In Fall 2012, airport management listed a count of 80 based aircrafts and approximate annual flight operations between 20,000 and 28,000.[4]

[3] Albany Area MPO Regional Transportation Plan Existing Transportation Conditions, October 14, 2015.

[4] Draft Albany Municipal Airport 2012 Master Plan, accessed December 2015

Water Transportation

Millersburg does not have any designated navigable waterways. The Willamette River is the only waterway considered navigable. Currently it does not play a role in the transportation of people or freight, but to become an active transportation mode, users would be restricted in height and width due to stationary highway and railroad bridge crossings.

Pipeline Transportation

A major pipeline owned by Santa Fe Pacific Pipeline-North travels through Millersburg along the I-5 corridor carrying petroleum products. International Paper Company-Albany operates a natural gas line that travels through the southern edge of Millersburg.[5]

Intelligent Transportation Systems (ITS)

In Millersburg, I-5 northbound has a dynamic message sign (northbound) and a closed-circuit television camera. These ITS assets are also noted on Figure 2. There is also a dynamic message sign planned for I-5 (southbound) in Millersburg.[6]

Additional Resources

As the development of the TSP moves forward with the evaluation of the future transportation system and potential improvements, data regarding land uses and environmental resources will be used to help determine recommendations.

Environmental and Land Use Reconnaissance

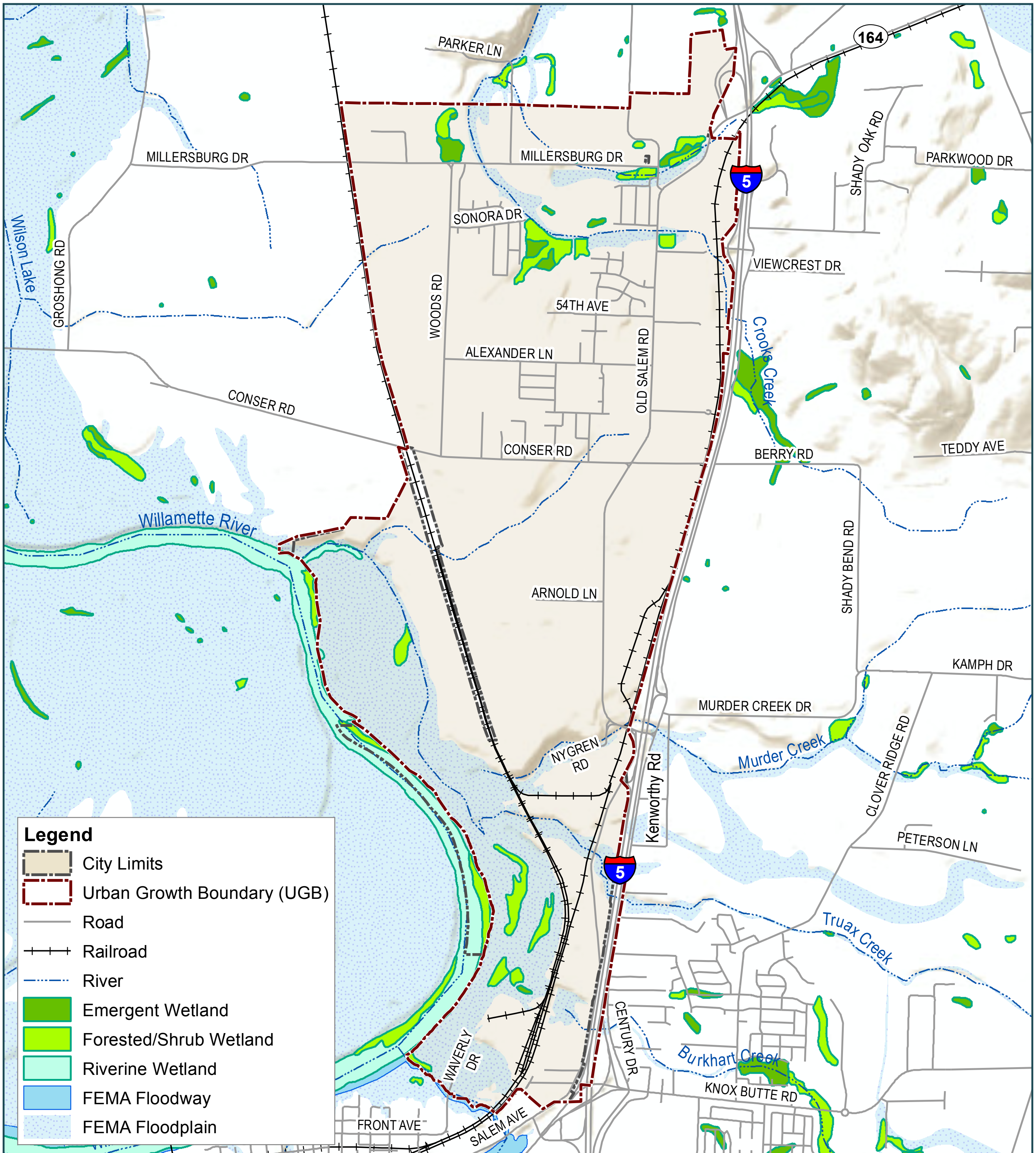
To understand the potential existing environmental and land use issues, and to help inform the conceptual alternatives development process in a subsequent phase of planning for improvements in the study area, Figure 3 and Figure 4 identify the existing environmental and land use conditions in the study area as defined below. The resources identified were based on Geographic Information System (GIS) maps, previous reports, and known resource sites. The analysis is limited to "visual windshield validation." Further resources may exist in the study area that are not yet documented or are not visually apparent.

The environmental and land use data includes:

- Environmental Reconnaissance
  - Goal 5 Resources (Riparian Corridors and Wetlands)
  - Floodplains and Floodways
- Land Use Summary
  - Community Features
  - Parks and Recreation Areas
  - Zoning designations (City and County)

[5] *National Pipeline Mapping System Public Map Viewer*, Pipeline and Hazardous Materials Safety Administration. 2012

[6] Central Willamette Valley ITS Plan, DKS Associates and IBI Group, December 2010.



Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Oregon Geospatial Enterprise Office, US Fish and Wildlife Service, FEMA, Linn County, Oregon. 2015.

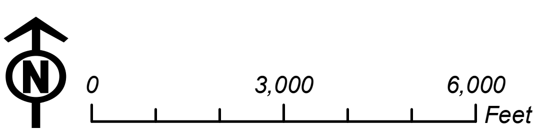
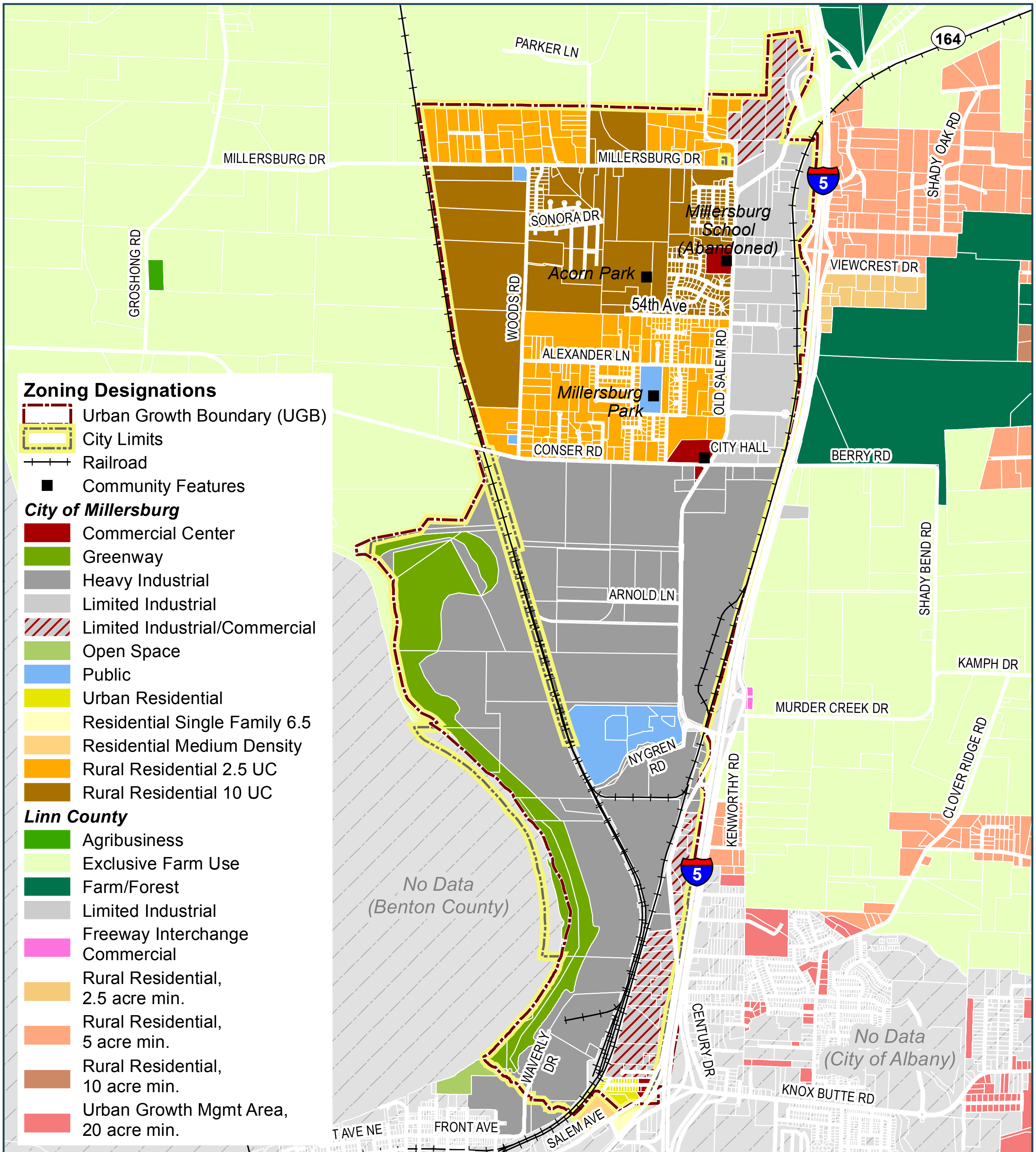


Figure 3

Natural Resources



Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

Figure 4

Land Use and Zoning Designations

N

0 3,000 6,000 Feet

Public School Inventory

There are no schools located within the City of Millersburg but the City is part of the Greater Albany Public Schools District. Residents of Millersburg would attend Clover Ridge Elementary School, Timber Ridge Middle School and South Albany High School, which are all more than two miles from the Millersburg residential areas. Students wanting to walk or bike to school would have to cross at least one major highway (I-5, US 20 or OR 99) on routes without adequate pedestrian facilities and adjacent to high speed roadways.

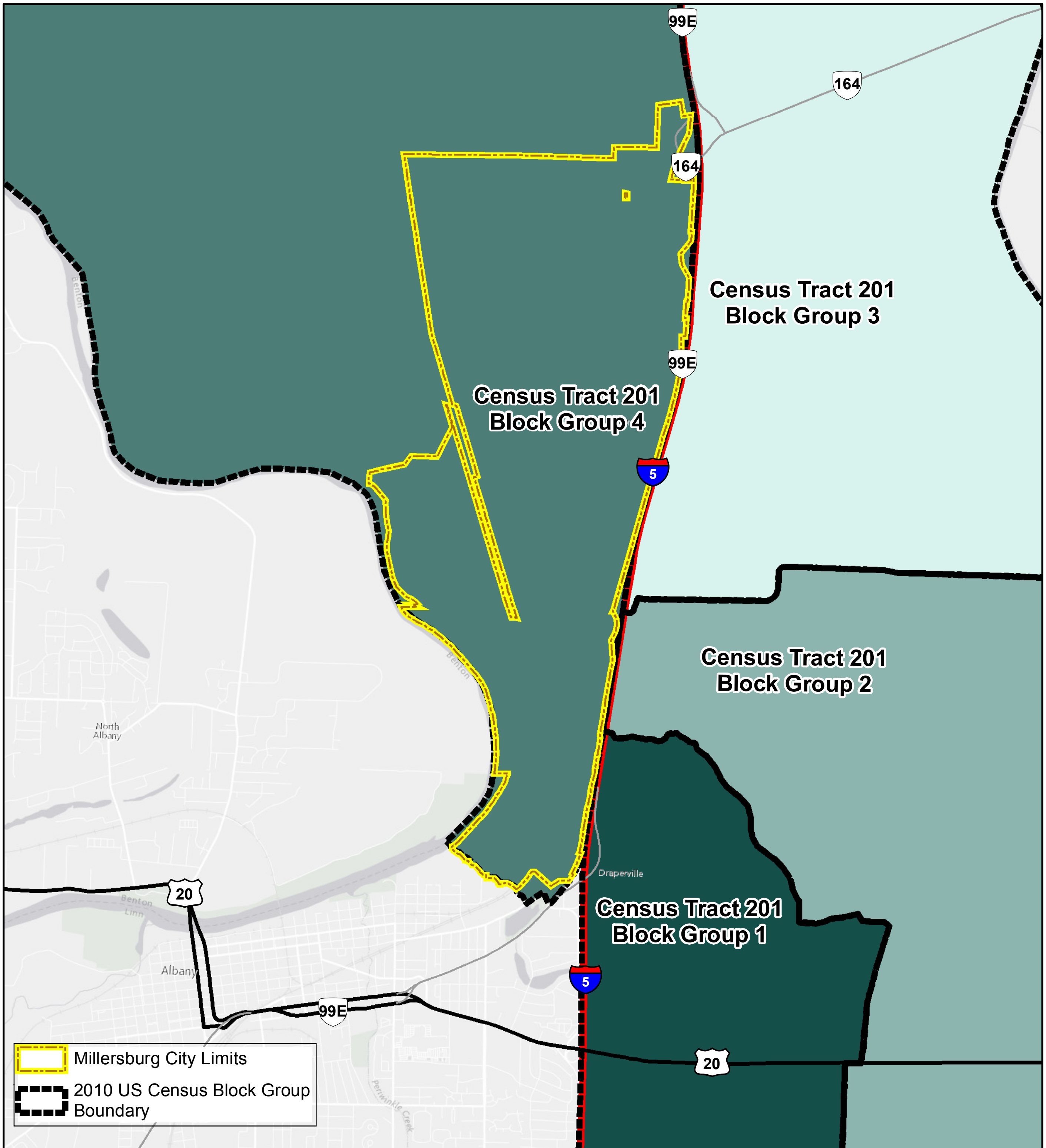
Socioeconomic and Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations of February 11, 1994, requires agencies undertaking federal projects to identify low-income and minority populations; assess whether high and adverse human health or environmental impacts would result from the alternatives; and ensure participation of low-income and minority populations in the transportation decision making process. Figure 5 illustrates the 2010 US Census tract and block boundaries for Millersburg and Table 4 lists the detailed population profile of Millersburg reference areas.

Table 4. Census Data for Millersburg Block Group and Reference Areas

	Millersburg	Reference Areas				
	Tract 201, Block Group (BG) 4	BG 3	BG 2	BG 1	Linn County	Oregon
Total Population[1]	1,738	928	1,617	4,841	116,672	3,831,074
Number of Households[1]	664	363	595	1,891	45,204	1,518,938
Male	878	476	823	2,424	57,578	1,896,002
Female	860	452	794	2,417	59,094	1,935,072
Minority (Nonwhite)[1]	172	59	128	500	15,093	825,226
Minority (nonwhite) (%)[1]	10%	6%	8%	10%	13%	22%
Hispanic or Latino (Population)[1]	161	52	103	381	9127	450062
Hispanic or Latino (%)[1]	9%	6%	6%	8%	8%	12%
White Alone[1]	90%	94%	97%	89.7%	90.6%	83.6%
Black or African American Alone[1]	0%	0%	0%	0.7%	0.5%	1.8%
American Indian or Alaskan Alone[1]	2%	2%	1%	1.5%	1.3%	1.4%
Asian Alone[1]	1%	1%	1%	1.3%	1%	3.7%
Native Hawaiian/Other Pacific Islander[1]	0%	0%	0%	0.1%	0.1%	0.3%
Some Other Race[1]	5%	2%	2%	3.4%	3.3%	5.3%
Two or More Races[1]	3%	3%	3%	3.4%	3.3%	3.8%
Median HH income[2]	$ 66,750	$ 49,650	$ 49,650	$ 57,500	$ 46,939	$ 50,229
Poverty Status (Population)	69	25	41	318	7044	223771
Poverty Status (%)	4%	3%	3%	7%	6%	6%
Median Age[1]	42.1	49.4	40.4	33.6	39.2	38.4
Senior pop (Age >65)	126	86	110	225	17991	533533
Persons with disability[2]	209	91	228	462	14326	406246
Non-Proficient Speaking English[2]	10	0	0	19	2559	225703

[1] 2010 US Census,
[2] 2009-13 ACS



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.
Data Sources: ESRI, Linn Co., OGDC, US Census

0 3,000 6,000 Feet

Figure 5

Census Tracts

Existing Transportation Operations

The assessment of traffic conditions includes development of existing traffic volumes and an assessment of traffic operations.

Turning Movement Counts

Traffic counts, conducted on May 21, 2015, consisted of 3-hour (4:00-7:00 PM) turning movement counts the 13 study area intersections. The counts included full Federal Highway Administration (FHWA) 13-class vehicle classifications at the following locations:

1. Woods Road at Millersburg Drive
2. Morningstar Road at Millersburg Drive
3. Morningstar Road at Old Salem Road
4. Woods Road at Alexander Lane
5. Woods Road at Conser Road
6. Old Salem Road at Alexander Lane
7. Old Salem Road at Conser Road
8. Old Salem Road at Nygren Road
9. Old Salem Road at Old Salem Road NE (Near Exit 235)
10. Old Salem Road at Century Drive
11. Jefferson Highway at I-5 Exit 238 Southbound Ramps*
12. Jefferson Highway at I-5 Exit 238 Northbound Ramps*
13. Old Salem Road NE at I-5 Exit 235 Southbound Ramps*

**Analyzed as part of the Albany Area MPO Project*

The traffic volume data was examined to determine a common peak hour for each of the intersections, which is the one-hour period when the sum of volumes entering at all study area intersections is highest. The common peak hour for the intersections was found to occur between 4:45 and 5:45 pm. The peak hour at each intersection may or may not correspond to the common peak hour.

Design Hourly Volumes

ODOT generally requires that transportation facilities be analyzed under design hourly volumes (DHVs), known as 30th highest hour volumes. The 30th highest hour volumes are used in traffic operations analysis so that results are valid for all but a few hours of the year. The procedure for determining 30th highest hour volumes is specified in ODOT's Analysis Procedures Manual (APM)[7] and briefly described below.

The 30th highest hour traffic volumes are calculated by multiplying the peak hour volumes by a seasonal factor. ODOT's APM outlines three methods for developing seasonal factors: On-Site ATR Method, ATR Characteristic Table Method, and ATR Seasonal Trend Table Method. There are no ATRs in the study area and the study area roadways are not representative of the state highway system, thus the Seasonal Trend Method was used to develop seasonal factors for the Millersburg TSP. Further details on the

[7] Analysis Procedures Manual, Oregon Department of Transportation, Transportation Development Division Planning Section, Transportation Planning and Analysis Unit, Salem, Oregon, April, 2006, Section 4.3.

traffic analysis methodology may be found in Appendix B, while the volume development is available in Appendix C.

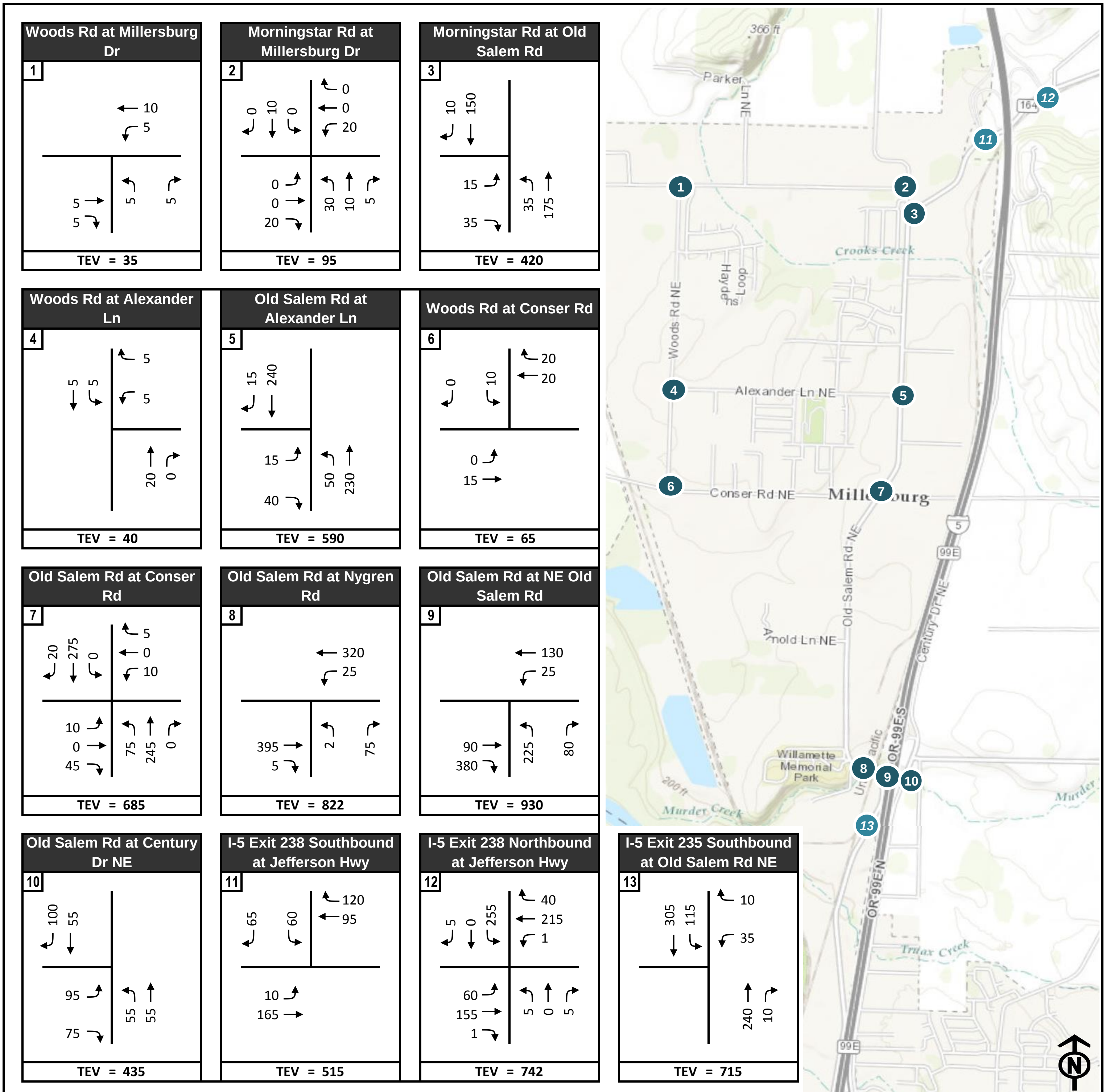
2015 Peak Hour Volumes

Figure 6 shows the existing balanced PM peak hour volumes developed for this project. The intersections that see the highest vehicular volumes during the peak hour are generally at the south city limits of Millersburg near the I-5 ramps for Exit 235. Old Salem Road has significantly higher volumes than any other road in Millersburg and also had the highest truck freight volumes.

The percentages of trucks per approach at the study intersections, based on the new intersection counts collected in May 2015, range from 0-20%. All of the study intersections have at least one approach that has more than 5% of heavy vehicles. See Table 5 for a summary of heavy vehicle percentages by approach at study area intersections.

Table 5. Existing (Year 2015) Truck Freight Percentages by Approach

	Approach			
Intersection	Eastbound	Westbound	Northbound	Southbound
1. Woods Rd at Millersburg Dr	6%	0%	0%	--
2. Morningstar Rd at Millersburg Dr	2%	20%	4%	0%
3. Morningstar Rd at Old Salem Rd	5%	--	9%	9%
4. Woods Rd at Alexander Ln	0%	6%	7%	3%
5. Old Salem Rd at Alexander Ln	12%	--	5%	7%
6. Woods Rd at Conser Rd	0%	3%	--	9%
7. Old Salem Rd at Conser Rd	7%	12%	6%	7%
8. Old Salem Rd at Nygren Rd	5%	7%	8%	--
9. Old Salem Rd at Old Salem Rd NE	6%	13%	4%	--
10. Old Salem Rd at Century Dr NE	7%	--	5%	13%
11. I-5 Exit 238 Southbound at Jefferson Hwy	8%	3%	9%	--
12. I-5 Exit 238 Northbound at Jefferson Hwy	3%	6%	--	4%
13. I-5 Exit 235 Southbound at Old Salem Rd NE	7%	--	6%	7%



City of Millersburg: Transportation System Plan

Legend

Turning Movement

PM Peak Hour Volume

TEV: Total Entering Volume

STOP Control

Intersection Number

Intersection analyzed as part of the Albany Area MPO Transportation Study

Figure 6
Existing (2015) Conditions
PM Peak Hour Traffic Volumes

MillersburgTSP Transportation System Plan

Operational Criteria

Transportation engineers have established various methods for measuring traffic operations of roadways and intersections. Most jurisdictions use either volume-to-capacity (v/c) ratio or level of service (LOS) to establish performance criteria. Both the LOS and v/c ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost.

Volume-to-Capacity (V/C) Ratio

A comparison of traffic volume demand to intersection capacity is one method of evaluating how well an intersection is operating. This comparison is presented as a v/c ratio. A v/c ratio of less than 1.00 indicates that the volume is less than capacity. When it is closer to 0, traffic conditions are generally good, with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable, with longer delays.

Level of Service (LOS)

Level of service is also a widely recognized and accepted measure and descriptor of traffic operations. At both stop-controlled and signalized intersections, LOS is a function of control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Six standards have been established, ranging from LOS A, where there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections, or more than 80 seconds at signalized intersections.

It should be noted that, although delays can sometimes be long for some movements at a STOP-controlled intersection, the v/c ratio may indicate that there is adequate capacity to process the demand for that movement. Similarly at signalized intersections, some movements, particularly side street approaches or left turns onto side streets, may experience longer delays because they receive only a small portion of the green time during a signal cycle, but their v/c ratio may be relatively low. For these reasons, it is important to examine both v/c ratio and LOS when evaluating overall intersection operations. Both are reported in the following section.

Operational Standards

The City does not currently have adopted operational standards in place for analyzing intersections. For signalized and all-way stop controlled intersections, level of service (LOS) “D” or better (representing no more than 55 seconds of average delay) is commonly considered acceptable operations. For two-way stop controlled intersections, a volume-to-capacity (v/c) ratio of up to 0.85 is generally considered to be acceptable operations.

For the I-5 Ramp Terminals, the Oregon Highway Plan (OHP) and the Highway Design Manual (HDM) will be used in the assessment of intersection operations. Both documents base their mobility performance on the calculation of v/c ratios; however, the standards in the HDM are based on higher performance levels than those in the OHP. The mobility targets from the OHP will be applied to the existing and future baseline (no build) analysis while the standards from the HDM will be applied to the evaluation of design alternatives.

Traffic Operations Analysis Procedures

All operations were evaluated using the methodology outlined in the *2010 Highway Capacity Manual* (HCM) along with the procedures outlined in ODOT's Analysis Procedures Manual (APM). The Synchro/SimTraffic analysis software was selected to perform the intersection analysis since it can provide the v/c ratio and LOS output of an HCM analysis and consider the systematic interaction of the intersections with regard to queuing and delays.

Synchro is a macroscopic model similar to the Highway Capacity Software (HCS), and like the HCS, is based on the 2010 HCM. The Synchro model explicitly evaluates traffic operations under coordinated and uncoordinated systems of signalized and unsignalized intersections. The v/c ratios and LOS presented in this report are based on the Synchro model output.

Existing PM Peak Traffic Operations

Existing (2015) PM peak hour traffic operations were evaluated at the 13 study area intersections. Operations are described in the following sections and the detailed analysis worksheets are presented in Appendix D.

Intersection Operations

Table 6 reports the operational results for the critical movement (worst movement that must stop or yield the right of travel to other traffic flows) with all individual movements reported in Figure 6. Critical movements at unsignalized intersections are typically the minor-street left turns or, in the case of single-lane approaches, the minor street approaches. These movements are required to yield to all other movements at the intersection and thus are subject to the longest delays and have the least capacity. Left turns from the major street are also subject to delays, since motorists making these maneuvers must also yield to oncoming major-street traffic.

Table 6. Existing (Year 2015) PM Peak Hour Traffic Operations Analysis Results

Intersection	Critical Movement[1]	V/C Ratio[2]	LOS[2]	OHP Target[3]
14. Woods Rd at Millersburg Dr	WB T/L	0.03	A	-
15. Morningstar Rd at Millersburg Dr	WB L/T/R	0.03	A	-
16. Morningstar Rd at Old Salem Rd	EB L	0.03	B	-
17. Woods Rd at Alexander Ln	WB L/R	0.01	A	-
18. Old Salem Rd at Alexander Ln	EB L/R	0.09	B	-
19. Woods Rd at Conser Rd	SB L/R	0.01	A	-
20. Old Salem Rd at Conser Rd	WB L	0.04	C	-
21. Old Salem Rd at Nygren Rd	NB L	0.15	B	-
22. Old Salem Rd at Old Salem Rd NE	WB L/T	0.03	A	-
23. Old Salem Rd at Century Dr NE	EB L	0.13	B	-
24. I-5 Exit 238 Southbound at Jefferson Hwy[4]	SB L/R	0.10	A	0.85
25. I-5 Exit 238 Northbound at Jefferson Hwy[4]	SB L/R	0.77	E	0.85
26. I-5 Exit 235 Northbound at Old Salem Rd NE[4]	WB L/R	0.16	C	0.85

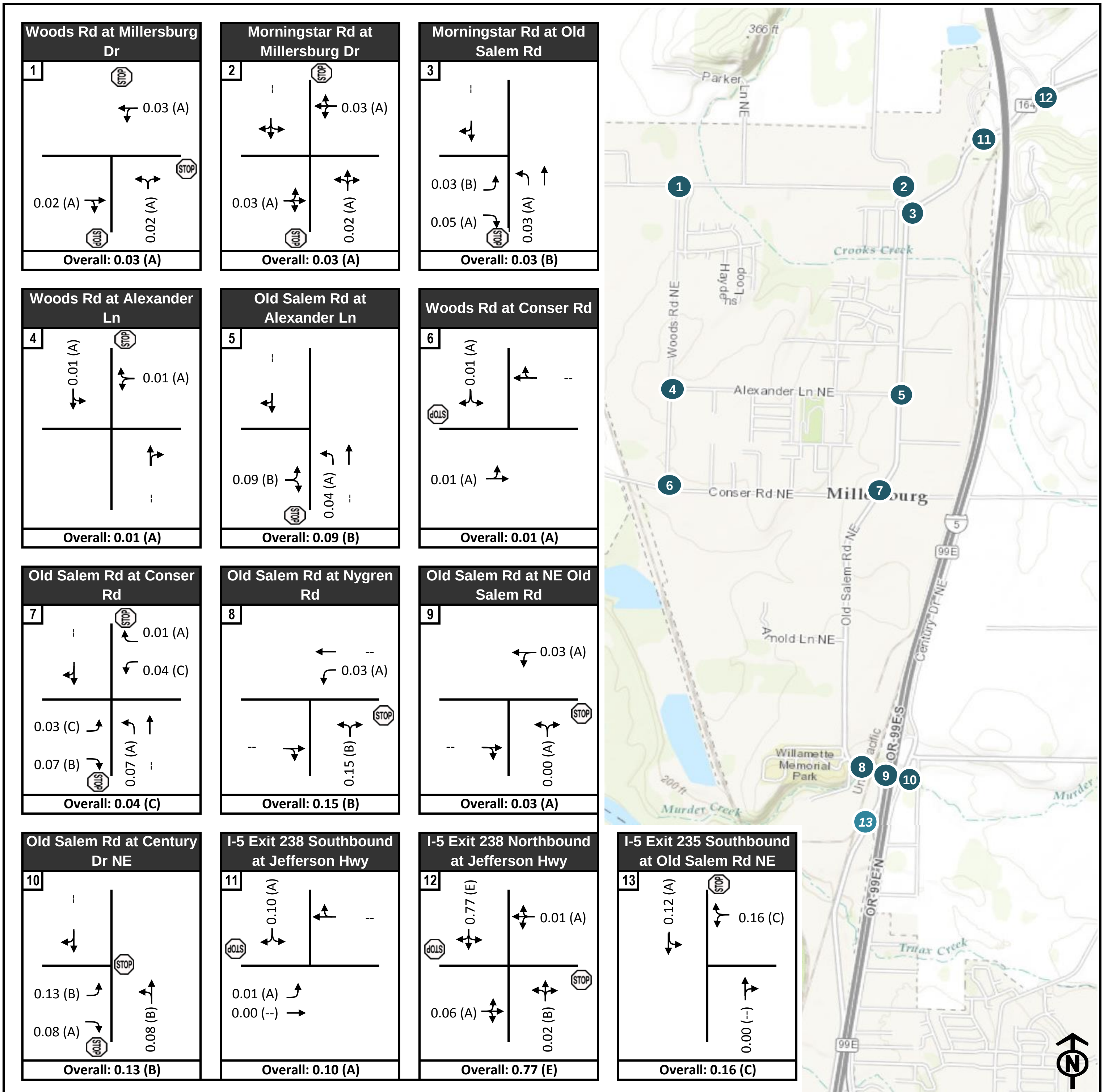
Acronyms: EB = eastbound; WB = westbound; NB = northbound; and SB = southbound. L = left; T = through; and R = right.

Notes:

1. At intersections the results are reported for all movements that must stop or yield the right of travel to other traffic flows.
2. The v/c ratios and LOS are based on the results of the macrosimulation analysis using Synchro, which cannot account for the influence of adjacent intersection operations.
3. 1999 Oregon Highway Plan (OHP), Policy 1F applies to existing and no-build conditions through the planning horizon.
4. Intersection operations from Albany Area MPO RTP

Source: David Evans and Associates, Inc.

Analysis for the PM peak period shows that all of the study area intersections currently meet applicable mobility thresholds. There is little to no congestion present at any of the study area intersections, aside from the northbound ramp terminal at I-5 Exit 238 due to the high volume of left-turning vehicles off of the ramp onto Old Salem Road.



City of Millersburg: Transportation System Plan

Legend

Lane Configureation

0.01 (A) Lane Group V/C (LOS)

Volume-to-Capacity Ratio (Level of Service)

-- Operations only reported for stopped or yielding movements

STOP Control

Intersection Number

Intersection analyzed as part of the Albany Area MPO Transportation Study

Figure 7

Existing (2015) Conditions

PM Peak Hour Traffic Operations

MillersburgTSP Transportation System Plan

Existing Multimodal System Assessment

A multimodal analysis provides a comprehensive assessment of all modes, taking into account the impact of adjacent modes of travel. The following sections review existing bicycle and pedestrian travel within the City of Millersburg.

Bicycle and Pedestrian Volumes

Bicycle and pedestrian volumes were collected at study area intersections within the City Limits. This information was collected to aide in determining existing system gaps and key locations for non-vehicular travel. Table 7 summarizes the study intersection bicycle and pedestrian volumes for the common PM Peak Hour and also for the entire three hours of PM data collected. Generally, volumes are minimal, with the intersections of Morningstar Road at Millersburg Drive and Old Salem Road at Nygren Road experiencing the majority of non-vehicular traffic.

Table 7. PM Peak Hour Bicycle and Pedestrian Volumes

Study Area Intersection	PM Peak Hour (4:45 – 5:45)		Evening Hours (4:00 – 7:00)	
	Bicycles	Pedestrians	Bicycles	Pedestrians
Woods Rd at Millersburg Dr	0	5	0	5
Morningstar Rd at Millersburg Dr	1	7	1	7
Morningstar Rd at Old Salem Rd	0	1	4	2
Woods Rd at Alexander Ln	0	0	0	0
Old Salem Rd at Alexander Ln	0	0	3	0
Woods Rd at Conser Rd	0	0	3	0
Old Salem Rd at Conser Rd	0	0	4	1
Old Salem Rd at Nygren Rd	0	1	5	2
Old Salem Rd at NE Old Salem Rd	1	2	4	2
Old Salem Rd at Century Dr NE	0	1	1	1

Note: Bicycle and pedestrian volumes at the I-5 interchange ramps were not included as part of this study

Pedestrian System Assessment

Table 8 provides a qualitative summary of performance of the study area roadways for pedestrians, using a ranking system with four categories, from poor to excellent. These rankings take into account available facilities and their widths, vehicular travel speeds, access, general conditions, and other factors that influence level of service. Pedestrian conditions are largely influenced by adjacent modes. Generally for the study area, lack of facilities equates to a poor rating, discontinuous facilities are fair, and presence of facilities with buffer is good conditions for pedestrians.

Table 8. Pedestrian Qualitative Assessment

Roadway Name	Rating
Old Salem Rd NE	Fair
Millersburg Dr	Good
Morningstar Rd NE	Poor
Alexander Ln NE	Good
Conser Rd NE	Fair
Woods Rd NE	Poor
Century Dr NE	Poor

Bicycle Level of Traffic Stress

The bicycle operations within the study area were analyzed using ODOT's methodology for Bicycle Level of Traffic Stress (LTS). LTS measures the effect of traffic-based stress on bicycles by quantifying the perceived comfort levels a bicyclist experiences on a given facility. Some characteristics used to determine LTS are presence of a bicycle lane, width of facilities, posted speed, adjacent parking facilities and land use (rural or urban).

LTS can be classified as Level 1, 2, 3 or 4, where Level 1 is low stress and Level 4 is high stress.

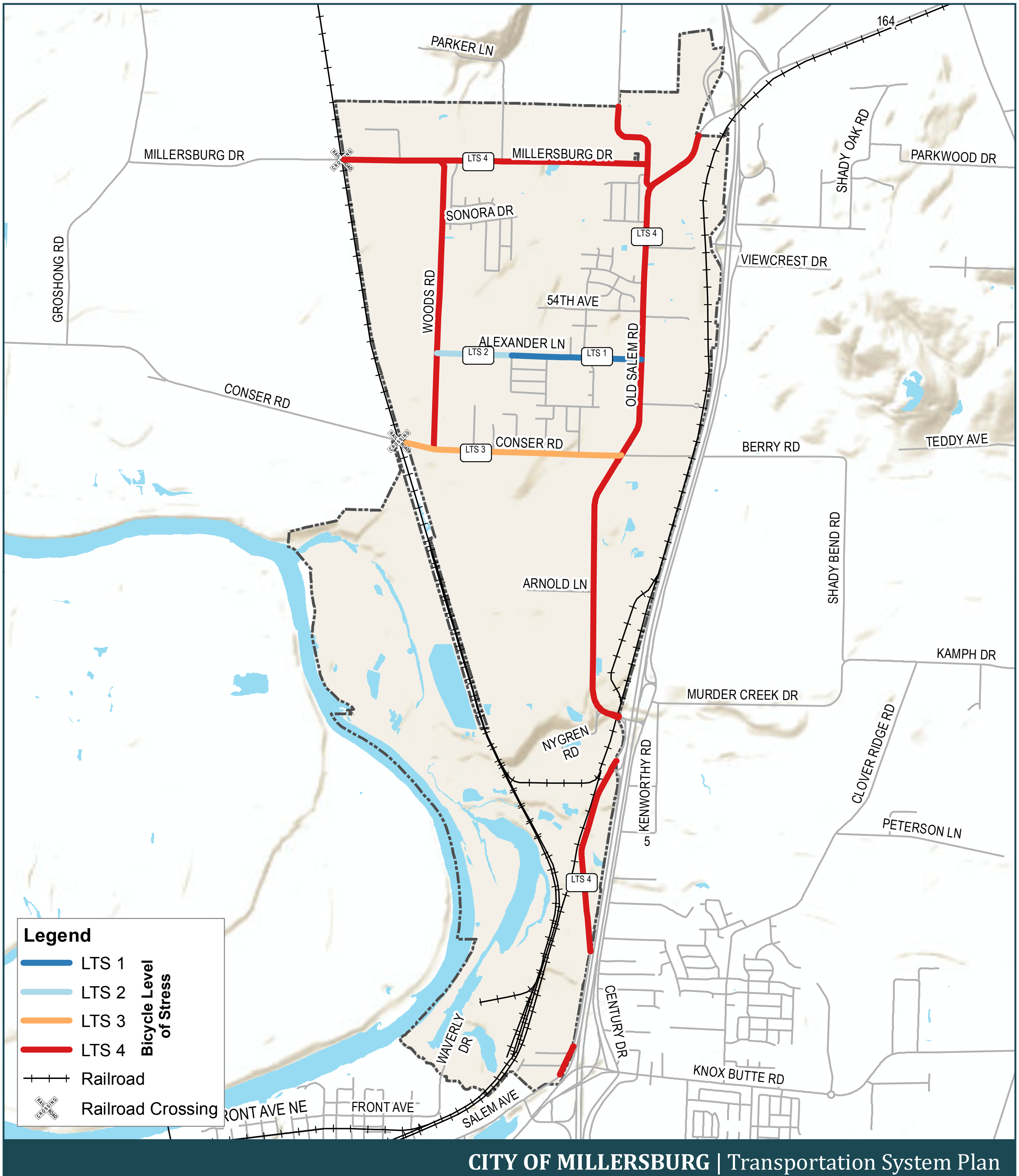
LTS Level 1: Bicyclists at this LTS level experience minimal traffic stress and is easily navigable by cyclists of low skill level.

LTS Level 2: Bicycling at this LTS level requires some level of attention and bicycle skill. Generally traffic speeds are low (neighborhood/residential).

LTS Level 3: This LTS level requires the cyclist be able to pay attention to surrounding activities and safely perceive the situation. Traffic speeds may be moderate but generally the adult cyclist feels safe riding on the facility.

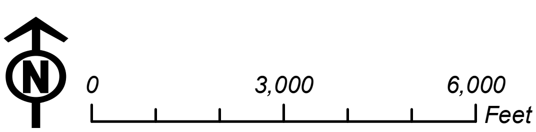
LTS Level 4: The highest level of traffic stress, these facilities generally require the cyclist be skilled and experienced. Bike lanes may not exist or the cyclist may be required to use the shoulder or share the facilities with higher speeds of vehicular traffic.

The majority of the study area roadways were measured at a LTS 4, due to lack of facilities/buffers and high vehicular speeds. A section of Alexander Lane near Millersburg Park has low stress levels which support the neighborhood setting and high presence of pedestrians. Figure 8 displays the LTS for each collector/arterial within the City of Millersburg. Background information for how the LTS was calculated is available in Appendix E.



Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

Figure 8



Bicycle Level of Stress

Safety Analysis

A safety analysis was conducted to determine whether any significant, documented safety issues exist within the management area and to inform future measures or general strategies for improving overall safety. This analysis includes a review of crash records, crash rates, and ODOT Safety Priority Index System (SPIS) data.

Crash History

The crash analysis included a review of crash history data supplied by the ODOT Crash Analysis and Reporting Unit for the period between January 1, 2009, and December 31, 2013, which were the five most recent full years for which crash data were available at the time of the analysis. The reports are contained in Appendix F.

There were 28 crashes reported within the study area during the 5-year analysis period. Of the total crashes, 17 were intersection-related while 11 occurred along Old Salem Road at various non-intersection locations. Of the reported crashes, 12 resulted in minor injury(s), and 16 resulted in property damage only; there were no fatalities. None of the crashes were bicycle or pedestrian related, however almost half (46%) of the crashes were fixed object. Generally, the fixed object crashes were due to driver error. Increased signage, striping or roadway lighting are common causes for this type of collision.

Network Screening

The Highway Safety Manual (HSM) Part B describes the critical crash rate method as a means of identifying locations that warrant further investigation. The critical crash rate is based upon average crash rates at comparable sites, traffic volume, and a confidence interval. Locations where the calculated crash rate exceeds the critical crash rate should be reviewed more closely to assess crash patterns. HSM Part B calculations are available in Appendix G.

Based on critical crash rates determined by the HSM Part B Network Screening methodology, one intersection has a crash rate exceeding the critical crash rate: Century Drive at Old Salem Road. This intersection had four total crashes during the 5-year analysis period (three turning and one rear end collision) and had a crash rate of 0.50 crashes per million entering vehicles (MEV), just exceeding the critical crash rate of 0.49 crashes per MEV. This intersection has a non-traditional STOP-control configuration in that what would normally be a free-turning northbound left-turn movement is STOP-controlled after the turn, which could contribute to the three turning-related collisions.

Safety Priority Index System (SPIS)

The SPIS is a method used in Oregon to identify safety problem areas along state highways. Highways are evaluated in approximately one-tenth mile increments (often grouped into larger segments). Each year these segments are ranked by assigning a SPIS score based on the frequency and severity crashes observed, while taking traffic volume into account. When a segment is ranked in the top 10% of the index, a crash analysis is typically warranted and corrective actions are considered. There are no segments of Interstate 5 within the study area that are identified in the top 10% of the most recent SPIS rankings.

Table 9. Crash History at Study Area Locations

Location	Collision Type								Severity[1]		Critical Crash Rate[2] (per MEV)	Observed Crash Rate (per MEV)
	Rear End	Fixed Object	Backing	Turning	Sideswipe	Head On	Bicycle/Pedestrian	Total	Minor Injury Crashes	Property Damage Only		
Intersection Crashes												
Woods Rd at Millersburg Dr	0	0	0	0	0	0	0	**0**	0	0	1.84	0.00
Old Salem Rd at Morning Star Rd	0	0	0	1	0	1	0	**2**	1	1	0.50	0.26
Woods Rd at Alexander Ln	0	0	0	0	0	0	0	**0**	0	0	1.68	0.00
Old Salem Rd at Alexander Ln	0	0	0	0	0	0	0	**0**	0	0	0.44	0.00
Woods Rd at Conser Rd	0	1	0	0	0	0	0	**1**	1	0	1.24	0.84
Old Salem Rd at Conser Rd	0	2	0	1	0	0	0	**3**	0	3	0.41[3]	0.24
Old Salem Rd at Nygren Rd	0	2	0	0	0	0	0	**2**	1	1	0.39	0.13
Old Salem Rd at I-5/Old Salem Rd	2	0	0	0	0	0	0	**2**	1	1	0.38	0.12
Old Salem Rd at Century Dr	1	0	0	3	0	0	0	**4**	2	2	0.49	**0.50**
Old Salem Rd at Arnold Ln[4]	0	1	0	0	0	0	0	**1**	0	1	--	--
Old Salem Rd at Western Way[4]	0	0	1	1	0	0	0	**2**	1	1	--	--
Subtotal Intersections	***3***	***6***	***1***	***6***	***0***	***1***	***0***	**17**	***7***	***10***		
Segment Crashes (not at Intersections)												
Old Salem Rd: Morningstar to Alexander	0	0	0	0	0	1	0	**1**	0	1	--	--
Old Salem Rd: Alexander to Conser	0	1	0	0	0	0	0	**1**	1	0	--	--
Old Salem Rd: Conser to Nygren	0	4	0	0	2	0	0	**6**	2	4	--	0.46
Old Salem Rd: Nygren to Old Salem Rd	0	0	0	0	1	0	0	**1**	1	0	--	--
Old Salem Rd: Old Salem Rd to Century	0	1	0	0	0	0	0	**1**	1	0	--	--
Morningstar Rd north of Old Salem Rd	0	1	0	0	0	0	0	**1**	0	1	--	--
Subtotal Segments	***0***	***7***	***0***	***0***	***3***	***1***	***0***	***11***	***5***	***6***		
Total	3	13	1	6	3	2	0	28	12	16		

Notes: **Bolded and Shaded** indicates a high crash rate compared to other similar intersections in the study area.

1. There were no fatal collisions recorded in the most recent 5-years of available crash data
2. Critical crash rate (per Million Entering Vehicles) calculated based on 95% confidence level
3. 90th Percentile crash rate for 4-way STOP Urban intersection from Exhibit 4-1 in the APM Version 2; There were not a sufficient number of locations with common characteristics to perform an overall network screening analysis as outlined the Highway Safety Manual, Part B.
4. Crash rates could only be calculated for intersections where traffic count data has been collected.
5. Crash rates were only calculated for segments at least 1 mile in length per APM Version 2, Section 4.2.2.

Summary of Existing Deficiencies

All of the study area intersections operate within operational standards for the existing (year 2015) scenario and the safety analysis did not identify any city-wide crash patterns. The majority of the existing deficiencies are related to network connectivity (all modes) and sub-standard roadway facilities when compared to the City's development code. The existing deficiencies are summarized in Table 10.

Table 10. Summary of Existing Deficiencies

Deficiencies	Location	
Geometry		
Cross-Sections	With the exception of Alexander Lane, all study area arterials and collectors have sub-standard cross-sections per functional classification; generally due to lack of bicycle facilities or paved curb-to-curb width.	
Pavement		
Pavement Conditions (Fair or Better)	• Old Salem Road: East of Nyberg Road • Millersburg Road: West of Woods Road • Conser Road: West of Woods Road	
Pedestrian Facilities		
Sidewalks	No Sidewalks: • Morningstar Road • Woods Road • Century Drive	Limited/Discontinuous Sidewalks: • Old Salem Road • Millersburg Drive • Conser Road
Bicycle Lanes	No Bicycle Lanes: • Old Salem Road • Morningstar Road • Woods Road • Century Drive	Limited/Discontinuous Bicycle Lanes: • Millersburg Drive
Safe Routes to School	Limited pedestrian connections and barriers (highways) between Millersburg and the closest elementary, middle and high school.	
Pedestrian Ramps	• None of the intersections in Millersburg have marked cross-walks Study intersections without pedestrian ramps: • Morningstar Road at Millersburg Drive • Woods Road at Alexander Lane • Woods Road at Conser Road • Old Salem Road at Nygren Road • Old Salem Road at NE Old Salem Road • Old Salem Road at Century Drive • All I-5 ramp terminals	
Transit		
Lack of Transit Facilities	There is no regular public transportation/transit available within the City of Millersburg	
Standards		
Traffic Operations	The City does not currently have an operational/mobility standard	
Safety		
Crash History	• Old Salem Road at Century Dr has a crash rate exceeding critical crash rate • 13 Fixed object collisions (46% of total crashes)	

Current Funding Summary

Funding data summarizing historic street System Development Charges (SDC), expenditures and street fund credits were obtained from the city for an analysis of current funding conditions. SDCs are fees collected from new development and changes in use to help the city offset the costs of impacts to the street network. Street fund history from fiscal year 2014-2015 and 2015 to-date was also available for review. The city's street fund is made up of SDCs, the State Highway Use Tax, and occasional transfers from the General Fund, when needed. Further discussion on historic funding was summarized in *Technical Memorandum #2: Review of Plans and Policies.*

CITY OF MILLERSBURG TRANSPORTATION SYSTEM PLAN

Technical Memorandum #5 APPENDICES
(Task 4.1 Evaluate Existing Conditions)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

January 2016

TABLE OF CONTENTS

Appendix A – Millersburg Street Inventory

STREET	OWNER	OWNER	ROAD MANAGER	FUNCTIONAL CLASSIFICATION	SURFACE	No. of Lanes	Paved Width	Pavement Condition	Speed	Shoulders	Bike Lanes	Sidewalk	On Street Parking
Study Area Arterial and Collector Roadways													
ALEXANDER LN NE	MILLERSBURG	CITY	MILLERSBURG	Collector	PAVED	2	24-32	Very Good	35	No	Yes	Yes	No
CENTURY DR NE	ODOT	STATE	ODOT	Collector	PAVED	2	22-25	Good	55	No	No	No	No
CONSER RD NE	CITY/LINN	CITY/COUNTY	MILLERSBURG/LINN CO.	Collector	PAVED	2	32-41	Fair/Good	35	No	Yes	Intermittent	No
MILLERSBURG DR	MILLERSBURG	CITY	MILLERSBURG	Minor Arterial	PAVED	2	22-32	Good/Fair	40	No	Yes	Yes	No
MORNINGSTAR RD NE	MILLERSBURG	CITY	MILLERSBURG	Minor Arterial	PAVED	2	22-24	Fair	40	No	No	No	No
OLD SALEM RD NE	ODOT/LINN	STATE/COUNTY	ODOT/LINN CO.	Minor Arterial	PAVED	3	40-55	Good/Fair	40-55	Yes	No	Intermittent	No
WOODS RD NE	MILLERSBURG	CITY	MILLERSBURG	Collector	PAVED	2	21-25	Good	45	No	No	No	No
Residential, Local and Private Roadways													
AZTEC LP	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
CONSER RD	LINN	COUNTY	CNTY	Local	PAVED								
COQUILLE LN	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
DANICA CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
FALCON CT	MILLERSBURG	CITY	MILLERSBURG	Residential	DIRT								
HAYDENS LP	MILLERSBURG	CITY	MILLERSBURG	Residential	DIRT								
KATELYN WAY	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
MALACHI WAY	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NAVAHO DR	MILLERSBURG	CITY	MILLERSBURG	Residential	DIRT								
NYGREN RD	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
SEDONA CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
SEDONA RD	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
SILTCOOS LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
SONORA DR	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
WAVERLY DR NE	ALBANY	CITY	ALBANY	Residential	PAVED								
ZUHLKE LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE 54TH AVE	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE 54TH AVE	MILLERSBURG	CITY	MILLERSBURG	Local	GRAVEL								
NE AMANDA LN	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE ANTHONY LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE ARNOLD LN	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE BAIN ST	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE BARKER CT	LINN	COUNTY	PUB	Local	PAVED								
NE CANYON CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE CASTILLO DR	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE CLEARWATER CT	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE CLEARWATER DR	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE COQUILLE CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE ELENA ST	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE FIR ST	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE GRANITE AVE	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE HEATHER CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE KATHRYN ST	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE KINDSEY LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE KNOX BUTTE AVE	MILLERSBURG	CITY		Local	PAVED								
NE LAUREN AVE	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE LEVI LN	MILLERSBURG	CITY	MILLERSBURG	Residential	GRAVEL								
NE LUCKIAMUTE CT	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE MARY KAY AVE	MILLERSBURG	CITY		Residential	PAVED								
NE MEGAN ST	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE MESA CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE NEHALEM AVE	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE NORTH PARK CT	MILLERSBURG	CITY		Residential	PAVED								
NE OBSIDIAN AVE	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								

STREET	OWNER	OWNER	ROAD MANAGER	FUNCTIONAL CLASSIFICATION	SURFACE	No. of Lanes	Paved Width	Pavement Condition	Speed	Shoulders	Bike Lanes	Sidewalk	On Street Parking
NE PALM HARBOR DR	MILLERSBURG	CITY		Local	PAVED								
NE PARKER LN	PRIVATE	PVT	PRIVATE	Private	GRAVEL								
NE RACHEL CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE ROSEMARIE ST	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE SABLE CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE SILETZ LN	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE SILTCOOS CT	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE STEELHEAD RUN DR	PRIVATE	PVT		Private	GRAVEL								
NE SUISLAW AVE	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE SUISLAW CT	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE TERRI LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE TONI ST	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE TUSCAN LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE UMPQUA LN	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE WAVERLY DR	LINN	COUNTY	CNTY	Local	PAVED								
NE WAVERLY DR	PRIVATE	PVT	PRIVATE	Private	PAVED								
NE WESTERN WAY	MILLERSBURG	CITY	MILLERSBURG	Local	PAVED								
NE YELLOWSTONE PL	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE YOSEMITE PL	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
NE ZUHLKE LN	MILLERSBURG	CITY	MILLERSBURG	Residential	PAVED								
SE SALEM AVE	LINN	COUNTY	CNTY	Local	PAVED								

Appendix B – Analysis Methodology Memorandum

MEMORANDUM

DATE: November 24, 2015

TO: Christina McDaniel-Wilson, TPAU

FROM: Shelly Alexander, David Evans and Associates, Inc.
Angela Rogge, David Evans and Associates, Inc.

SUBJECT: **City of Millersburg Transportation System Plan**
Traffic Analysis Methodology Memorandum

This memorandum summarizes the approach for collection and evaluation of information that the City of Millersburg Transportation System Plan (TSP) will use for traffic analysis purposes. The study area includes the City of Millersburg within the City Limits and the Urban Growth Boundary (UGB). This area is on the west side of I-5 and north of the City of Albany.

Volume Development

Study Area Intersections

The TSP includes 13 intersections for analysis (**Analyzed as part of the Albany Area MPO Project)*:

1. Woods Rd at Millersburg Dr
2. Morningstar Rd at Millersburg Dr
3. Morningstar Rd at Old Salem Rd
4. Woods Rd at Alexander Ln
5. Woods Rd at Conser Rd
6. Old Salem Rd at Alexander Ln
7. Old Salem Rd at Conser Rd
8. Old Salem Rd at Nygren Rd
9. Old Salem Rd at NE Old Salem Rd (Near Exit 235)
10. Old Salem Rd at I-5 Exit 235 Southbound Ramps
11. Century Dr at I-5 Exit 235 Northbound Ramps*
12. Jefferson Hwy at I-5 Exit 238 Southbound Ramps*
13. Jefferson Hwy at I-5 Exit 238 Northbound Ramps*

Traffic Data Collection

The transportation and traffic analysis will be based on existing year 2015 conditions for the existing 30th highest hour and future design hour volumes.

The Consultant shall assemble year 2015 manual 3-hour (3:00-6:00 PM) turning movement classification counts for the study area intersections. These counts were collected on Thursday, May 21, 2015.

Existing Volumes

The existing volumes will be determined from the existing weekday counts and adjusted to 30th highest hour volumes following the methodologies outlined in the ODOT Transportation Planning and Analysis Unit's (TPAU) *Analysis Procedures Manual* (APM) *Volume 2*.

30th Highest Hour Volumes

Data for existing weekday counts will be reviewed to determine which PM hour is the highest traffic demand hour for the study area. The 30th highest hour volumes will be calculated by applying a seasonal adjustment factor to the volumes in the system peak hour.

System Peak Hour Selection

A single system peak hour will be used for analysis purposes. Turning movements, peak hour factors, vehicle classification, and other data describing demand in the study area will be derived for this PM system peak hour. Traffic counts will be reviewed in 15-minute intervals to determine the true peak hour for the entire study area. The final selection of a peak hour will be based on a simple majority of counts that have the same peak hour, with attention paid to Old Salem Road intersections and I-5 ramp terminals.

Seasonal Adjustment Factors

Since traffic counts are taken during various times of the year, data from varying months may need to be converted to peak month equivalents using calculated seasonal adjustment factors. TPAU has three methods for developing seasonal factors: On-Site ATR Method, ATR Characteristic Table Method, and ATR Seasonal Trend Table Method. There are no ATRs in the study area and the study area roadways are not representative of the state highway system, thus the Seasonal Trend Method was used to develop seasonal factors for the Millersburg TSP.

I-5 Ramp Terminals and Old Salem Road

Old Salem Road is the main north-south route through the study area and runs adjacent and parallel to I-5. Of the study area roadways, Old Salem Road is the most likely to serve non-local trips. The seasonal factor for traffic associated with Old Salem Road and the I-5 Ramp Terminals was calculated by using the Seasonal Trend Method and averaging the factors for commuter and summer trends.

Local Traffic

The seasonal factors for traffic moving within the local street network was calculated based on the count date using the ATR Seasonal Trend Method for a commuter route.

SEASONAL FACTORS	**I-5 Ramps and Old Salem Road** *Seasonal Trend Method: Average of Commuter and Summer Trends*	**Local Traffic** *Seasonal Trend Method: Commuter Trend*
May 21, 2015	1.08	1.03

Rounding and Balancing

After the seasonal factors are applied, the volumes are rounded to the nearest five vehicles, input into Synchro and balanced accordingly. For conservative analysis, it is preferable to add traffic to the system instead of remove. This approach is taken whenever possible. Volume imbalances between intersections are managed to represent the volumes into and out of residential developments and commercial lots between study area intersections, whenever applicable.

Existing Peak Hour Factor

For the existing analysis, the peak hour factor (PHF) will be calculated based on the common peak hour and data available from the traffic counts. The intersection PHF will be used unless unusual peaking is observed at individual approaches, in which case the PHF for each approach will be used.

Future Design Year 2040 Volumes

Forecast (year 2040) traffic volumes will be developed at count locations using the Corvallis Albany Lebanon Model (CALM) output and will be consistent with the projections of the MPO.

NCHRP 765 Methodology

Consultant shall post-process (on a link-basis) model volumes using the National Cooperative Highway Research Program Report (NCHRP) 765 guidelines in order to create future baseline 2040 traffic volumes. Consultant shall develop PM peak hour volumes for the scenario in accordance with ODOT's APM:

- Existing 30th highest design hour volumes (DHV) will be used as base volumes
- Determine future DHV using the Growth Method and the Difference (Incremental) Method
- Evaluate reasonableness of methods for each link location; areas with larger percent and absolute differences (greater than 10%) should use the difference method

Once the link volumes are adjusted, they will be converted into turning movement volumes at intersections.

Rounding and Balancing

The future DHVs will be rounded to the nearest five vehicles. Once the volumes are rounded, the network will be balanced.

Future Peak Hour Factor

The following default values outlined in the *ODOT APM Volume 2* will be used by approach for the PHF unless better information is available:

- 0.85 for minor street inflows and outflows
- 0.90 for minor arterials
- 0.95 for major streets

Evaluation Comparison Tools

Tools and techniques used to evaluate and compare the alternatives include traffic operations analysis tools for more detailed assessment of area conditions. Due to the potential latent demand shifts, the future baseline model volumes will be compared with the alternative model volumes and adjustment factors created and used as needed.

Traffic Operations Standards

The City does not currently have adopted operational standards in place for analyzing intersections. For signalized and all-way stop controlled intersections, level of service (LOS) “D” or better (representing no more than 55 seconds of average delay) is commonly considered acceptable operations. For two-way stop controlled intersections, a volume-to-capacity (v/c) ratio of up to 0.85 is generally considered to be acceptable operations.

For the I-5 Ramp Terminals, the Oregon Highway Plan (OHP) and the Highway Design Manual (HDM) will be used in the assessment of intersection operations. Both documents base their mobility performance on the calculation of v/c ratios; however, the standards in the HDM are based on higher performance levels than those in the OHP. The mobility targets from the OHP will be applied to the existing and future baseline (no build) analysis while the standards from the HDM will be applied to the evaluation of design alternatives.

Arterial and Intersection Operations

The operational analysis will evaluate v/c ratios and LOS using the Synchro/SimTraffic software program as outlined in the APM. Throughout the analysis process, TPAU and Region 2 Traffic staff will review modeling assumptions, analysis settings, and other assumptions to help ensure consistency of data with other studies under way.

An assessment of adding traffic signals may be needed. Any assessments of new traffic signals will use ODOT’s preliminary signal warrant spreadsheets. Operational analysis results will be compared with applicable mobility standards, and specific recommendations for mitigation improvements needed to meet standards must be identified and verified by TPAU and Region 2 Traffic.

Traffic Operations Analysis Procedures

All operations will be evaluated using the methodology outlined in the *2000 and 2010 Highway Capacity Manual*s (HCM) along with the procedures outlined in the APM. For signalized intersections, operations will be reported using HCM 2000, while HCM 2010 will be used for unsignalized intersections. The Synchro/SimTraffic analysis software was selected to perform the intersection analysis since it can provide the v/c ratio and LOS output of an HCM analysis and consider the systematic interaction of the intersections with regard to queuing and delays.

Crash History Analysis

Crash data within the study area will be obtained from the ODOT Crash Analysis and Reporting Unit for the most recent five complete years. The most recent Safety Priority Index System (“SPIS”) data will be obtained as well. Data will be requested for study area intersections and both state and non-state arterials and collectors within the City of Millersburg.

The study area evaluation will include an analysis of the most recent five-year crash history on state and non-state roadways at count locations and arterial and collector segments between count locations. This analysis screens for patterns amongst the crashes that are indicative of existing geometric or operational deficiencies. The Highway Safety Manual Part B Network Screening Probability of Specific Crash Types Exceeding Threshold Proportions method will be used in the screening process where sufficient reference populations are available. Based on the crash patterns, the analysis may identify improvements for the build alternatives that could mitigate safety issues. ODOT SPIS locations (if applicable) will be included in the crash history.

Intersection crash rates will be calculated for each study area intersection and compared against the published 90th Percentile rates in the APM (Version 2). If there are enough ADT volumes available, the critical crash rate will be calculated.

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Peak Period Seasonal Factor
2015 SEASONAL TREND TABLE (Updated: 11/09/15)																									
INTERSTATE URBANIZED	1.0354	1.0413	1.0201	0.9989	0.9830	0.9672	0.9579	0.9486	0.9527	0.9567	0.9381	0.9195	0.9220	0.9266	0.9215	0.9164	0.9352	0.9539	0.9565	0.9589	0.9775	0.9960	1.0119	1.0277	0.9164
INTERSTATE NONURBANIZED	1.2439	1.3049	1.2574	1.2100	1.1401	1.0701	1.0599	1.0496	1.0241	0.9986	0.9501	0.9016	0.8748	0.8438	0.8431	0.8425	0.8920	0.9416	0.9820	1.0224	1.0449	1.0675	1.1177	1.1679	0.8425
COMMUTER	1.0496	1.0551	1.0313	1.0074	0.9956	0.9838	0.9651	0.9465	0.9434	0.9403	0.9495	0.9586	0.9409	0.9239	0.9194	0.9149	0.9276	0.9402	0.9425	0.9446	0.9731	1.0016	1.0239	1.0463	0.9149
COASTAL DESTINATION	1.2026	1.2084	1.1729	1.1374	1.1039	1.0705	1.0686	1.0668	1.0441	1.0214	0.9840	0.9465	0.8933	0.8286	0.8273	0.8260	0.8771	0.9283	0.9852	1.0421	1.0991	1.1560	1.1766	1.1972	0.8260
COASTAL DESTINATION ROUTE	1.4607	1.4921	1.4221	1.3521	1.2817	1.2114	1.2020	1.1926	1.1319	1.0712	1.0110	0.9509	0.8643	0.7555	0.7552	0.7549	0.8330	0.9111	1.0208	1.1305	1.2110	1.2915	1.3498	1.4080	0.7549
AGRICULTURE	1.2495	1.2659	1.2218	1.1778	1.1386	1.0994	1.0579	1.0165	0.9771	0.9378	0.9092	0.8807	0.8642	0.8445	0.8412	0.8380	0.8419	0.8459	0.8791	0.9123	0.9800	1.0477	1.1405	1.2332	0.8380
RECREATIONAL SUMMER	1.7234	1.7892	1.7314	1.6737	1.5620	1.4504	1.3916	1.3329	1.1751	1.0174	0.9368	0.8563	0.7953	0.7218	0.7327	0.7436	0.8027	0.8618	0.9653	1.0688	1.2301	1.3915	1.5047	1.6180	0.7218
RECREATIONAL SUMMER WINTER	1.1753	1.2460	1.2580	1.2699	1.2940	1.3182	1.4411	1.5640	1.5262	1.4884	1.2854	1.0826	0.9657	0.8120	0.8456	0.8793	1.0312	1.1831	1.4133	1.6219	1.7084	1.7733	1.4489	1.1245	0.8120
RECREATIONAL WINTER	0.9698	0.9363	0.9427	0.9491	0.9747	1.0002	1.2456	1.4910	1.8800	2.2689	1.9669	1.6650	1.4562	1.1365	1.1639	1.1912	1.3347	1.4782	1.7869	2.0956	2.4558	2.8160	1.9444	1.0729	0.9363
SUMMER	1.2080	1.2355	1.1988	1.1622	1.1230	1.0838	1.0548	1.0258	0.9932	0.9607	0.9257	0.8907	0.8658	0.8350	0.8379	0.8407	0.8779	0.9152	0.9494	0.9836	1.0382	1.0929	1.1341	1.1753	0.8350
SUMMER < 2500	1.2981	1.3274	1.2867	1.2461	1.1836	1.1211	1.0715	1.0218	0.9712	0.9206	0.8897	0.8588	0.8385	0.8142	0.8233	0.8324	0.8482	0.8639	0.9022	0.9405	1.0159	1.0913	1.1759	1.2606	0.8142

***Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.**
***Grey shading indicates months were seasonal factor is greater than 30%**

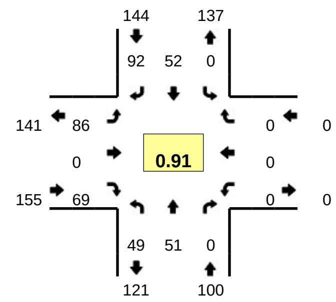
	15-May	Interpolated 21-May	1-Jun	Peak Period	Seasonal Factor
Commuter	0.9403	0.9436	0.9495	0.9149	1.031367
Summer	0.9607	0.9483	0.9257	0.8350	1.135685

City of Millersburg Seasonal Factors	
Local Intersections (Commuter Trend):	1.03
Old Salem Road and I-5 Intersections (Average of Commuter and Summer):	1.08

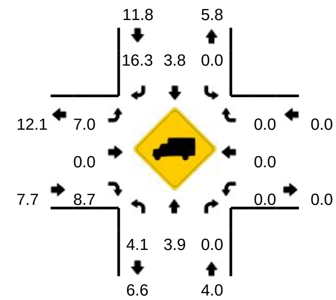
Appendix C – Existing Traffic Volume Development

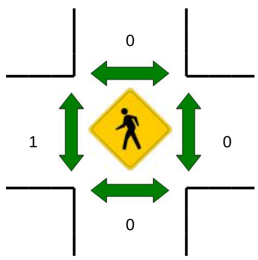
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

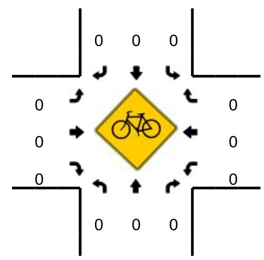
LOCATION: Century Dr NE -- Old Salem Rd NE | **QC JOB #:** 13389901
CITY/STATE: Albany, OR | **DATE:** Thu, May 21 2015

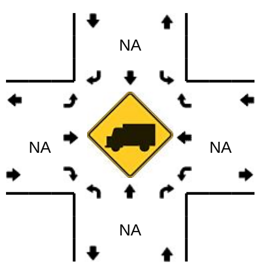


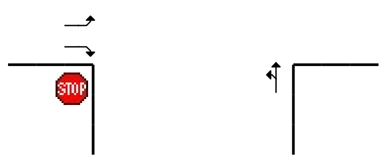
Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

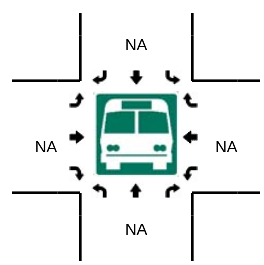












5-Min Count Period Beginning At	Century Dr NE (Northbound) Left	Thru	Right	U	Century Dr NE (Southbound) Left	Thru	Right	U	Old Salem Rd NE (Eastbound) Left	Thru	Right	U	Old Salem Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:10 PM	2	7	0	0	0	3	9	0	5	0	0	0	0	0	0	0	26	
4:15 PM	2	5	0	0	0	3	11	0	7	0	5	0	0	0	0	0	33	
4:20 PM	5	2	0	0	0	3	10	0	5	0	1	0	0	0	0	0	26	
4:25 PM	6	5	0	0	0	3	9	0	4	0	2	0	0	0	0	0	29	
4:30 PM	4	3	0	0	0	2	13	0	13	0	3	0	0	0	0	0	38	
4:35 PM	7	1	0	0	0	3	9	0	9	0	1	0	0	0	0	0	30	
4:40 PM	1	5	0	0	0	1	6	0	3	0	4	0	0	0	0	0	20	
4:45 PM	5	3	0	0	0	4	10	0	6	0	5	0	0	0	0	0	33	
4:50 PM	1	4	0	0	0	7	7	0	5	0	7	0	0	0	0	0	31	
4:55 PM	5	2	0	0	0	2	12	0	8	0	6	0	0	0	0	0	35	387
5:00 PM	5	5	0	0	0	3	3	0	6	0	5	0	0	0	0	0	27	373
5:05 PM	3	3	0	0	0	7	8	0	8	0	8	0	0	0	0	0	37	365
5:10 PM	5	8	0	0	0	5	8	0	7	0	3	0	0	0	0	0	36	375
5:15 PM	4	6	0	0	0	4	4	0	9	0	7	0	0	0	0	0	34	376
5:20 PM	4	4	0	0	0	6	12	0	7	0	7	0	0	0	0	0	40	390
5:25 PM	2	2	0	0	0	7	6	0	7	0	9	0	0	0	0	0	33	394
5:30 PM	8	5	0	0	0	3	7	0	9	0	3	0	0	0	0	0	35	391
5:35 PM	6	4	0	0	0	3	9	0	11	0	5	0	0	0	0	0	38	399
5:40 PM	1	6	0	0	0	1	4	0	3	0	4	0	0	0	0	0	19	398
5:45 PM	3	6	0	0	0	2	8	0	4	0	2	0	0	0	0	0	25	390
5:50 PM	3	1	0	0	0	4	11	0	2	0	6	0	0	0	0	0	27	386
5:55 PM	0	4	0	0	0	5	5	0	6	0	4	0	0	0	0	0	24	375
6:00 PM	5	6	0	0	0	2	7	0	6	0	4	0	0	0	0	0	30	378
6:05 PM	4	1	0	0	0	2	11	0	4	0	7	0	0	0	0	0	29	370

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	52	72	0	0	0	60	96	0	92	0	68	0	0	0	0	0	440
Heavy Trucks	0	4	0		0	0	24		4	0	0		0	0	0		32
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: all legs

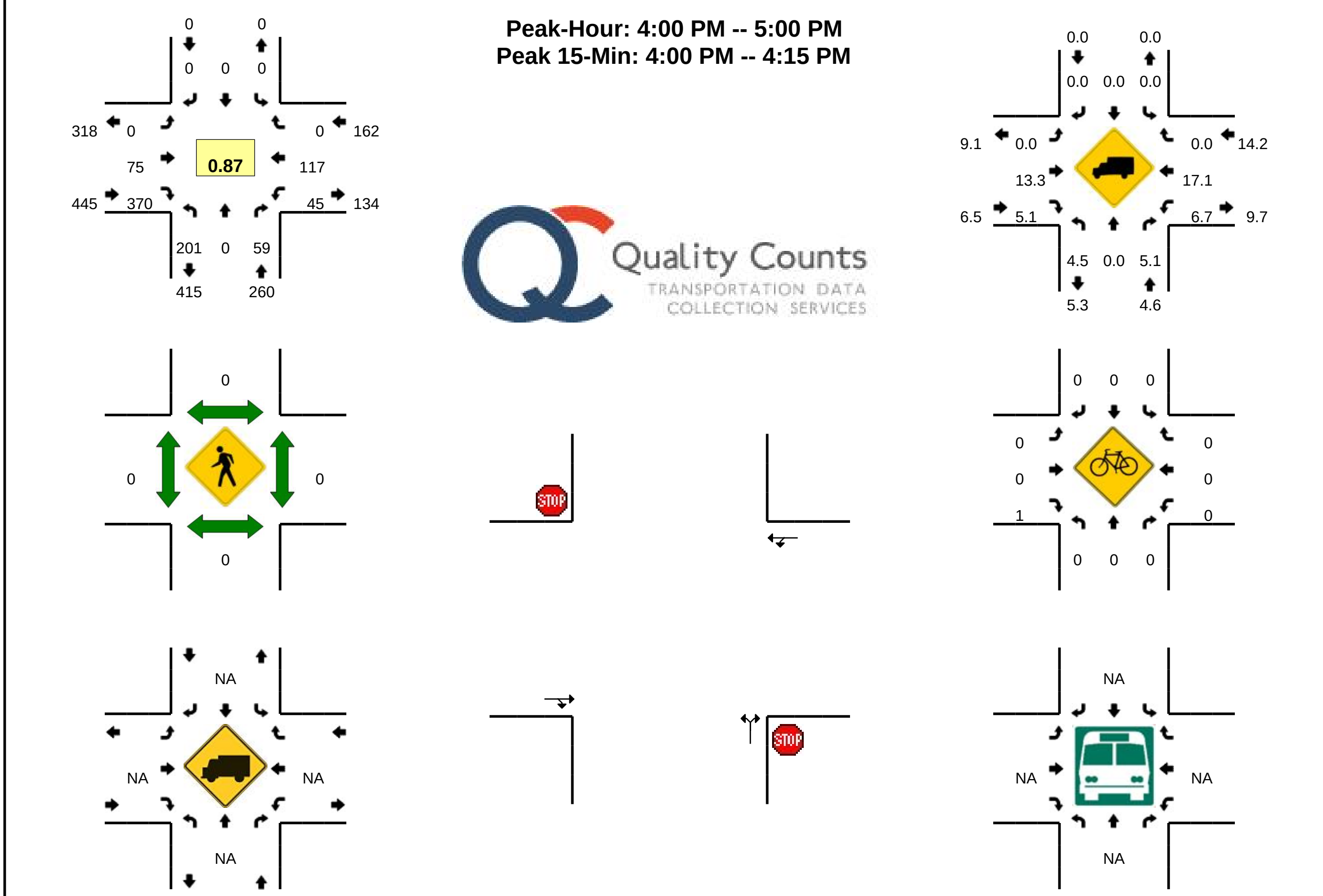
Report generated on 5/28/2015 4:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Old Salem Rd NE -- I-5/Old Salem Rd NE | **QC JOB #:** 13389902

CITY/STATE: Albany, OR | **DATE:** Thu, May 21 2015

Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM



5-Min Count Period Beginning At	Old Salem Rd NE (Northbound) Left	Thru	Right	U	Old Salem Rd NE (Southbound) Left	Thru	Right	U	I-5/Old Salem Rd NE (Eastbound) Left	Thru	Right	U	I-5/Old Salem Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	18	0	3	0	0	0	0	0	0	11	41	0	1	16	0	0	90	
4:05 PM	16	0	11	0	0	0	0	0	0	12	44	0	2	10	0	0	95	
4:10 PM	21	0	3	0	0	0	0	0	0	2	28	0	1	8	0	0	63	
4:15 PM	13	0	7	0	0	0	0	0	0	7	35	0	5	9	0	0	76	
4:20 PM	15	0	3	0	0	0	0	0	0	2	27	0	5	10	0	0	62	
4:25 PM	16	0	1	0	0	0	0	0	0	5	28	0	8	7	0	0	65	
4:30 PM	24	0	13	0	0	0	0	0	0	3	26	0	7	10	0	0	83	
4:35 PM	19	0	6	0	0	0	0	0	0	4	25	0	5	11	0	0	70	
4:40 PM	7	0	1	0	0	0	0	0	0	4	36	0	3	5	0	0	56	
4:45 PM	14	0	4	0	0	0	0	0	0	7	28	0	2	13	0	0	68	
4:50 PM	20	0	3	0	0	0	0	0	0	8	23	0	3	5	0	0	62	
4:55 PM	18	0	4	0	0	0	0	0	0	10	29	0	3	13	0	0	77	867
5:00 PM	9	0	5	0	0	0	0	0	0	6	44	0	1	7	0	0	72	849
5:05 PM	18	0	7	0	0	0	0	0	0	9	44	0	0	11	0	0	89	843
5:10 PM	20	0	6	0	0	0	0	0	0	4	41	0	2	11	0	0	84	864
5:15 PM	18	0	8	0	0	0	0	0	0	7	28	0	0	8	0	0	69	857
5:20 PM	11	0	5	0	0	0	0	0	0	8	20	0	4	14	0	0	62	857
5:25 PM	16	0	9	0	0	0	0	0	0	8	17	0	2	7	0	0	59	851
5:30 PM	19	0	5	0	0	0	0	0	0	6	22	0	1	14	0	0	67	835
5:35 PM	23	0	13	0	0	0	0	0	0	3	25	0	1	13	0	0	78	843
5:40 PM	20	0	4	0	0	0	0	0	0	2	30	0	4	3	0	0	63	850
5:45 PM	20	0	4	0	0	0	0	0	0	2	24	0	5	5	0	0	60	842
5:50 PM	16	0	4	0	0	0	0	0	0	4	26	0	1	13	0	0	64	844
5:55 PM	9	0	8	0	0	0	0	0	0	2	20	0	0	6	0	0	45	812

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	220	0	68	0	0	0	0	0	0	100	452	0	16	136	0	0	992
Heavy Trucks	8	0	4		0	0	0		0	8	8		0	12	0		40
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

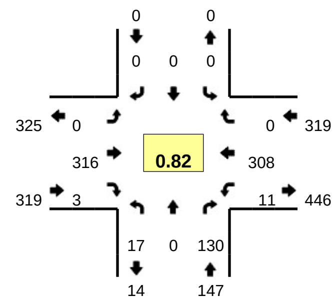
Report generated on 5/28/2015 4:19 PM

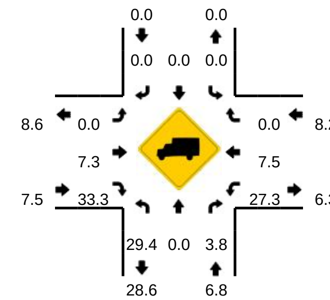
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

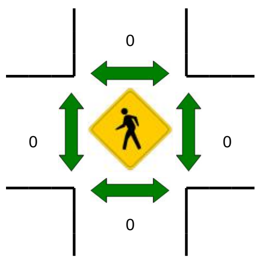
Type of peak hour being reported: Intersection Peak　Method for determining peak hour: Total Entering Volume

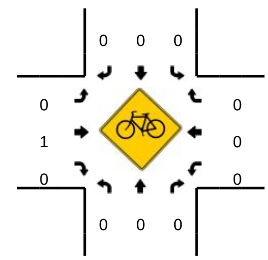
LOCATION: NE Nygren Rd -- Old Salem Rd NE　**QC JOB #:** 13389903
CITY/STATE: Millersburg, OR　**DATE:** Thu, May 21 2015

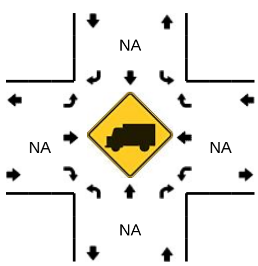
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

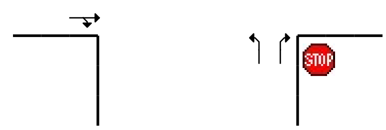


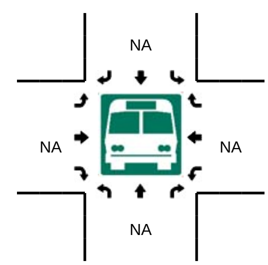












5-Min Count Period Beginning At	NE Nygren Rd (Northbound) Left	Thru	Right	U	NE Nygren Rd (Southbound) Left	Thru	Right	U	Old Salem Rd NE (Eastbound) Left	Thru	Right	U	Old Salem Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	4	0	31	0	0	0	0	0	0	21	0	0	0	36	0	0	92	
4:05 PM	2	0	34	0	0	0	0	0	0	23	1	0	3	22	0	0	85	
4:10 PM	0	0	8	0	0	0	0	0	0	23	0	0	0	30	0	0	61	
4:15 PM	0	0	10	0	0	0	0	0	0	31	0	0	1	21	0	0	63	
4:20 PM	2	0	4	0	0	0	0	0	0	25	0	0	0	24	0	0	55	
4:25 PM	5	0	9	0	0	0	0	0	0	23	0	0	0	25	0	0	62	
4:30 PM	1	0	4	0	0	0	0	0	0	23	1	0	1	30	0	0	60	
4:35 PM	1	0	3	0	0	0	0	0	0	29	0	0	2	29	0	0	64	
4:40 PM	1	0	8	0	0	0	0	0	0	29	0	0	0	13	0	0	51	
4:45 PM	0	0	6	0	0	0	0	0	0	29	0	0	2	23	0	0	60	
4:50 PM	1	0	5	0	0	0	0	0	0	26	1	0	1	26	0	0	60	
4:55 PM	0	0	8	0	0	0	0	0	0	34	0	0	1	29	0	0	72	785
5:00 PM	0	0	9	0	0	0	0	0	0	39	0	0	1	13	0	0	62	755
5:05 PM	0	0	13	0	0	0	0	0	0	44	0	0	1	29	0	0	87	757
5:10 PM	1	0	6	0	0	0	0	0	0	35	1	0	2	30	0	0	75	771
5:15 PM	0	0	8	0	0	0	0	0	0	26	1	0	3	24	0	0	62	770
5:20 PM	0	0	2	0	0	0	0	0	0	28	0	0	2	23	0	0	55	770
5:25 PM	0	0	1	0	0	0	0	0	0	24	0	0	3	18	0	0	46	754
5:30 PM	0	0	5	0	0	0	0	0	0	21	0	0	3	29	0	0	58	752
5:35 PM	0	0	5	0	0	0	0	0	0	25	1	0	4	32	0	0	67	755
5:40 PM	0	0	1	0	0	0	0	0	0	32	1	0	1	21	0	0	56	760
5:45 PM	0	0	4	0	0	0	0	0	0	23	1	0	3	21	0	0	52	752
5:50 PM	0	0	3	0	0	0	0	0	0	26	0	0	3	28	0	0	60	752
5:55 PM	0	0	5	0	0	0	0	0	0	16	1	0	0	14	0	0	36	716

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	24	0	292	0	0	0	0	0	0	268	4	0	12	352	0	0	952
Heavy Trucks	0	0	0		0	0	0		0	8	4		0	20	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

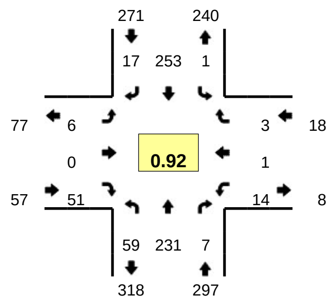
Comments: all legs

Report generated on 5/28/2015 4:19 PM　SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

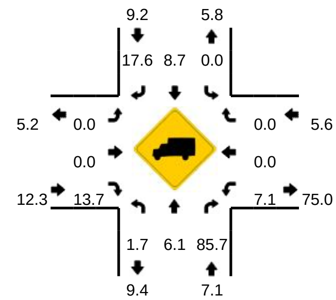
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

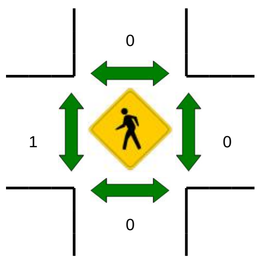
LOCATION: Old Salem Rd NE -- Conser Rd NE | **QC JOB #:** 13389904

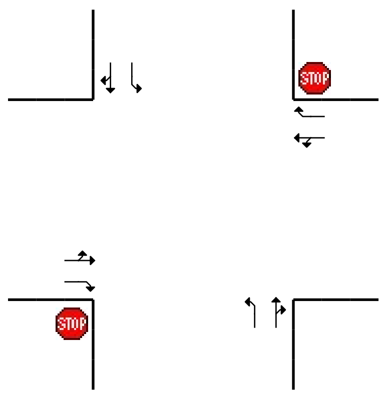
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

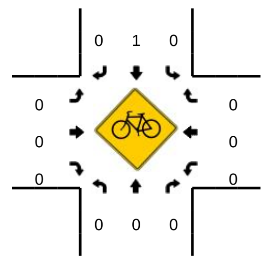


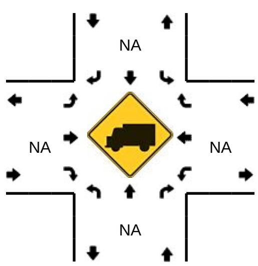
Peak-Hour: 4:10 PM -- 5:10 PM
Peak 15-Min: 4:55 PM -- 5:10 PM

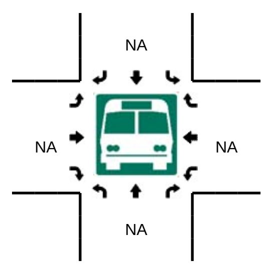












5-Min Count Period Beginning At	Old Salem Rd NE (Northbound) Left	Thru	Right	U	Old Salem Rd NE (Southbound) Left	Thru	Right	U	Conser Rd NE (Eastbound) Left	Thru	Right	U	Conser Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	12	22	2	0	0	15	2	0	1	0	6	0	0	0	0	0	60	
4:05 PM	8	23	1	0	0	20	1	0	0	0	0	0	0	0	0	0	53	
4:10 PM	4	26	1	0	0	24	0	0	0	0	2	0	2	0	1	0	60	
4:15 PM	3	15	0	0	0	22	2	0	2	0	7	0	0	0	0	0	51	
4:20 PM	4	20	0	0	1	18	1	0	1	0	5	0	2	0	0	0	52	
4:25 PM	5	24	0	0	0	18	2	0	0	0	3	0	1	0	0	0	53	
4:30 PM	4	25	0	0	0	19	1	0	0	0	4	0	0	0	0	0	53	
4:35 PM	5	21	1	0	0	16	1	0	0	0	6	0	0	0	0	0	50	
4:40 PM	3	14	1	0	0	25	1	0	0	0	5	0	0	0	0	0	49	
4:45 PM	4	19	0	0	0	17	3	0	1	0	4	0	0	0	0	0	48	
4:50 PM	7	16	1	0	0	18	4	0	1	0	4	0	2	0	0	0	53	
4:55 PM	10	20	0	0	0	18	0	0	0	0	4	0	3	0	2	0	57	639
5:00 PM	3	6	2	0	0	26	1	0	0	0	5	0	2	1	0	0	46	625
5:05 PM	7	25	1	0	0	32	1	0	1	0	2	0	2	0	0	0	71	643
5:10 PM	6	14	0	0	0	27	2	0	2	0	3	0	0	0	0	0	54	637
5:15 PM	5	28	0	0	0	17	2	0	2	0	3	0	0	0	0	0	57	643
5:20 PM	5	15	1	0	0	22	0	0	0	0	4	0	2	0	0	0	49	640
5:25 PM	4	14	0	0	0	16	0	0	1	0	3	0	0	0	0	0	38	625
5:30 PM	7	26	0	0	0	22	2	0	1	0	2	0	0	0	1	0	61	633
5:35 PM	3	22	0	0	0	17	2	0	2	0	1	0	0	1	0	0	48	631
5:40 PM	6	21	0	0	0	24	0	0	0	0	5	0	0	0	0	0	56	638
5:45 PM	4	15	1	0	0	16	2	0	2	0	6	0	0	0	0	0	46	636
5:50 PM	4	24	1	0	0	17	0	0	0	0	6	0	0	0	0	0	52	635
5:55 PM	5	11	1	0	0	13	3	0	0	0	3	0	0	0	0	0	36	614

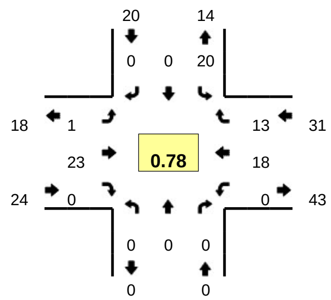
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	80	204	12	0	0	304	8	0	4	0	44	0	28	4	8	0	696
Heavy Trucks	0	0	12		0	20	0		0	0	12		0	0	0		44
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

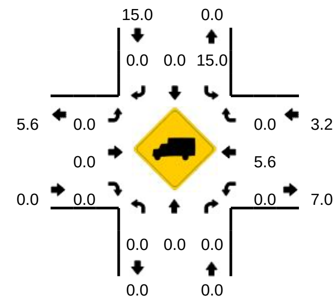
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

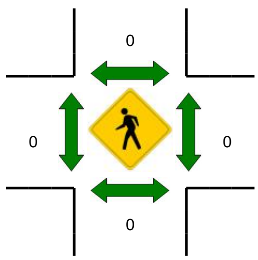
LOCATION: Woods Rd NE -- Conser Rd NE | **QC JOB #:** 13389905

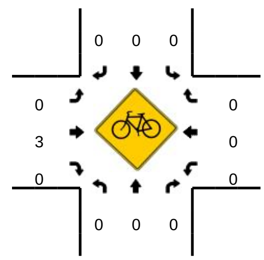
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

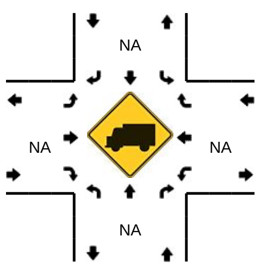


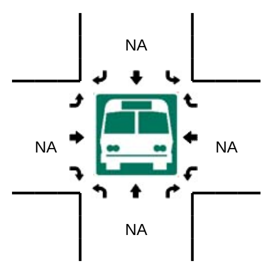
Peak-Hour: 5:45 PM -- 6:45 PM
Peak 15-Min: 6:10 PM -- 6:25 PM











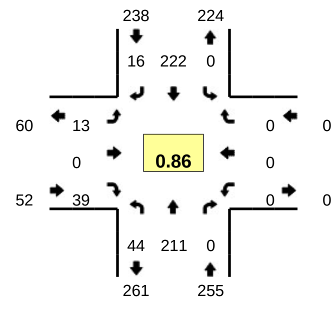
5-Min Count Period Beginning At	Woods Rd NE (Northbound) Left	Thru	Right	U	Woods Rd NE (Southbound) Left	Thru	Right	U	Conser Rd NE (Eastbound) Left	Thru	Right	U	Conser Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
5:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	67
5:05 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	4	62
5:10 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	2	1	0	6	62
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	5	60
5:20 PM	0	0	0	0	1	0	0	0	1	0	0	0	0	1	1	0	4	60
5:25 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3	0	5	62
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	2	3	0	6	66
5:35 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	4	64
5:40 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	3	1	0	6	66
5:45 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	2	0	0	5	63
5:50 PM	0	0	0	0	3	0	0	0	0	1	0	0	0	1	2	0	7	65
5:55 PM	0	0	0	0	4	0	0	0	0	0	0	0	0	0	2	0	6	62
6:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	3	1	0	6	64
6:05 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	3	63
6:10 PM	0	0	0	0	1	0	0	0	0	5	0	0	0	4	3	0	13	70
6:15 PM	0	0	0	0	2	0	0	0	0	2	0	0	0	0	1	0	5	70
6:20 PM	0	0	0	0	1	0	0	0	0	2	0	0	0	1	2	0	6	72
6:25 PM	0	0	0	0	1	0	0	0	1	2	0	0	0	0	1	0	5	72
6:30 PM	0	0	0	0	2	0	0	0	0	1	0	0	0	1	0	0	4	70
6:35 PM	0	0	0	0	2	0	0	0	0	4	0	0	0	1	0	0	7	73
6:40 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0	0	8	75
6:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	2	0	5	75
6:50 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	1	2	0	7	75
6:55 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	3	72

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	0	0	16	0	0	0	0	36	0	0	0	20	24	0	96
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

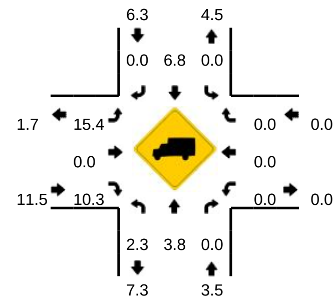
Comments:

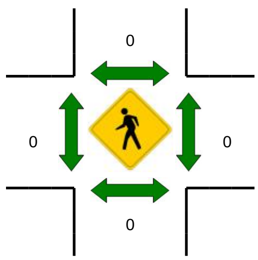
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

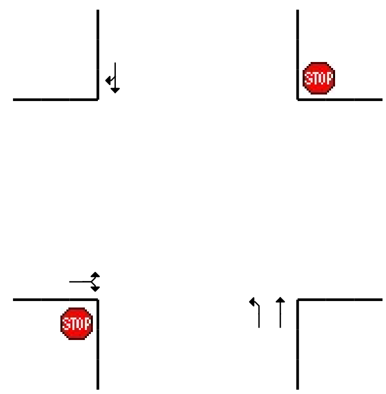
LOCATION: Old Salem Rd NE -- Alexander Ln NE | **QC JOB #:** 13389906
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

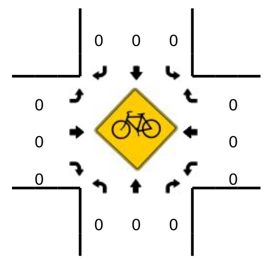


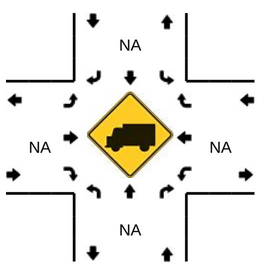
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

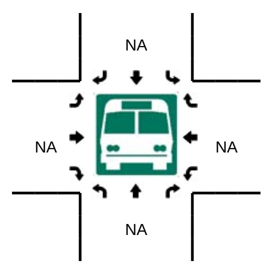












5-Min Count Period Beginning At	Old Salem Rd NE (Northbound) Left	Thru	Right	U	Old Salem Rd NE (Southbound) Left	Thru	Right	U	Alexander Ln NE (Eastbound) Left	Thru	Right	U	Alexander Ln NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:15 PM	3	18	0	0	0	22	1	0	1	0	1	0	0	0	0	0	46	
4:20 PM	6	13	0	0	0	14	4	0	0	0	2	0	0	0	0	0	39	
4:25 PM	4	19	0	0	0	17	1	0	0	0	2	0	0	0	0	0	43	
4:30 PM	4	19	0	0	0	17	0	0	0	0	3	0	0	0	0	0	43	
4:35 PM	3	17	0	0	0	18	2	0	1	0	1	0	0	0	0	0	42	
4:40 PM	4	12	0	0	0	21	1	0	5	0	3	0	0	0	0	0	46	
4:45 PM	4	19	0	0	0	20	1	0	0	0	3	0	0	0	0	0	47	
4:50 PM	3	16	0	0	0	14	1	0	0	0	6	0	0	0	0	0	40	
4:55 PM	3	13	0	0	0	12	2	0	1	0	7	0	0	0	0	0	38	515
5:00 PM	1	8	0	0	0	18	1	0	1	0	1	0	0	0	0	0	30	507
5:05 PM	4	21	0	0	0	26	2	0	3	0	4	0	0	0	0	0	60	525
5:10 PM	3	17	0	0	0	26	1	0	1	0	5	0	0	0	0	0	53	527
5:15 PM	7	21	0	0	0	14	1	0	1	0	2	0	0	0	0	0	46	527
5:20 PM	5	13	0	0	0	20	3	0	2	0	0	0	0	0	0	0	43	531
5:25 PM	2	17	0	0	0	15	1	0	3	0	1	0	0	0	0	0	39	527
5:30 PM	4	27	0	0	0	18	1	0	1	0	3	0	0	0	0	0	54	538
5:35 PM	5	21	0	0	0	19	0	0	0	0	3	0	0	0	0	0	48	544
5:40 PM	3	18	0	0	0	20	2	0	0	0	4	0	0	0	0	0	47	545
5:45 PM	2	17	0	0	0	9	0	0	0	0	5	0	0	0	0	0	33	531
5:50 PM	6	19	0	0	0	14	1	0	1	0	1	0	0	0	0	0	42	533
5:55 PM	5	6	0	0	0	18	2	0	0	0	1	0	0	0	0	0	32	527
6:00 PM	2	21	0	0	0	17	1	0	1	0	2	0	0	0	0	0	44	541
6:05 PM	5	22	0	0	0	18	1	0	2	0	5	0	0	0	0	0	53	534
6:10 PM	6	20	0	0	0	9	2	0	0	0	4	0	0	0	0	0	41	522

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	56	236	0	0	0	264	16	0	20	0	44	0	0	0	0	0	636
Heavy Trucks	0	8	0		0	8	0		4	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

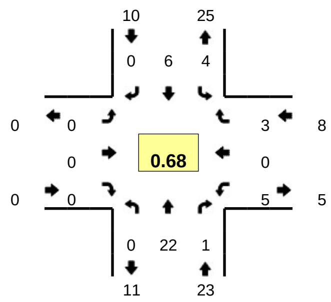
Comments:

Report generated on 5/28/2015 4:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

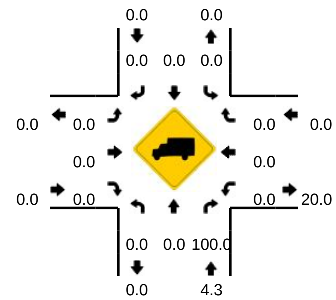
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

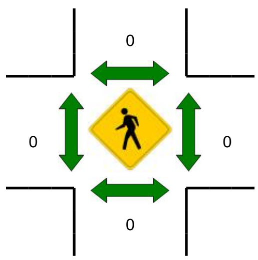
LOCATION: Woods Rd NE -- Alexander Ln NE | **QC JOB #:** 13389907

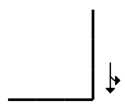
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

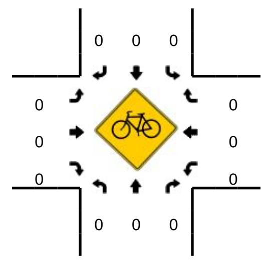


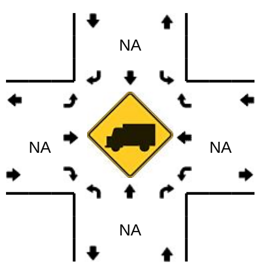
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

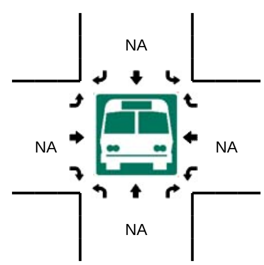












5-Min Count Period Beginning At	Woods Rd NE (Northbound) Left	Thru	Right	U	Woods Rd NE (Southbound) Left	Thru	Right	U	Alexander Ln NE (Eastbound) Left	Thru	Right	U	Alexander Ln NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:05 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	
4:10 PM	0	1	0	0	0	2	0	0	0	0	0	0	0	0	1	0	4	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:20 PM	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	3	
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:35 PM	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	4	
4:40 PM	0	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	3	
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
4:50 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
4:55 PM	0	4	0	0	1	1	0	0	0	0	0	0	0	0	0	0	6	30
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
5:05 PM	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	29
5:10 PM	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	4	29
5:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	31
5:20 PM	0	3	0	0	0	1	0	0	0	0	0	0	1	0	2	0	7	35
5:25 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	38
5:30 PM	0	3	0	0	1	0	0	0	0	0	0	0	0	0	1	0	5	41
5:35 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	38
5:40 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	36
5:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	35
5:50 PM	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	5	38
5:55 PM	0	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	6	38
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	38

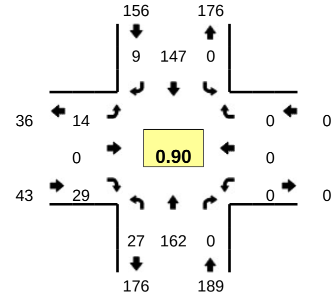
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	36	0	0	4	4	0	0	0	0	0	0	4	0	12	0	60
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

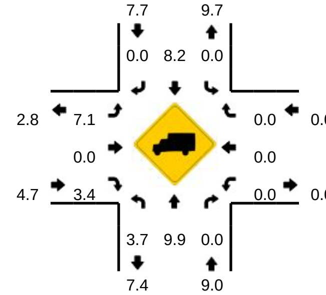
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

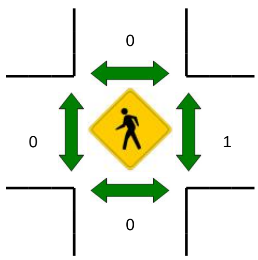
LOCATION: Old Salem Rd NE -- Morningstar Rd NE | **QC JOB #:** 13389908

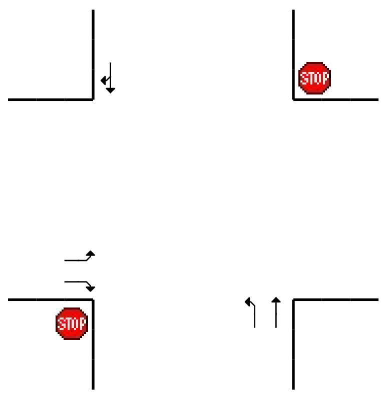
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

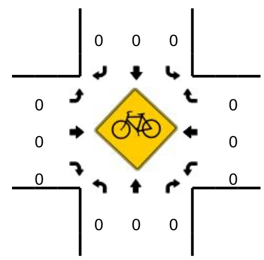


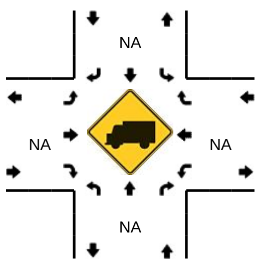
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

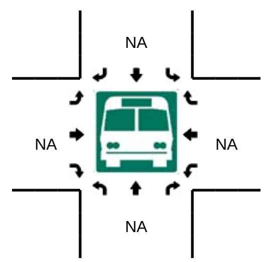












5-Min Count Period Beginning At	Old Salem Rd NE (Northbound) Left	Thru	Right	U	Old Salem Rd NE (Southbound) Left	Thru	Right	U	Morningstar Rd NE (Eastbound) Left	Thru	Right	U	Morningstar Rd NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:05 PM	2	12	0	0	0	14	1	0	1	0	3	0	0	0	0	0	33	
4:10 PM	2	9	0	0	0	17	1	0	2	0	0	0	0	0	0	0	31	
4:15 PM	3	17	0	0	0	17	2	0	4	0	1	0	0	0	0	0	44	
4:20 PM	1	8	0	0	0	11	2	0	0	0	2	0	0	0	0	0	24	
4:25 PM	0	8	0	0	0	13	3	0	1	0	1	0	0	0	0	0	26	
4:30 PM	5	10	0	0	0	11	1	0	2	0	3	0	0	0	0	0	32	
4:35 PM	2	14	0	0	0	17	3	0	2	0	0	0	0	0	0	0	38	
4:40 PM	2	14	0	0	0	16	0	0	1	0	1	0	0	0	0	0	34	
4:45 PM	5	14	0	0	0	12	0	0	3	0	2	0	0	0	0	0	36	
4:50 PM	2	12	0	0	0	6	2	0	0	0	3	0	0	0	0	0	25	
4:55 PM	0	9	0	0	0	8	0	0	0	0	1	0	0	0	0	0	18	367
5:00 PM	1	12	0	0	0	11	0	0	2	0	4	0	0	0	0	0	30	371
5:05 PM	5	17	0	0	0	16	0	0	1	0	5	0	0	0	0	0	44	382
5:10 PM	3	10	0	0	0	7	0	0	1	0	0	0	0	0	0	0	21	372
5:15 PM	2	15	0	0	0	15	1	0	1	0	4	0	0	0	0	0	38	366
5:20 PM	1	11	0	0	0	13	1	0	1	0	3	0	0	0	0	0	30	372
5:25 PM	2	14	0	0	0	10	2	0	2	0	5	0	0	0	0	0	35	381
5:30 PM	2	20	0	0	0	16	0	0	0	0	1	0	0	0	0	0	39	388
5:35 PM	4	16	0	0	0	9	1	0	1	0	2	0	0	0	0	0	33	383
5:40 PM	4	13	0	0	0	14	4	0	3	0	1	0	0	0	0	0	39	388
5:45 PM	3	8	0	0	0	8	1	0	1	0	1	0	0	0	0	0	22	374
5:50 PM	5	12	0	0	0	9	4	0	1	0	3	0	0	0	0	0	34	383
5:55 PM	1	5	0	0	0	12	2	0	1	0	2	0	0	0	0	0	23	388
6:00 PM	1	8	0	0	0	10	4	0	3	0	3	0	0	0	0	0	29	387

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	36	168	0	0	0	180	12	0	24	0	12	0	0	0	0	0	432
Heavy Trucks	0	28	0		0	16	0		4	0	0		0	0	0		48
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

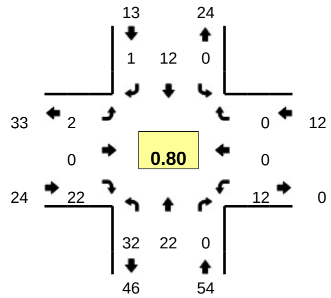
Comments:

Report generated on 5/28/2015 4:19 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak — Method for determining peak hour: Total Entering Volume

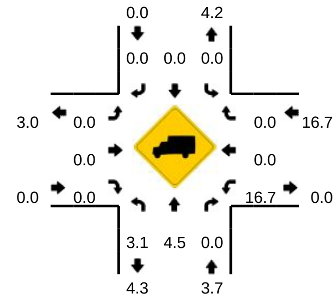
LOCATION: Morningstar Rd NE -- Millersburg Dr NE — **QC JOB #:** 13389909

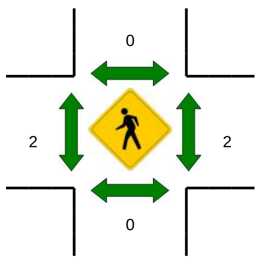
CITY/STATE: Millersburg, OR — **DATE:** Thu, May 21 2015

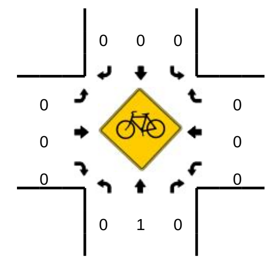


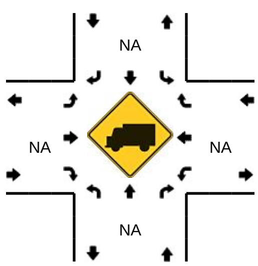
Peak-Hour: 5:05 PM -- 6:05 PM

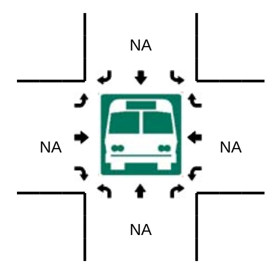
Peak 15-Min: 5:40 PM -- 5:55 PM











5-Min Count Period Beginning At	Morningstar Rd NE (Northbound) Left	Thru	Right	U	Morningstar Rd NE (Southbound) Left	Thru	Right	U	Millersburg Dr NE (Eastbound) Left	Thru	Right	U	Millersburg Dr NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:35 PM	3	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	7	
4:40 PM	1	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	5	
4:45 PM	3	2	0	0	0	1	0	0	0	0	2	0	1	0	0	0	9	
4:50 PM	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	6	
4:55 PM	0	0	0	0	0	0	1	0	0	0	1	0	1	0	0	0	3	76
5:00 PM	1	0	0	1	0	0	0	0	0	0	1	0	4	0	0	0	7	80
5:05 PM	4	1	0	0	0	0	0	0	0	0	0	0	7	0	0	0	12	85
5:10 PM	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	83
5:15 PM	2	2	0	0	0	2	0	0	0	0	1	0	2	0	0	0	9	81
5:20 PM	2	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	6	82
5:25 PM	3	1	0	0	0	2	0	0	0	0	5	0	0	0	0	0	11	88
5:30 PM	0	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0	4	82
5:35 PM	4	1	0	0	0	0	0	0	1	0	2	0	1	0	0	0	9	84
5:40 PM	5	1	0	0	0	1	0	0	0	0	2	0	0	0	0	0	9	88
5:45 PM	2	4	0	0	0	1	0	0	0	0	1	0	0	0	0	0	8	87
5:50 PM	4	5	0	0	0	0	1	0	1	0	4	0	0	0	0	0	15	96
5:55 PM	2	1	0	0	0	2	0	0	0	0	0	0	1	0	0	0	6	99
6:00 PM	3	2	0	0	0	2	0	0	0	0	4	0	0	0	0	0	11	103
6:05 PM	3	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	5	96
6:10 PM	2	2	0	0	0	0	0	0	0	0	3	0	0	0	0	0	7	100
6:15 PM	1	2	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7	98
6:20 PM	1	2	0	0	0	0	0	0	0	0	2	0	1	0	0	0	6	98
6:25 PM	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0	0	4	91
6:30 PM	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	4	91

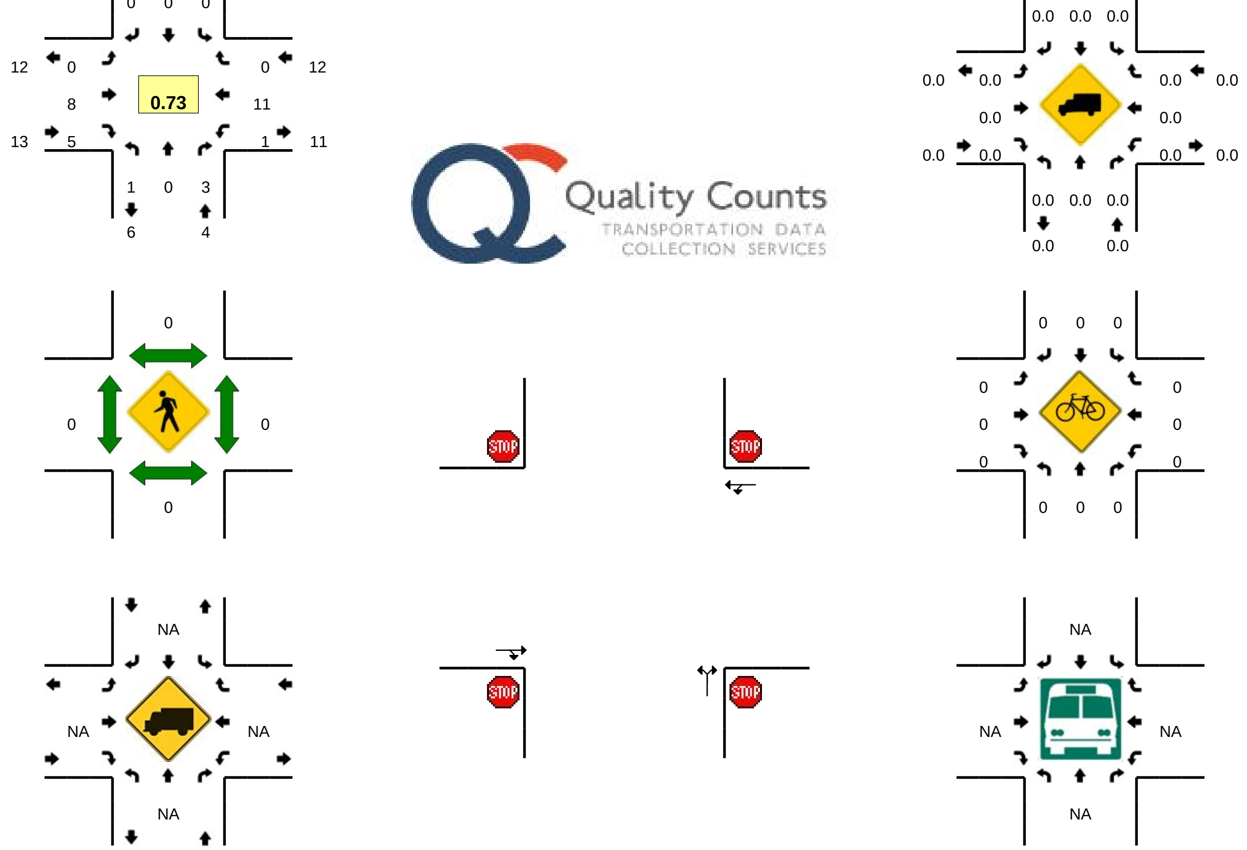
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	44	40	0	0	0	8	4	0	4	0	28	0	0	0	0	0	128
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: Woods Rd NE -- Millersburg Dr NE | **QC JOB #:** 13389910
CITY/STATE: Millersburg, OR | **DATE:** Thu, May 21 2015

Peak-Hour: 5:10 PM -- 6:10 PM
Peak 15-Min: 5:15 PM -- 5:30 PM



5-Min Count Period Beginning At	Woods Rd NE (Northbound) Left	Thru	Right	U	Woods Rd NE (Southbound) Left	Thru	Right	U	Millersburg Dr NE (Eastbound) Left	Thru	Right	U	Millersburg Dr NE (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:40 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	
4:50 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
4:55 PM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	23
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	21
5:10 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	22
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3	20
5:20 PM	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	0	3	22
5:25 PM	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	4	24
5:30 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	3	26
5:35 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	26
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	26
5:45 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	27
5:50 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	28
5:55 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	28
6:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	28
6:05 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	29
6:10 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	29
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	27
6:20 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25
6:25 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	2	23
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	20
6:35 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	0	0	8	0	0	0	0	0	0	8	8	0	4	12	0	0	40
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Project: Millersburg TSP Update

Subject: ***PM Turning Movement Volumes***

Local: 1.03

Old Salem & I-5: 1.08

N-S ID	Synchro ID	Intersection	Direction	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	Existing Heavy Vehicle Count	Existing Heavy Vehicle Percentage	Base Year Adjustment Factor	Seasonal Adjustment Factor	30th Highest Hour Adjusted 1-Hr Volume PM Peak	Volume Balancing Adjustments	2015 Balanced Volumes PM Peak
1	10	Woods Rd at Millersburg Dr	EB	EBL	10	0	0	0%	1.00	1.03	0	0	0
	10			EBT	10	3	0	0%	1.00	1.03	5	0	5
	10	Count Date: 5/21/2015		EBR	10	4	0	0%	1.00	1.03	5	0	5
	10		WB	WBL	10	2	0	0%	1.00	1.03	0	5	5
	10			WBT	10	10	0	0%	1.00	1.03	10	0	10
	10			WBR	10	0	0	0%	1.00	1.03	0	0	0
	10	PM Peak Hour: 5:15 PM-6:15 PM	NB	NBL	10	3	0	0%	1.00	1.03	5	0	5
	10	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	10	0	0	0%	1.00	1.03	0	0	0
	10			NBR	10	4	0	0%	1.00	1.03	5	0	5
	10		SB	SBL	10	0	0	0%	1.00	1.03	0	0	0
	10	PHF:		SBT	10	0	0	0%	1.00	1.03	0	0	0
	10	0.65		SBR	10	0	0	0%	1.00	1.03	0	0	0
			TEV	**TEV**	**10**	**26**					**30**	**5**	**35**
2	20	Morningstar Rd at Millersburg Dr	EB	EBL	20	1	0	0%	1.00	1.03	0	0	0
	20			EBT	20	0	0	0%	1.00	1.03	0	0	0
	20	Count Date: 5/21/2015		EBR	20	18	0	0%	1.00	1.03	20	0	20
	20		WB	WBL	20	17	2	12%	1.00	1.03	20	0	20
	20			WBT	20	0	0	0%	1.00	1.03	0	0	0
	20			WBR	20	0	0	0%	1.00	1.03	0	0	0
	20	PM Peak Hour: 5:15 PM-6:15 PM	NB	NBL	20	29	1	3%	1.00	1.03	30	0	30
	20	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	20	12	0	0%	1.00	1.03	10	0	10
	20			NBR	20	0	0	0%	1.00	1.03	0	5	5
	20		SB	SBL	20	0	0	0%	1.00	1.03	0	0	0
	20	PHF:		SBT	20	9	0	0%	1.00	1.03	10	0	10
	20	0.84		SBR	20	1	0	0%	1.00	1.03	0	0	0
			TEV	**TEV**	**20**	**87**					**90**	**5**	**95**
3	30	Morningstar Rd at Old Salem Rd	EB	EBL	30	15	4	27%	1.00	1.08	15	0	15
	30			EBT	30	0	0	0%	1.00	1.08	0	0	0
	30	Count Date: 5/21/2015		EBR	30	31	2	6%	1.00	1.08	35	0	35
	30		WB	WBL	30	0	0	0%	1.00	1.08	0	0	0
	30	**Signalized**		WBT	30	0	0	0%	1.00	1.08	0	0	0
	30			WBR	30	0	0	0%	1.00	1.08	0	0	0
	30	PM Peak Hour: 4:45 PM-5:45 PM	NB	NBL	30	31	4	13%	1.00	1.08	35	0	35
	30	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	30	163	35	21%	1.00	1.08	175	0	175
	30			NBR	30	0	0	0%	1.00	1.08	0	0	0
	30		SB	SBL	30	0	0	0%	1.00	1.08	0	0	0
	30	PHF:		SBT	30	137	40	29%	1.00	1.08	150	0	150
	30	0.87		SBR	30	11	1	9%	1.00	1.08	10	0	10

Project: Millersburg TSP Update

Subject: *PM Turning Movement Volumes*

Local: 1.03

Old Salem & I-5: 1.08

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			TEV	**TEV**	**30**	**388**					**420**	**0**	**420**
4	40	Woods Rd at Alexander Ln	EB	EBL	40	0	0	0%	1.00	1.03	0	0	0
	40			EBT	40	0	0	0%	1.00	1.03	0	0	0
	40	Count Date: 5/21/2015		EBR	40	0	0	0%	1.00	1.03	0	0	0
	40		WB	WBL	40	4	0	0%	1.00	1.03	5	0	5
	40			WBT	40	0	0	0%	1.00	1.03	0	0	0
	40			WBR	40	3	0	0%	1.00	1.03	5	0	5
	40	PM Peak Hour: 10:15 AM-11:15 AM	NB	NBL	40	0	0	0%	1.00	1.03	0	0	0
	40	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	40	21	0	0%	1.00	1.03	20	0	20
	40			NBR	40	0	0	0%	1.00	1.03	0	0	0
	40		SB	SBL	40	3	0	0%	1.00	1.03	5	0	5
	40	PHF:		SBT	40	5	0	0%	1.00	1.03	5	0	5
	40	0.75		SBR	40	0	0	0%	1.00	1.03	0	0	0
			TEV	**TEV**	**40**	**36**					**40**	**0**	**40**
5	50	Old Salem Rd at Alexander Ln	EB	EBL	50	13	0	0%	1.00	1.08	15	0	15
	50			EBT	50	0	0	0%	1.00	1.08	0	0	0
	50	Count Date: 5/21/2015		EBR	50	39	0	0%	1.00	1.08	40	0	40
	50		WB	WBL	50	0	0	0%	1.00	1.08	0	0	0
	50			WBT	50	0	0	0%	1.00	1.08	0	0	0
	50			WBR	50	0	0	0%	1.00	1.08	0	0	0
	50	PM Peak Hour: 4:45 PM-5:45 PM	NB	NBL	50	44	0	0%	1.00	1.08	50	0	50
	50	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	50	211	0	0%	1.00	1.08	230	0	230
	50			NBR	50	0	0	0%	1.00	1.08	0	0	0
	50		SB	SBL	50	0	0	0%	1.00	1.08	0	0	0
	50	PHF:		SBT	50	222	0	0%	1.00	1.08	240	0	240
	50	0.91		SBR	50	16	0	0%	1.00	1.08	15	0	15
			TEV	**TEV**	**50**	**545**					**590**	**0**	**590**
6	60	Woods Rd at Conser Rd	EB	EBL	60	1	0	0%	1.00	1.03	0	0	0
	60			EBT	60	14	0	0%	1.00	1.03	15	0	15
	60	Count Date: 5/21/2015		EBR	60	0	0	0%	1.00	1.03	0	0	0
	60		WB	WBL	60	0	0	0%	1.00	1.03	0	0	0
	60			WBT	60	21	0	0%	1.00	1.03	20	0	20
	60			WBR	60	21	0	0%	1.00	1.03	20	0	20
	60	PM Peak Hour: 5:45 PM-6:45 PM	NB	NBL	60	0	0	0%	1.00	1.03	0	0	0
	60	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	60	0	0	0%	1.00	1.03	0	0	0
	60			NBR	60	0	0	0%	1.00	1.03	0	0	0
	60			SBL	60	8	0	0%	1.00	1.03	10	0	10

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	60	PHF:	SB	SBT	60	0	0	0%	1.00	1.03	0	0	0
	60	0.74		SBR	60	0	0	0%	1.00	1.03	0	0	0
			TEV	**TEV**	**60**	**65**					**65**	**0**	**65**
7	70	Old Salem Rd at Conser Rd		EBL	70	11	0	0%	1.00	1.08	10	0	10
	70		EB	EBT	70	0	0	0%	1.00	1.08	0	0	0
	70	Count Date: 5/21/2015		EBR	70	40	5	13%	1.00	1.08	45	0	45
	70			WBL	70	11	2	18%	1.00	1.08	10	0	10
	70	Signalized	WB	WBT	70	2	0	0%	1.00	1.08	0	0	0
	70			WBR	70	3	0	0%	1.00	1.08	5	0	5
	70	PM Peak Hour: 4:00 PM-5:00 PM		NBL	70	67	2	3%	1.00	1.08	75	0	75
	70	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	70	226	9	4%	1.00	1.08	245	0	245
	70			NBR	70	5	4	80%	1.00	1.08	5	-5	0
	70			SBL	70	0	0	0%	1.00	1.08	0	0	0
	70	PHF:	SB	SBT	70	256	16	6%	1.00	1.08	275	0	275
	70	0.93		SBR	70	17	1	6%	1.00	1.08	20	0	20
			TEV	**TEV**	**70**	**638**					**690**	**-5**	**685**
8	80	Old Salem Rd at Nygren Rd		EBL	80	0	0	0%	1.00	1.08	0	0	0
	80		EB	EBT	80	363	22	6%	1.00	1.08	395	0	395
	80	Count Date: 5/21/2015		EBR	80	5	0	0%	1.00	1.08	5	0	5
	80			WBL	80	24	3	13%	1.00	1.08	25	0	25
	80		WB	WBT	80	297	17	6%	1.00	1.08	320	0	320
	80			WBR	80	0	0	0%	1.00	1.08	0	0	0
	80	PM Peak Hour: 4:00 PM-5:00 PM		NBL	80	2	1	50%	1.00	1.08	0	0	0
	80	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	80	0	0	0%	1.00	1.08	0	0	0
	80			NBR	80	69	8	12%	1.00	1.08	75	0	75
	80			SBL	80	0	0	0%	1.00	1.08	0	0	0
	80	PHF:	SB	SBT	80	0	0	0%	1.00	1.08	0	0	0
	80	0.85		SBR	80	0	0	0%	1.00	1.08	0	0	0
			TEV	**TEV**	**80**	**760**					**820**	**0**	**820**
9	90	Old Salem Rd at NE Old Salem Rd		EBL	90	0	0	0%	1.00	1.08	0	0	0
	90		EB	EBT	90	78	10	13%	1.00	1.08	85	5	90
	90	Count Date: 5/21/2015		EBR	90	351	22	6%	1.00	1.08	380	0	380
	90			WBL	90	23	2	9%	1.00	1.08	25	0	25
	90		WB	WBT	90	119	15	13%	1.00	1.08	130	0	130
	90			WBR	90	0	0	0%	1.00	1.08	0	0	0
	90	PM Peak Hour: 4:00 PM-5:00 PM		NBL	90	206	7	3%	1.00	1.08	225	0	225
	90	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	90	0	0	0%	1.00	1.08	0	0	0

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	90			NBR	90	73	3	4%	1.00	1.08	80	0	80
	90		SB	SBL	90	0	0	0%	1.00	1.08	0	0	0
	90	PHF:		SBT	90	0	0	0%	1.00	1.08	0	0	0
	90	0.87		SBR	90	0	0	0%	1.00	1.08	0	0	0
			TEV	**TEV**	**90**	**850**					**925**	**5**	**930**
10	100	Old Salem Rd at Century Dr NE	EB	EBL	100	86	6	7%	1.00	1.08	95	0	95
	100			EBT	100	0	0	0%	1.00	1.08	0	0	0
	100	Count Date: 5/21/2015		EBR	100	69	6	9%	1.00	1.08	75	0	75
	100		WB	WBL	100	0	0	0%	1.00	1.08	0	0	0
	100			WBT	100	0	0	0%	1.00	1.08	0	0	0
	100			WBR	100	0	0	0%	1.00	1.08	0	0	0
	100	PM Peak Hour: 4:45 PM-5:45 PM	NB	NBL	100	49	1	2%	1.00	1.08	55	0	55
	100	PM Peak Hour Used: 4:45 PM-5:45 PM		NBT	100	52	2	4%	1.00	1.08	55	0	55
	100			NBR	100	0	0	0%	1.00	1.08	0	0	0
	100		SB	SBL	100	0	0	0%	1.00	1.08	0	0	0
	100	PHF:		SBT	100	52	2	4%	1.00	1.08	55	0	55
	100	0.93		SBR	100	90	16	18%	1.00	1.08	100	0	100
			TEV	**TEV**	**100**	**398**					**435**	**0**	**435**
11	110	I-5 Exit 238 Southbound at Jefferson Hwy	EB	EBL	110	58	9	16%	1.00	1.00	60	0	60
	110			EBT	110	0	0	0%	1.00	1.00	0	0	0
	110	I-5 Exit 238 Southbound at Jefferson Hwy		EBR	110	64	10	16%	1.00	1.00	65	0	65
	110		WB	WBL	110	0		0%	1.00	1.00	0	0	0
	110			WBT	110	0		0%	1.00	1.00	0	0	0
	110			WBR	110	0		0%	1.00	1.00	0	0	0
	110		NB	NBL	110	11	1	8%	1.00	1.00	10	0	10
	110	Volumes from Albany		NBT	110	167	13	8%	1.00	1.00	165	0	165
	110	Area Transportation		NBR	110	0		0%	1.00	1.00	0	0	0
	110	Study -- DKS study	SB	SBL	110	0		0%	1.00	1.00	0	0	0
	110			SBT	110	96	2	2%	1.00	1.00	95	0	95
	110			SBR	110	121	2	2%	1.00	1.00	120	0	120
			TEV	**TEV**	**110**	**517**					**515**	**0**	**515**
12	120	I-5 Exit 238 Northbound at Jefferson Hwy	EB	EBL	120	60	5	8%	1.00	1.00	60	0	60
	120			EBT	120	153	12	8%	1.00	1.00	155	0	155
	120	I-5 Exit 238 Northbound at Jefferson Hwy		EBR	120	1		0%	1.00	1.00	0	0	0
	120		WB	WBL	120	1		0%	1.00	1.00	0	0	0
	120			WBT	120	214	6	3%	1.00	1.00	215	0	215
	120			WBR	120	40	1	3%	1.00	1.00	40	0	40

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	120	Volumes from Albany Area Transportation Study -- DKS study	NB	NBL	120	0		0%	1.00	1.00	0	0	0
	120			NBT	120	0		0%	1.00	1.00	0	0	0
	120			NBR	120	0		0%	1.00	1.00	0	0	0
	120		SB	SBL	120	257	23	9%	1.00	1.00	255	0	255
	120			SBT	120	0		0%	1.00	1.00	0	0	0
	120			SBR	120	6	1	9%	1.00	1.00	5	0	5
			TEV	**TEV**	**120**	**732**					**730**	**0**	**730**
13	130	I-5 Exit 235 Northbound at Century Dr	EB	EBL	130	24	1	3%	1.00	1.00	25	0	25
	130			EBT	130	0	0	3%	1.00	1.00	0	0	0
	130	I-5 Exit 235 Northbound at Century Dr		EBR	130	91	3	3%	1.00	1.00	90	0	90
	130		WB	WBL	130	0	0	6%	1.00	1.00	0	0	0
	130			WBT	130	0	0	6%	1.00	1.00	0	0	0
	130			WBR	130	0	0	6%	1.00	1.00	0	0	0
	130	Volumes from Albany Area Transportation Study -- DKS study	NB	NBL	130	53	0	0%	1.00	1.00	55	0	55
	130			NBT	130	54	0	0%	1.00	1.00	55	0	55
	130			NBR	130	0	0	0%	1.00	1.00	0	0	0
	130		SB	SBL	130	0	0	4%	1.00	1.00	0	0	0
	130			SBT	130	54		0%	1.00	1.00	55	0	55
	130			SBR	130	0	0	4%	1.00	1.00	0	0	0
			TEV	**TEV**	**130**	**276**					**280**	**0**	**280**

Appendix D – Existing Traffic Operations Worksheets

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Traffic Vol, veh/h	0	5	5	0	5	10	0	5	5
Future Vol, veh/h	0	5	5	0	5	10	0	5	5
Peak Hour Factor	0.92	0.65	0.65	0.92	0.65	0.65	0.92	0.65	0.65
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	8	8	0	8	15	0	8	8
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.7	7.2	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	33%
Vol Thru, %	0%	50%	67%
Vol Right, %	50%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	10	10	15
LT Vol	5	0	5
Through Vol	0	5	10
RT Vol	5	5	0
Lane Flow Rate	15	15	23
Geometry Grp	1	1	1
Degree of Util (X)	0.016	0.016	0.026
Departure Headway (Hd)	3.802	3.679	4.04
Convergence, Y/N	Yes	Yes	Yes
Cap	944	977	890
Service Time	1.816	1.687	2.046
HCM Lane V/C Ratio	0.016	0.015	0.026
HCM Control Delay	6.9	6.7	7.2
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0	0	0.1

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	2	0	20	20	0	0	30	10	5	0	10	2
Future Vol, veh/h	2	0	20	20	0	0	30	10	5	0	10	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	12	2	2	3	2	2	2	2	2
Mvmt Flow	2	0	24	24	0	0	36	12	6	0	12	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	99	102	13	111	100	15	14	0	0	18	0	0
Stage 1	13	13	-	86	86	-	-	-	-	-	-	-
Stage 2	86	89	-	25	14	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.22	6.52	6.22	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.22	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.22	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.608	4.018	3.318	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	883	788	1067	844	790	1065	1598	-	-	1599	-	-
Stage 1	1007	885	-	898	824	-	-	-	-	-	-	-
Stage 2	922	821	-	968	884	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	868	770	1067	811	772	1065	1598	-	-	1599	-	-
Mov Cap-2 Maneuver	868	770	-	811	772	-	-	-	-	-	-	-
Stage 1	984	885	-	877	805	-	-	-	-	-	-	-
Stage 2	901	802	-	946	884	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9.6	4.9	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1598	-	-	1045	811	1599	-	-
HCM Lane V/C Ratio	0.022	-	-	0.025	0.029	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	15	35	35	175	150	10
Future Vol, veh/h	15	35	35	175	150	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	350	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	13	3	3	8	8	2
Mvmt Flow	17	40	40	201	172	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	460	178	184	0	-	0
Stage 1	178	-	-	-	-	-
Stage 2	282	-	-	-	-	-
Critical Hdwy	6.53	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	540	862	1385	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	524	862	1385	-	-	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	720	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1385	-	587	862	-	-
HCM Lane V/C Ratio	0.029	-	0.029	0.047	-	-
HCM Control Delay (s)	7.7	-	11.3	9.4	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	5	20	0	5	5
Future Vol, veh/h	5	5	20	0	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	75	75	75	75
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	7	27	0	7	7

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	47	27	0	0	27	0
Stage 1	27	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	963	1048	-	-	1587	-
Stage 1	996	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	959	1048	-	-	1587	-
Mov Cap-2 Maneuver	959	-	-	-	-	-
Stage 1	996	-	-	-	-	-
Stage 2	999	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1002	1587	-
HCM Lane V/C Ratio	-	-	0.013	0.004	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection						
Int Delay, s/veh	1.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	15	40	50	230	240	15
Future Vol, veh/h	15	40	50	230	240	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	315	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	15	10	2	4	7	2
Mvmt Flow	16	44	55	253	264	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	635	272	280	0	-	0
Stage 1	272	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Critical Hdwy	6.55	6.3	4.12	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.39	2.218	-	-	-
Pot Cap-1 Maneuver	423	748	1283	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	405	748	1283	-	-	-
Mov Cap-2 Maneuver	499	-	-	-	-	-
Stage 1	745	-	-	-	-	-
Stage 2	647	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	1.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1283	-	658	-	-
HCM Lane V/C Ratio	0.043	-	0.092	-	-
HCM Control Delay (s)	7.9	-	11	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	2	15	20	20	10	0
Future Vol, veh/h	2	15	20	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	20	27	27	14	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	54	0	-	0	67	41
Stage 1	-	-	-	-	41	-
Stage 2	-	-	-	-	26	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1551	-	-	-	938	1030
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	997	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1551	-	-	-	936	1030
Mov Cap-2 Maneuver	-	-	-	-	936	-
Stage 1	-	-	-	-	981	-
Stage 2	-	-	-	-	995	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1551	-	-	-	936
HCM Lane V/C Ratio	0.002	-	-	-	0.014
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	10	0	45	10	2	5	75	245	5	0	275	20
Future Vol, veh/h	10	0	45	10	2	5	75	245	5	0	275	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	135	-	0	0	-	50	400	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	13	18	2	2	3	4	80	2	6	6
Mvmt Flow	11	0	48	11	2	5	81	263	5	0	296	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	734	736	306	733	744	266	317	0	0	269	0	0
Stage 1	306	306	-	427	427	-	-	-	-	-	-	-
Stage 2	428	430	-	306	317	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.33	7.28	6.52	6.22	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.28	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.28	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.417	3.662	4.018	3.318	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	336	346	709	317	343	773	1237	-	-	1295	-	-
Stage 1	704	662	-	575	585	-	-	-	-	-	-	-
Stage 2	605	583	-	671	654	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	315	323	709	281	321	773	1237	-	-	1295	-	-
Mov Cap-2 Maneuver	315	323	-	281	321	-	-	-	-	-	-	-
Stage 1	658	662	-	537	547	-	-	-	-	-	-	-
Stage 2	559	545	-	625	654	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	15.4	1.9	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1237	-	-	315	709	281	773	1295	-	-
HCM Lane V/C Ratio	0.065	-	-	0.034	0.068	0.038	0.007	-	-	-
HCM Control Delay (s)	8.1	-	-	16.8	10.4	18.3	9.7	0	-	-
HCM Lane LOS	A	-	-	C	B	C	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	0.2	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	395	5	25	320	2	75
Future Vol, veh/h	395	5	25	320	2	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	6	2	13	6	50	12
Mvmt Flow	465	6	29	376	2	88

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	471	0	903	468
Stage 1	-	-	-	-	468	-
Stage 2	-	-	-	-	435	-
Critical Hdwy	-	-	4.23	-	6.9	6.32
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	-	-	2.317	-	3.95	3.408
Pot Cap-1 Maneuver	-	-	1036	-	254	575
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1036	-	247	575
Mov Cap-2 Maneuver	-	-	-	-	361	-
Stage 1	-	-	-	-	541	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	12.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	590	-	-	1036	-
HCM Lane V/C Ratio	0.154	-	-	0.028	-
HCM Control Delay (s)	12.2	-	-	8.6	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	90	380	25	130	215	80
Future Vol, veh/h	90	380	25	130	215	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	13	6	9	13	3	4
Mvmt Flow	103	437	29	149	247	92

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	540	0	529	322
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	207	-
Critical Hdwy	-	-	4.19	-	6.43	6.24
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.281	-	3.527	3.336
Pot Cap-1 Maneuver	-	-	994	-	508	714
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	825	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	994	-	492	714
Mov Cap-2 Maneuver	-	-	-	-	572	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	799	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	18.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	605	-	-	994	-
HCM Lane V/C Ratio	0.56	-	-	0.029	-
HCM Control Delay (s)	18.3	-	-	8.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.5	-	-	0.1	-

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	95	0	0	55	55	100
Future Vol, veh/h	95	0	0	55	55	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	2	2	4	4	18
Mvmt Flow	102	0	0	59	59	108

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	172	113	167	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	59	-	-	-	-	-
Critical Hdwy	6.47	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	807	940	1411	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	951	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	807	940	1411	-	-	-
Mov Cap-2 Maneuver	807	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	951	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1411	-	807	-	-
HCM Lane V/C Ratio	-	-	0.127	-	-
HCM Control Delay (s)	0	-	10.1	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	95	75	0	100	55	0
Future Vol, veh/h	95	75	0	100	55	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	25	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	7	9	2	17	2	2
Mvmt Flow	102	81	0	108	59	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	102	0	210	102
Stage 1	-	-	-	-	102	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1490	-	778	953
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	778	953
Mov Cap-2 Maneuver	-	-	-	-	778	-
Stage 1	-	-	-	-	922	-
Stage 2	-	-	-	-	916	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	778	-	-	1490	-
HCM Lane V/C Ratio	0.076	-	-	-	-
HCM Control Delay (s)	10	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	4.5

Movement	NBL	NBT	SBT	SBR	SEL	SER
Traffic Vol, veh/h	55	55	55	0	0	75
Future Vol, veh/h	55	55	55	0	0	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	4	4	2	2	9
Mvmt Flow	59	59	59	0	0	81

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	59	0	-	0	236	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	4.12	-	-	-	6.42	6.29
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.381
Pot Cap-1 Maneuver	1545	-	-	-	752	987
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1545	-	-	-	723	987
Mov Cap-2 Maneuver	-	-	-	-	723	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	821	-

Approach	NB	SB	SE
HCM Control Delay, s	3.7	0	9
HCM LOS			A

Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR
Capacity (veh/h)	1545	-	987	-	-
HCM Lane V/C Ratio	0.038	-	0.082	-	-
HCM Control Delay (s)	7.4	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	14.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Traffic Vol, veh/h	60	153	1	1	214	40	3	5	257	6
Future Vol, veh/h	60	153	1	1	214	40	3	5	257	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None	-	-
Storage Length	-	-	-	-	-	-	0	-	0	-
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	3	3	3	6	6	6	0	0	4	4
Mvmt Flow	69	176	1	1	246	46	3	6	295	7

Major/Minor	Major1			Major2			Minor1		Minor2	
Conflicting Flow All	292	0	0	177	0	0	592	176	590	269
Stage 1	-	-	-	-	-	-	314	-	271	-
Stage 2	-	-	-	-	-	-	278	-	319	-
Critical Hdwy	4.13	-	-	4.16	-	-	7.1	6.2	7.14	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	-	6.14	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	6.14	-
Follow-up Hdwy	2.227	-	-	2.254	-	-	3.5	3.3	3.536	3.336
Pot Cap-1 Maneuver	1264	-	-	1375	-	-	421	872	416	765
Stage 1	-	-	-	-	-	-	701	-	730	-
Stage 2	-	-	-	-	-	-	733	-	688	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	1264	-	-	1375	-	-	392	872	391	765
Mov Cap-2 Maneuver	-	-	-	-	-	-	392	-	391	-
Stage 1	-	-	-	-	-	-	658	-	685	-
Stage 2	-	-	-	-	-	-	718	-	638	-

Approach	EB	WB	NB	SE
HCM Control Delay, s	2.2	0	11.8	38.3
HCM LOS			B	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	538	1264	-	-	1375	-	-	395
HCM Lane V/C Ratio	0.021	0.055	-	-	0.001	-	-	0.765
HCM Control Delay (s)	11.8	8	0	-	7.6	0	-	38.3
HCM Lane LOS	B	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	6.3

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	11	167	96	121	58	64
Future Vol, veh/h	11	167	96	121	58	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	210	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	8	3	3	9	9
Mvmt Flow	12	182	104	132	63	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	104	0	-	0	309	104
Stage 1	-	-	-	-	104	-
Stage 2	-	-	-	-	205	-
Critical Hdwy	4.18	-	-	-	6.49	6.29
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	2.272	-	-	-	3.581	3.381
Pot Cap-1 Maneuver	1451	-	-	0	669	932
Stage 1	-	-	-	0	903	-
Stage 2	-	-	-	0	813	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1451	-	-	-	663	932
Mov Cap-2 Maneuver	-	-	-	-	663	-
Stage 1	-	-	-	-	903	-
Stage 2	-	-	-	-	806	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	7.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1451	-	-	1395
HCM Lane V/C Ratio	0.008	-	-	0.095
HCM Control Delay (s)	7.5	-	-	7.9
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0.3

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	24	91	53	54	54	0
Future Vol, veh/h	24	91	53	54	54	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	16	16	8	8	2	2
Mvmt Flow	26	100	58	59	59	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	235	59	59	0	-	0
Stage 1	59	-	-	-	-	-
Stage 2	176	-	-	-	-	-
Critical Hdwy	6.56	6.36	4.18	-	-	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.444	2.272	-	-	-
Pot Cap-1 Maneuver	723	969	1507	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	822	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	694	969	1507	-	-	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	789	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1507	-	895	-	-
HCM Lane V/C Ratio	0.039	-	0.141	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Appendix E – Bicycle Level of Stress

Segment	Level of Stress[1]	Bike Lane Category	Bike Lane Category Description	Number of Travel Lanes (per direction)	Width Bike Lane (+ parking) in Feet[2]	Posted Speed Limit (mph)[3]	Bike Lane Blockage (driveways, loading zones, stopped buses or parking maneuvers)	ADT[4]	Paved Shoulder Width (ft)[2]	Ped Crossings	Intersection: RT Lane exclusive
Old Salem Rd (I-5 SB Ramps - Nygren Rd)	4	2		1	<5.5	55	-	-	-	No	No
Old Salem Rd (Nygren Rd - changes to Salem Ave)	4	3	Mixed Traffic	1	-	40	-	-	-	No	Yes (2) ATI Wah Chang
Morningstar Rd (Old Salem Rd to Millersburg Dr)	4	3	Mixed Traffic	1	-	40	-	-	-	No	Yes (at Old Salem Rd)
Millersburg Dr (Morningstar Rd to Woods Dr)	4	2	Bike Lane - No Separation	1	<5.5	40	No	-	-	No	No
Millersburg Dr (Woods Dr to AAMPO West Boundary)	4	3	Mixed Traffic	1	-	40	-	-	-	No	No
Conser (Old Salem Rd - AAMPO West Boundary)	3	2	Bike Lane - No Separation	1	<5.5	35	No	-	-	No	Yes (at Old Salem Rd)
Alexander Ln (Woods Rd - Obsidian Ave)	2	3	Mixed Traffic	1	-	35	-	-	-	No	No
Alexander Ln (Obsidian Ave - Old Salem Rd)	1	2	Bike Lane - No Separation	1	5.5-7	35	No	-	-	No	No
Century Dr (Knox Butte Rd - Berry Dr)	4	3	Mixed Traffic	1	-	55	-	-	-	No	No
Woods Rd (Conser St - Millersburg Dr)	4	3	Mixed Traffic	1	-	45	-	-	-	No	No

Bicycle Level of Stress Data from Albany Area MPO Technical Memorandum #4, Appendix, DKS Associates

Notes

1 ODOT Analysis Procedure Manual Version 2, Chapter 14 Multimodal Analysis, 2014
2 Distance estimated in Google Earth
3 Speed limits highlighted in grey indicate an assumed speed for the roadway due to the absence of a posted speed limit sign in the vicinity.
4 ODOT GIS FTP site

Bike Lane Categories

1 Bike lane with separation (parking)
2 Bike lane without separation (standard marked bike lane)
3 Shared lane and rural low speed (<45) with no bike lanes
4 Rural high speed (>= 45 mph) with no bike lanes

Appendix F – ODOT Crash Analysis Reports (January 1, 2009 through December 31, 2013)

City of Millersburg
January 1, 2009 through December 31, 2013

LINN COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	INJ	ALC	SPEED
00095	01/27/2011	3A	TH	Millersburg	ARNOLD RD AT OLD SALEM RD	FIX	101	01	047,080,081	DRY	1	011		0	0	N	Y
00473	04/24/2012	2P	TU	Millersburg	CONSER RD AT OLD SALEM RD	FIX	040,088,058	01	047,081	DRY	1	011		0	0	N	Y
00913	08/01/2009	8A	SA	Millersburg	CONSER RD 150 FT W OF OLD SALEM RD	FIX	050,058	27	016,080	DRY	1	011		0	0	N	N
00419	04/24/2013	11P	WE	Millersburg	CONSER RD 100 FT NW OF WOODS RD	FIX	030,079	10	080,081	DRY	1	011		0	1	N	N
00699	06/16/2012	8P	SA	Millersburg	KNOX BUTTE AVE AT OLD SALEM RD	PED		32,02	052,029	DRY	1	011		0	1	N	N
01087	09/13/2009	4P	SU	Millersburg	KNOX BUTTE AVE AT OLD SALEM RD	TURN		02	028,004	DRY	2	011	011	0	1	N	N
00015	01/05/2011	4P	WE	Millersburg	MORNING STAR RD 100 FT N OF OLD SALEM RD	HEAD		01,05	047,039	DRY	2	011	011	0	0	N	Y
00884	07/30/2010	6A	FR	Millersburg	NYGREN RD AT OLD SALEM RD	FIX	092,079	26		DRY	1	011		0	2	N	N
01482	12/08/2012	10A	SA	Millersburg	NYGREN RD 0 FT E OF OLD SALEM RD	FIX	079,053,062	12	080,081	WET	1	011		0	0	N	N
00606	05/26/2012	4P	SA	Millersburg	NE OLD SALEM RD 500 FT N OF NE LAUREN AVE	HEAD		05	080,039	DRY	2	011	011	0	0	N	N
00318	03/24/2013	1P	SU	Millersburg	OLD SALEM RD UNK FT UN OF	TURN		02	004,028	DRY	2	011	011	0	1	N	N
00189	02/10/2012	9P	FR	Millersburg	OLD SALEM RD 50 FT S OF ARNOLD RD	SS-O		33,06	051,032,045,	WET	2	011	011	0	0	N	N
00763	07/06/2011	8P	WE	Millersburg	OLD SALEM RD 1000 FT N OF ARNOLD RD	SS-O	040,053	06	032,080	DRY	2	011	011	0	3	N	N
01070	09/27/2013	11A	FR	Millersburg	OLD SALEM RD 2100 FT N OF ARNOLD RD	FIX	092,040,010	01	080,081	WET	1	011		0	0	N	Y
00410	04/07/2011	7P	TH	Millersburg	OLD SALEM RD 300 FT SW OF CONSER RD	TURN		02	028	DRY	2	011	011	0	0	N	N
01592	12/31/2011	6A	SA	Millersburg	OLD SALEM RD 300 FT S OF CONSER RD	FIX	124,040,058	01	080,081	ICE	1	011		0	1	N	Y
00259	02/18/2013	8A	MO	Millersburg	OLD SALEM RD 600 FT SW OF CONSER RD	FIX	040,058	16	080,081	DRY	1	011		0	0	N	N
00586	06/07/2013	10P	FR	Millersburg	OLD SALEM RD 700 FT N OF CONSER RD	FIX	040,053	16	080,081	DRY	1	011		0	1	N	N
01176	10/10/2012	6A	WE	Millersburg	OLD SALEM RD 200 FT SW OF KATHRYN ST	REAR		02,01	042,028	DRY	2	011	041	0	1	N	Y
00818	07/19/2012	12P	TH	Millersburg	OLD SALEM RD 2640 FT N OF KATHRYN ST	TURN	040	06	001,032	DRY	2	011	011	0	0	N	N
00450	04/18/2012	7A	WE	Millersburg	OLD SALEM RD 4600 FT N OF KATHRYN ST	REAR		07	026	DRY	2	011	011	0	0	N	N
00277	03/16/2010	1P	TU	Millersburg	OLD SALEM RD 50 FT NE OF MORNING STAR RD	FIX	040,058	10	080,081	UNK	1	011		0	0	N	N
00024	01/08/2013	9A	TU	Millersburg	OLD SALEM RD 300 FT NE OF MORNING STAR RD	TURN		02	028	DRY	2	011	011	0	2	N	N
00020	01/08/2012	7P	SU	Millersburg	OLD SALEM RD 100 FT NW OF NYGREN RD	FIX	124,079,072	32,01	052,047	DRY	1	011		0	0	N	Y
01318	11/18/2013	1P	MO	Millersburg	OLD SALEM RD 150 FT E OF NYGREN RD	SS-M	079,010	01	080,081	WET	2	011	011	0	2	N	Y
00365	04/06/2013	1A	SA	Millersburg	OLD SALEM RD 1584 FT SW OF SB EF OLD SALEM RD	FIX	040,053	16	080,081	WET	1	011		0	1	N	N
00354	04/03/2013	5P	WE	Millersburg	OLD SALEM RD AT WESTERN WAY	TURN		02	028	WET	2	011	011	0	2	N	N
01266	07/19/2013	7A	FR	Millersburg	WESTERN WAY 500 FT E OF OLD SALEM RD	BACK	092	27	016,011,026	DRY	2	011	011	0	0	N	N

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

STATE HIGHWAY SYSTEM CRASH LOCATIONS - DRIVER BEHAVIOR FORMAT

Century Drive (Hwy 001 frontage rd) & Old Salem Rd (Hwy 001 connection)

January 1, 2009 through December 31, 2013

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	COMPNT	MLG TYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP/OWN #1	#2	PEOPLE KILL	PEOPLE INJ	ALC	SPEED
00650	06/09/2011	4P	TH	*Linn	FR	R	HY 001, PACIFIC AT MP 235.70	REAR		07	042	DRY	2	011	011	0	2	N	N
01222	10/05/2011	5P	WE	*Linn	FR	R	HY 001, PACIFIC AT MP 235.70	TURN		02	004,028	WET	3	011	011	0	3	N	N
01472	12/02/2011	2P	FR	*Linn	FR	R	HY 001, PACIFIC AT MP 235.70	TURN		02	004,028	DRY	2	041	011	0	0	N	N
01259	10/22/2012	12P	MO	*Linn	FR	R	HY 001, PACIFIC AT MP 235.70	TURN		02		WET	2	011	011	0	0	N	N

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
STATE HIGHWAY SYSTEM CRASH LOCATIONS - DRIVER BEHAVIOR FORMAT

Old Salem Rd & I-5 (Hwy 001)
January 1, 2009 through December 31, 2013

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	COMPNT	MLG TYP	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	SURF	TOT VEH	VEHICLE TYP/OWN #1	VEHICLE TYP/OWN #2	PEOPLE KILL	PEOPLE INJ	ALC	SPEED
00502	04/29/2011	5P	FR	*Linn	CN	R	HY 001, PACIFIC AT MP 235.70	REAR		07	026	DRY	2	011	011	0	1	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
1	PRVTE	Private
2	GOVMT	Government
3	PUBLC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling
06	IMP-OVER	IMPROPER PASSING	Improper overtaking
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely
08	IMP-TURN	IMPROPER TURN	Made improper turn
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving
11	MECH-DEF	MECH DEFECT	Mechanical defect
12	OTHER	OTHER	Other (not improper driving)
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy
17	ILLNESS	PHYSICAL ILLNESS	Physical illness
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway
19	NT VISBL	NOT VISIBLE	Not visible: dark / non-reflective clothing
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted
25	TIREFAIL	TIRE FAILURE	Tire Failure
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle
27	INATTENT	INATTENTION	Inattention
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed
31	RACING	SPEED RACING	Speed Racing (per PAR)
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)
40	VIEW OBS	VIEW OBSCURED	View obscured
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	LTRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	LTRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TO CLOSE	FOLLW TO CLOS	Following too closely (must be on officer's report)
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes

ERR CODES

Code	Short Description	Medium Description	Long Description
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLSS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELSS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAYON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overturned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole – type unknown
053	POLE UTL	POLE-UTILITY	Pole – power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole – street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole – traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole – sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRRGL PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view

EVENT CODES

Code	Short Description	Medium Description	Long Description
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRACT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRACT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)

EVENT CODES

Code	Short Description	Medium Description	Long Description
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray

Appendix G – HSM Part B Worksheets

General & Site Information	
Analyst:	A Rogge
Agency/Company:	DEA
Date:	1/4/2016
Project Name:	Millersburg TSP

Intersection Crash Data

Intersection	Intersection Type	Year 2009-2013					Total
Woods Rd at Millersburg Dr	Urban 3ST	0					0
Old Salem Rd at Morning Star Rd	Urban 3ST	2					2
Woods Rd at Alexander Ln	Urban 3ST	0					0
Old Salem Rd at Alexander Ln	Urban 3ST	0					0
Woods Rd at Conser Rd	Urban 3ST	1					1
Old Salem Rd at Conser Rd	Urban 4ST	3					3
Old Salem Rd at Nygren Rd	Urban 3ST	2					2
Old Salem Rd at I-5/Old Salem Rd	Urban 3ST	2					2
Century Dr at Old Salem Rd	Urban 3ST	4					4
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
							0
	Total	14	0	0	0	0	14

Intersection Population Type Crash Rate				
Average Crash Rate per intersection type				
Intersection Pop. Type	Sum of Crashes	Sum of 5-year MEV	Avg Crash Rate for Ref Pop.	INT in Pop
Rural 3SG	0	0		
Rural 3ST	0	0		
Rural 4SG	0	0		
Rural 4ST	0	0		
Urban 3ST	11	61	0.1807	8
Urban 3SG	0	0		
Urban 4ST	3	13	0.2400	1
Urban 4SG	0	0		

Critical Rate Calculation								
Intersection	AADT Entering Intersection	5-year MEV	Crash Total	Intersection Population Type	Intersection Crash Rate	Reference Population Crash Rate	Critical Rate	Over Critical
Woods Rd at Millersburg Dr	350	0.6	0	Urban 3ST	0.00	0.18	1.84	Under
Old Salem Rd at Morning Star Rd	4,200	7.7	2	Urban 3ST	0.26	0.18	0.50	Under
Woods Rd at Alexander Ln	400	0.7	0	Urban 3ST	0.00	0.18	1.68	Under
Old Salem Rd at Alexander Ln	5,900	10.8	0	Urban 3ST	0.00	0.18	0.44	Under
Woods Rd at Conser Rd	650	1.2	1	Urban 3ST	0.84	0.18	1.24	Under
Old Salem Rd at Conser Rd	6,850	12.5	3	Urban 4ST	0.24	APM Exhibit 4-1		
Old Salem Rd at Nygren Rd	8,200	15.0	2	Urban 3ST	0.13	0.18	0.39	Under
Old Salem Rd at I-5/Old Salem Rd	9,300	17.0	2	Urban 3ST	0.12	0.18	0.38	Under
Century Dr at Old Salem Rd	4,350	7.9	4	Urban 3ST	0.50	0.18	0.49	**Over**

F. Technical Memorandum #6: Baseline Conditions and Needs

City of Millersburg Transportation System Plan

Technical Memorandum #6

(Task 4.2 Future Baseline Conditions and Needs)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

May 2016

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*Appendices available upon request

Future Baseline Conditions

The future baseline traffic analysis assesses conditions for the year 2040, which is consistent with regional forecasting through the study area. The analysis examines conditions where the transportation system has been improved by projects with programmed funding sources and where traffic volumes continue to grow based on population and employment forecasts. In addition to vehicular deficiencies, this memorandum addresses each modal element of the system including missing links, geometric deficiencies and safety needs.

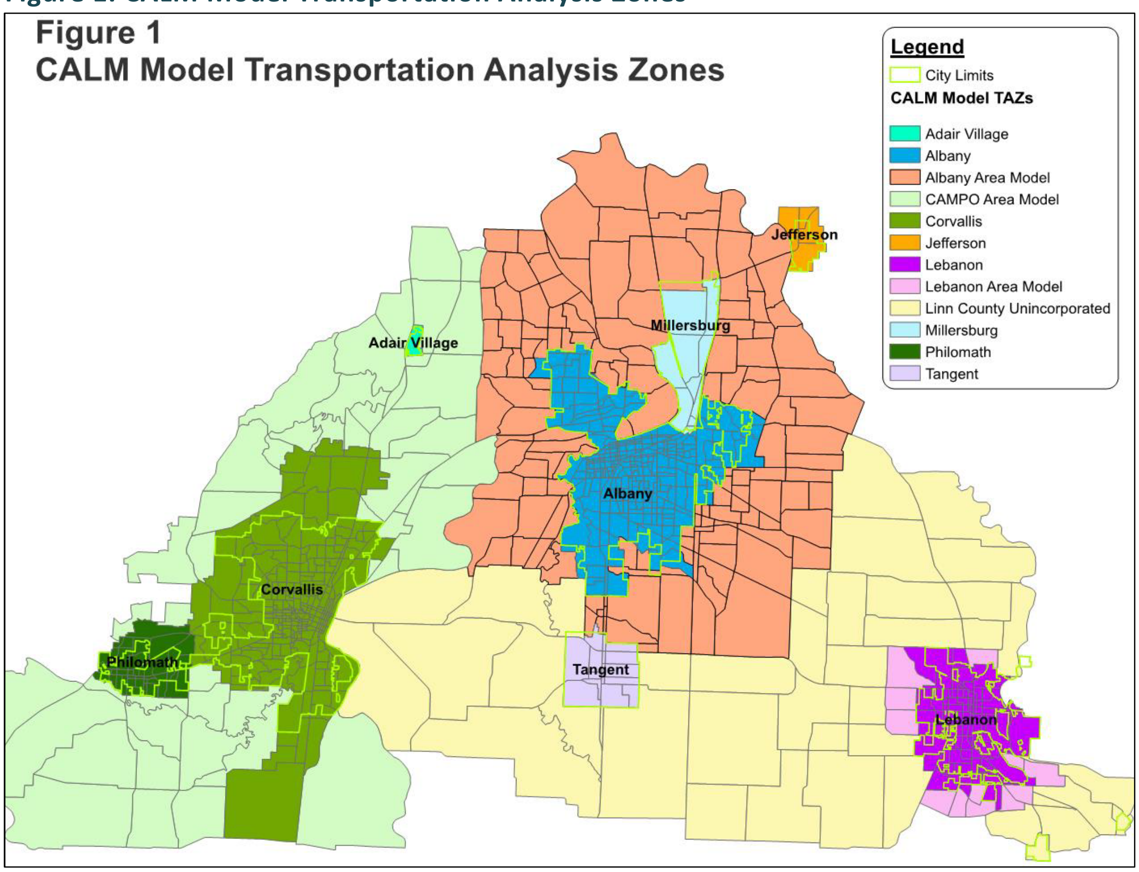
Future Traffic Volume Development

Future baseline traffic volume forecasts were developed using the Corvallis, Albany, Lebanon Model (CALM) travel demand forecasting model, which is based on the regional long-range land use assumptions for the year 2040 and future transportation roadway network (which includes financially constrained projects only). The travel demand forecasting process and resulting traffic forecasts are briefly described below.

Travel Demand Forecasting Model

The CALM travel demand forecasting model is maintained by the Transportation Planning Analysis Unit (TPAU) at ODOT. The CALM model was recently developed to provide a more comprehensive model of the communities in the mid-Willamette Valley region; its extents are shown in Figure 1. The model relies on socioeconomic data (e.g., households and employment) to determine travel demand and system attributes (e.g., roadway capacity, speeds, and distances) to represent the transportation supply.

Figure 1. CALM Model Transportation Analysis Zones



The travel demand model has a base year of 2010 and a future year of 2040 and the long-range regional growth forecasts are consistent with current land use zoning. The following sections further describe the models main elements (land use and transportation network). Appendix A contains the model outputs used to forecast the future traffic volumes.

Future Land Use

The Comprehensive Plan designations for the Cities of Albany, Jefferson, Millersburg and Tangent were referenced to develop projected land uses in the model area. Generally, future transportation activity within the CALM model is forecasted using household and employment information. Table 1 provides a summary of the land use metrics assumed in the 2010 and 2040 CALM model use for the traffic analysis. It is important to note that the Transportation Analysis Zones (TAZ) used in the CALM model do not match exactly with the boundary line of the Millersburg City Limits; the numbers are meant to show approximate growth in the area.

Table 1: CALM Model Land Use Changes, 2010 - 2040[1]

Millersburg Land Use Metric	Year 2010	Year 2040	% Increase
Households	382	526	38%
Employment	2055	3875	89%

Source: CALM Travel Demand Model

Note: The summary is based on boundaries approximated by the TAZ boundaries which may not line up exactly with the city limits.

In the Millersburg area, households are anticipated to increase by approximately 40 percent. Even more noticeable is the anticipated increase in employment by approximately 90 percent between year 2010 and year 2040. The traffic generated from population and households would likely travel on the arterials and collectors within Millersburg, as well as the local streets. Traffic generated by employment would likely have less impact on the local street network as vehicular trips could be entering from outside the city limits.

Future Transportation Network

The network used in the forecasts for Millersburg is a future network that includes roadway projects that are expected to occur by year 2040. These projects have known funding sources or are programmed to be funded in the next 25 years. There are no funded projects within the Millersburg study area that would impact the capacity of the transportation network in the future baseline model. The future traffic forecast does not include the build alternative identified in the I-5: South Jefferson to U.S. 20 Environmental Assessment. Funding for the freeway interchange improvements may not be available during the TSP planning horizon; therefore, the TSP will not consider how the local system works with the interchange improvements.

Traffic Forecasts

Traffic forecasts for the study area intersections were developed from the 2010 and 2040 forecasting models, and the existing traffic data, for the future baseline scenario. The process followed the

[1] PSU land use control totals for 2040 are still being developed and were not available at the time of the CALM development.

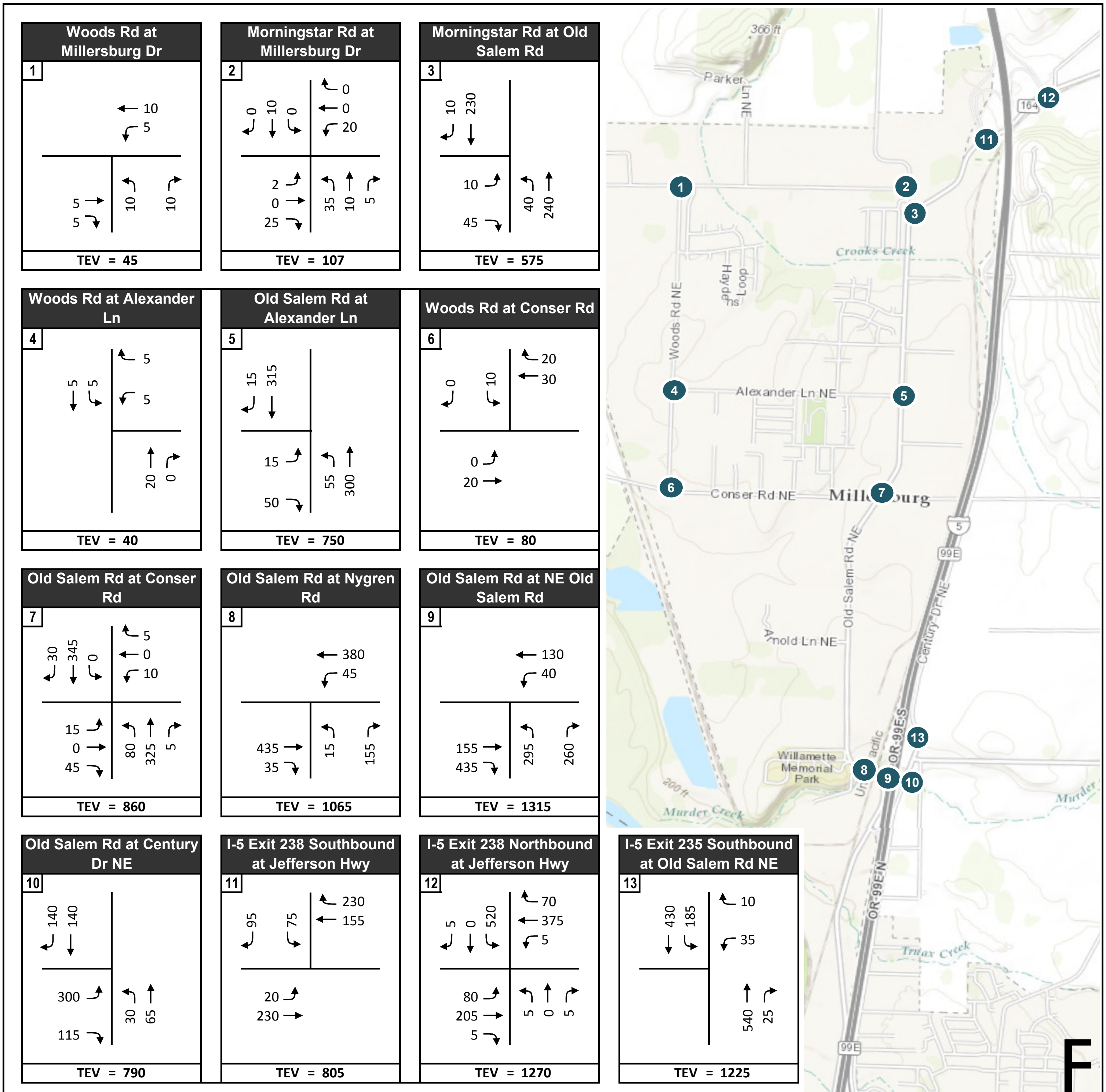
procedures from ODOT's Analysis Procedures Manual (APM)[2], specifically the guidelines listed in the National Cooperative Highway Research Program Report (NCHRP) 765. The post-processing was done on a link-basis and once the existing link volumes were forecasted to year 2040, they were converted into turning movement volumes at intersections.

Traffic volumes for the future baseline scenario are presented in Figure 2. The volume development spreadsheets are available in Appendix B of this memorandum, and a more detailed summary of the forecasting methodology is available in Appendix C.

Impacts to Title VI and Environmental Justice Populations

Title VI regulations are intended to prevent discrimination on the basis of race, color, national origin, sex (gender), age, disability, or socioeconomic status. By 2040, if no improvements are made, transportation options for Title VI and EJ populations will be lacking. Generally, Title VI and EJ populations benefit from increased multi-modal connections and public transit options which are current deficiencies of the Millersburg transportation system.

[2] Analysis Procedures Manual Version 2, Oregon Department of Transportation, Transportation Development Division Planning Section, Transportation Planning and Analysis Unit, Salem, Oregon, January, 2016, Chapter 6.



City of Millersburg: Transportation System Plan

Legend

Turning Movement

\#\#\# PM Peak Hour Volume

TEV: Total Entering Volume

STOP Control

Intersection Number

Intersection analyzed as part of the Albany Area MPO Transportation Study

Figure 2

Future (2040) Baseline Conditions
PM Peak Hour Traffic Volumes

Future Transportation Operations

The assessment of traffic conditions includes development of forecasted traffic volumes and an assessment of traffic operations.

Operational Criteria

Transportation engineers have established various methods for measuring traffic operations of roadways and intersections. Most jurisdictions use either volume-to-capacity (v/c) ratio or level of service (LOS) to establish performance criteria. Both the LOS and v/c ratio concepts require consideration of factors that include traffic demand, capacity of the intersection or roadway, delay, frequency of interruptions in traffic flow, relative freedom for traffic maneuvers, driving comfort, convenience, and operating cost.

Volume-to-Capacity (V/C) Ratio

A comparison of traffic volume demand to intersection capacity is one method of evaluating how well an intersection is operating. This comparison is presented as a v/c ratio. A v/c ratio of less than 1.00 indicates that the volume is less than capacity. When it is closer to 0, traffic conditions are generally good, with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable, with longer delays.

Level of Service (LOS)

Level of service is also a widely recognized and accepted measure and descriptor of traffic operations. LOS is a function of control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Six standards have been established, ranging from LOS A, where there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections.

It should be noted that, although delays can sometimes be long for some movements at a STOP-controlled intersection, the v/c ratio may indicate that there is adequate capacity to process the demand for that movement. For these reasons, it is important to examine both v/c ratio and LOS when evaluating overall intersection operations.

Traffic Operations Analysis Procedures

All operations were evaluated using the methodology outlined in the *2010 Highway Capacity Manual* (HCM) along with the procedures outlined in ODOT's APM. The Synchro analysis software was selected to perform the intersection analysis since it can provide the v/c ratio and LOS output of an HCM analysis and consider the systematic interaction of the intersections with regard to queuing and delays.

Synchro is a macroscopic model similar to the Highway Capacity Software (HCS), and like the HCS, is based on the 2010 HCM. The Synchro model explicitly evaluates traffic operations under coordinated and uncoordinated systems of signalized and unsignalized intersections. The v/c ratios and LOS presented in this report are based on the Synchro model output. The detailed Synchro analysis worksheets are presented in Appendix D.

Future Traffic Operations

Table 2 reports the operational results for the critical movement (worst movement that must stop or yield the right of travel to other traffic flows) with all individual movements reported in Figure 3. Critical movements at unsignalized intersections are typically the minor-street left turns or, in the case of single-lane approaches, the minor street approaches. These movements are required to yield to all other movements at the intersection and thus are subject to the longest delays and have the least capacity. Left turns from the major street are also subject to delays, since motorists making these maneuvers must also yield to oncoming major-street traffic.

Table 2. Future (Year 2040) PM Peak Hour Traffic Operations Analysis Results

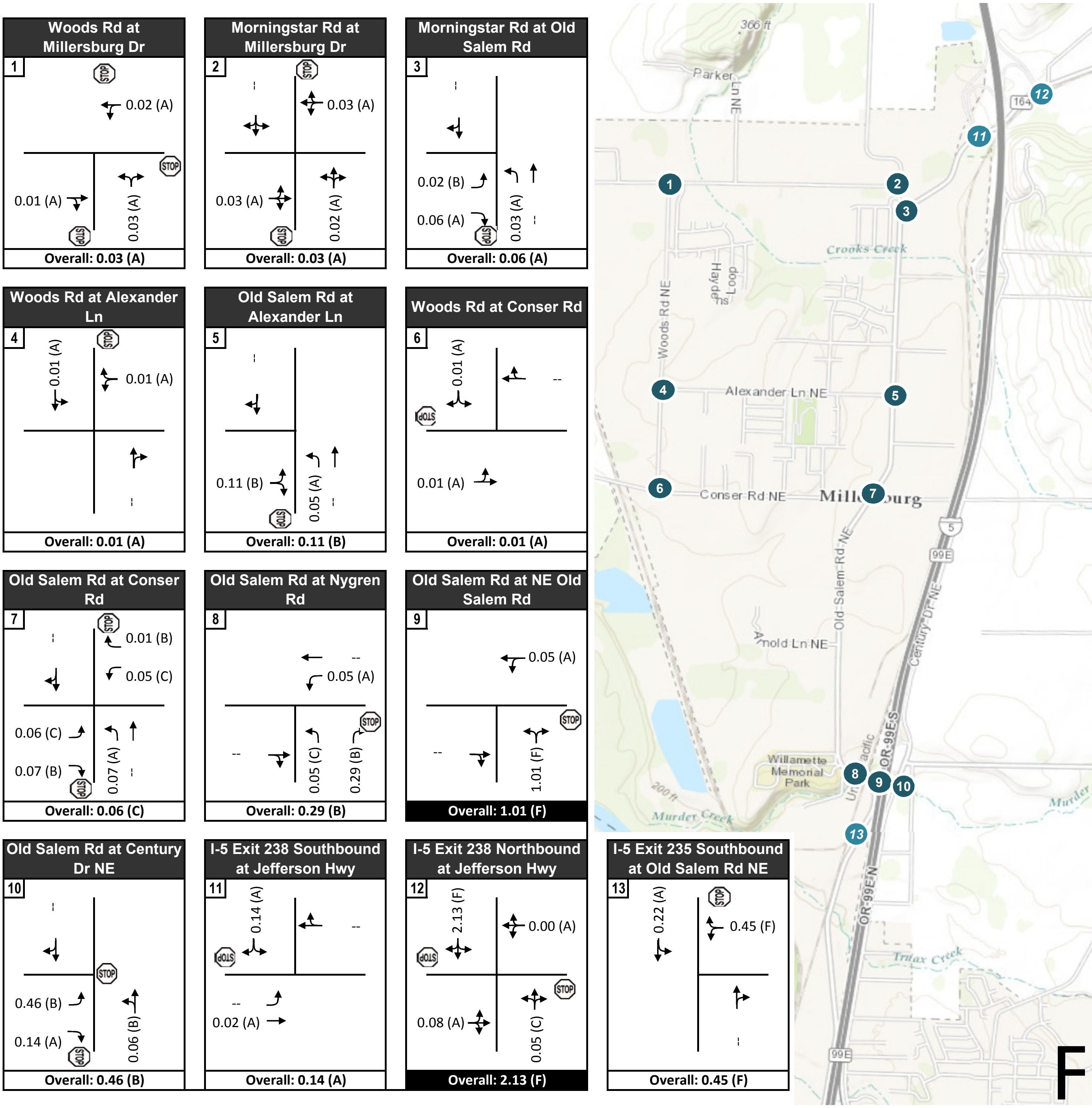
Intersection	Critical Movement[1]	V/C Ratio[2]	LOS[2]	OHP Target[3]
1. Woods Rd at Millersburg Dr	NB L/R	0.03	A	-
2. Morningstar Rd at Millersburg Dr	WB L/T/R[4]	0.03	A	-
3. Morningstar Rd at Old Salem Rd	EB R	0.06	A	-
4. Woods Rd at Alexander Ln	WB L/R	0.01	A	-
5. Old Salem Rd at Alexander Ln	EB L/R	0.11	B	-
6. Woods Rd at Conser Rd	SB L/R	0.01	A	-
7. Old Salem Rd at Conser Rd	EB L	0.06	C	-
8. Old Salem Rd at Nygren Rd	NB R	0.29	B	-
9. Old Salem Rd at NE Old Salem Rd	NB L/R	**1.01**	**F**	-
10. Old Salem Rd at Century Dr NE	EB L	0.46	B	-
11. I-5 Exit 238 Southbound at Jefferson Hwy	SB L/R	0.14	A	0.85
12. I-5 Exit 238 Northbound at Jefferson Hwy	SB L/R	**2.13**	**F**	0.85
13. I-5 Exit 235 Southbound at Old Salem Rd	WB L/R	0.45	F	0.85

Acronyms: EB = eastbound; WB = westbound; NB = northbound; and SB = southbound. L = left; T = through; and R = right.
SHADED cells exceed capacity and/or OHP Mobility Target
Notes:
1. At intersections the results are reported for all movements that must stop or yield the right of travel to other traffic flows.
2. The v/c ratios and LOS are based on the results of the macrosimulation analysis using Synchro, which cannot account for the influence of adjacent intersection operations.
3. 1999 Oregon Highway Plan (OHP), Policy 1F applies to existing and no-build conditions through the planning horizon.
4. The east leg is of this intersection is a driveway to a freight strategies and delivery company.
5. At publication, only overall intersection operations were available; analysis of this intersection is being completed as part of the Albany Area MPO Transportation Study

Source: David Evans and Associates, Inc.

The analysis results show that under the 2040 future baseline conditions, most of the study area intersections would meet operational standards during the PM peak period. The intersections of Old Salem Road at NE Old Salem Road and I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164) are expected to exceed capacity, with volume-to-capacity (V/C) ratios exceeding 1.0 and operating at Level of Service (LOS) F. The operational outputs at these intersections could lead to queuing concerns as well.

The remaining study area intersections are expected to operate well below mobility targets. However, the intersection of Old Salem Road at Century Drive has an unconventional STOP-control that could potentially create safety and queuing concerns with the increased vehicular volume.



City of Millersburg: Transportation System Plan

Legend

Lane Configureation

0.01 (A) Lane Group V/C (LOS)

Volume-to-Capacity Ratio (Level of Service)

-- Operations only reported for stopped or yielding movements

Intersection operates above Mobility Target

STOP Control

Intersection Number

Intersection analyzed as part of the Albany Area MPO Transportation Study

Figure 3

Future (2040) Baseline Conditions
PM Peak Hour Traffic Operations

MillersburgTSP Transportation System Plan

Summary of Future Deficiencies

Most of the study area intersections operate within operational standards for the future (year 2040) scenario, with the exception of two intersections: Old Salem Road at NE Old Salem Road and I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164). Many of the deficiencies identified in *Technical Memorandum #5: Evaluate Existing Conditions* are expected to contribute to future deficiencies. Network connectivity (all modes) and sub-standard roadway cross-sections would be expected to worsen without any planned improvements/maintenance and the increased traffic volumes on the transportation network. To supplement the deficiencies presented in TM #5, the future deficiencies that are new are summarized in Table 3.

Table 3. Summary of Future Deficiencies

Deficiencies	Location
Operational	
Over Capacity	(V/C > 1.0): • Old Salem Road at NE Old Salem Road • I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164)
Queuing Concerns	• Old Salem Road at NE Old Salem Road – Northbound movements • I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164) – Queuing on Ramp • Old Salem Road at Century Drive – Eastbound and northbound left movements
Bicycle and Pedestrian Facilities	
Old Salem Road	• Anticipated increase in traffic volumes could increase stress on road cyclists
Regional Trails	• Development of a regional trails plan (identified as a regionally significant need as part of a previous planning effort by the Linn County Park and Recreation Plan)

CITY OF MILLERSBURG TRANSPORTATION SYSTEM PLAN

DRAFT Technical Memorandum #6 APPENDICES
(Task 4.2 Future Baseline Conditions and Needs)
For PMT review_v1

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

January 2016

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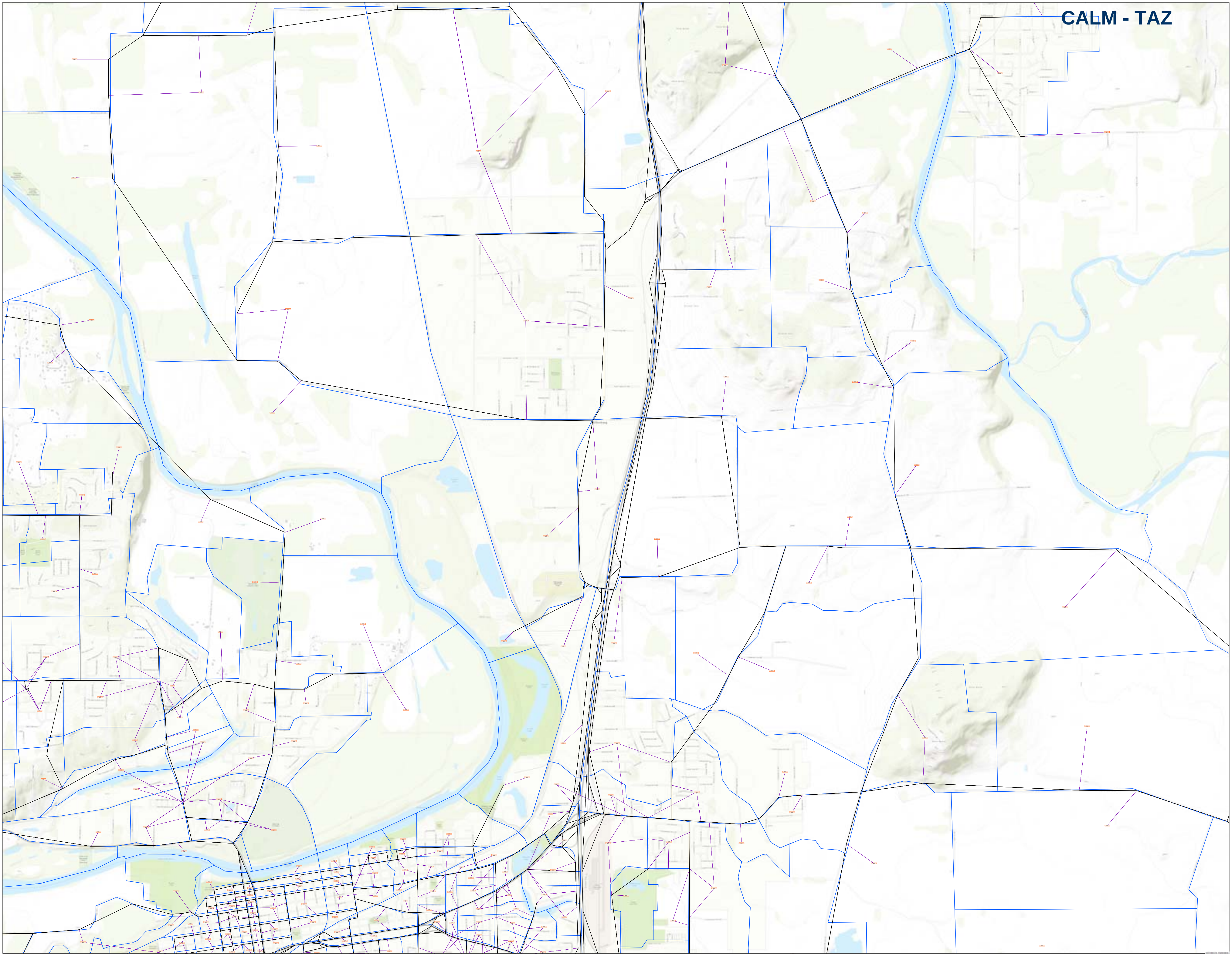
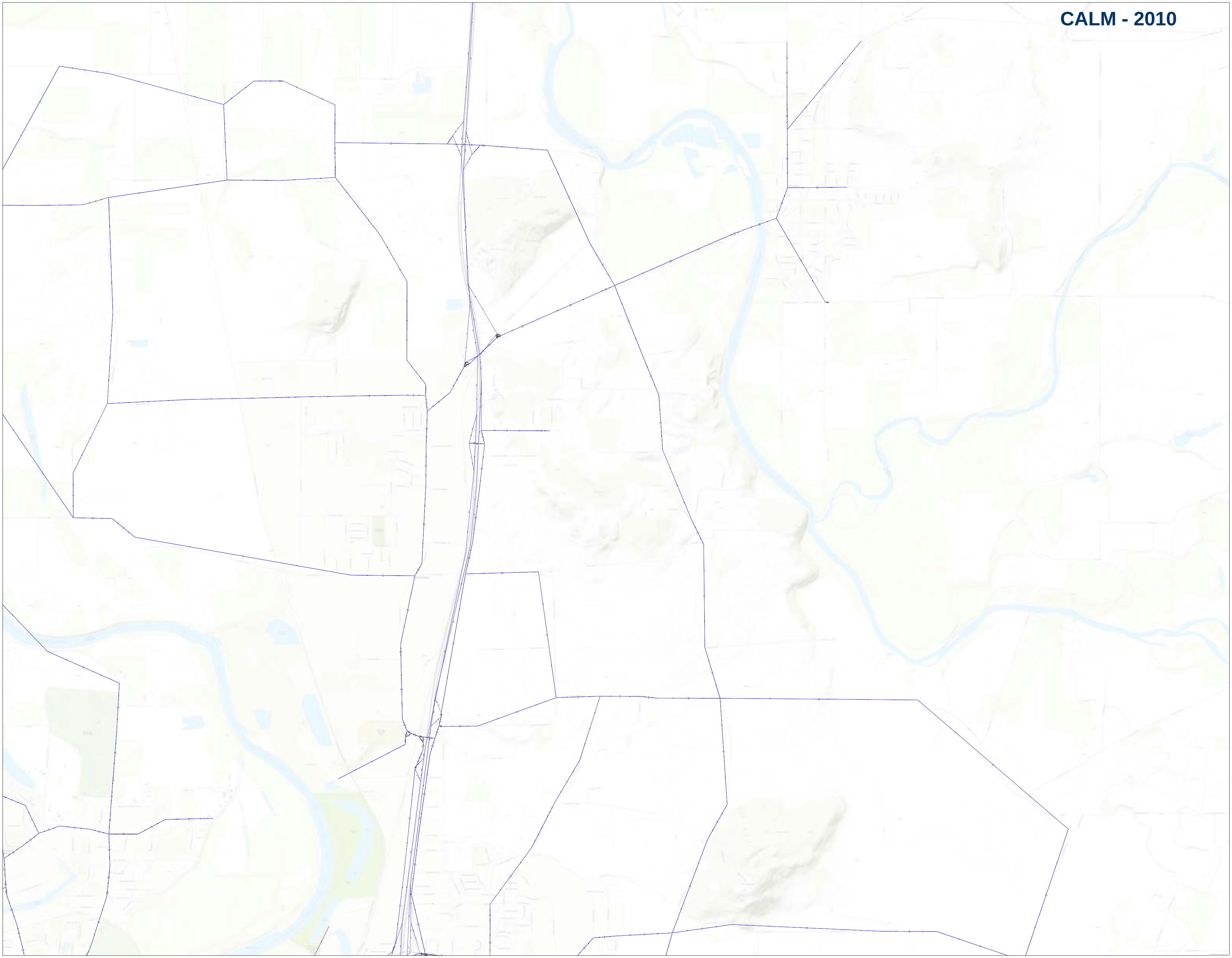
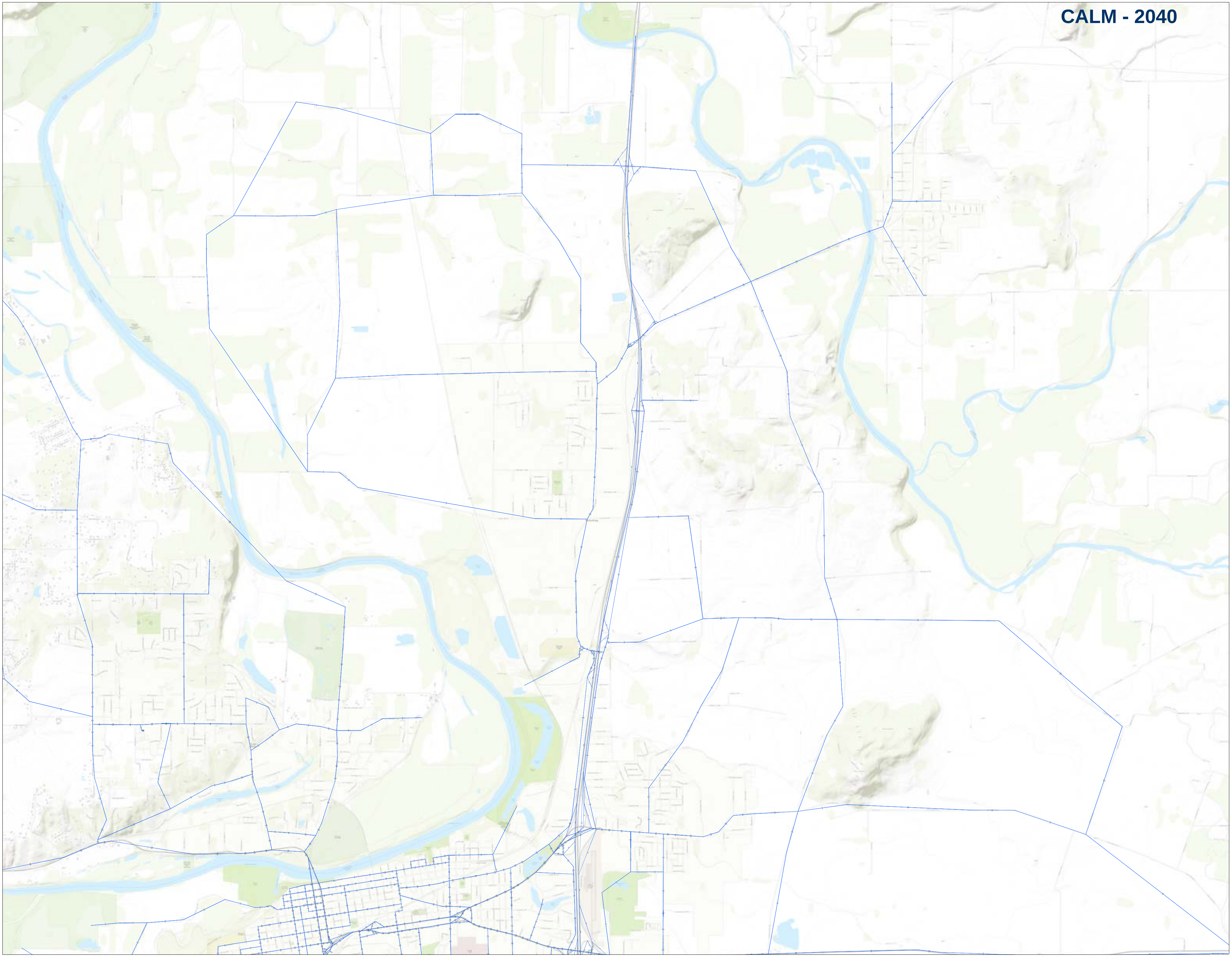
Appendix A – CALM Model Outputs


CALM - TAZ

CALM - 2010




CALM - 2040

Appendix B – Future Traffic Volume Development

Project: Millersburg TSP

Subject: **Future Baseline Traffic Forecasts - 2040**
PM Volumes

Needs to be updated

Road	From	To	Direction	30HV Existing Volumes 2015	Model Assigment Baseline Model 2010	Model Assigment Future Ref Model 2040	2010-2040 Model Comparison Annual Growth	Base Adj. to 2015 — 2015	2010-2040 Model Comparison Total Growth	2015-2040 Model Comparison Total Growth	2015-2040 Model Comparison Volume Difference	2040 Volume Estimates Volume Difference	2040 Volume Estimates Volume Growth	2040 Volume Estimates Absolute Difference	2040 Volume Estimates Average	Forecast Used	Method Used
Millersburg Dr	W of Woods Rd	Woods Rd	EB	10	2	2	0.0%	2	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Woods Rd	W of Woods Rd	WB	15	2	2	0.0%	2	0.0%	0.0%	0	15	15	0%	15	**15**	Average of Difference and Growth
	Woods Rd	Sink 1	EB	10	2	2	0.0%	2	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Sink 1	Woods Rd	WB	15	2	2	0.0%	2	0.0%	0.0%	0	15	15	0%	15	**15**	Average of Difference and Growth
	Sink 1	Morningstar Rd	EB	20	23	26	0.4%	24	12.6%	10.3%	2	22	22	2%	22	**22**	Average of Difference and Growth
	Morningstar Rd	Sink 1	WB	30	36	41	0.4%	37	12.9%	10.5%	4	34	33	2%	34	**34**	Average of Difference and Growth
	Morningstar Rd	Driveway	EB	5	*1*	*1*	0.0%	1	0.0%	0.0%	0	5	5	0%	5	**5**	Average of Difference and Growth
	Driveway	Morningstar Rd	WB	20	*1*	*1*	0.0%	1	0.0%	0.0%	0	20	20	0%	20	**20**	Average of Difference and Growth
Alexander Lane	Woods Rd	Sink 2	EB	5	*1*	*1*	0.0%	1	0.0%	0.0%	0	5	5	0%	5	**5**	Average of Difference and Growth
	Sink 2	Woods Rd	WB	10	*1*	*1*	0.0%	1	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Sink 2	Old Salem Rd	EB	55	12	20	2.3%	13	68.0%	50.9%	7	62	83	29%	72	**62**	Difference Method
	Old Salem Rd	Sink 2	WB	65	15	23	1.7%	17	51.6%	39.6%	7	72	91	24%	81	**72**	Difference Method
Conser Rd	W of Woods Rd	Woods Rd	EB	40	20	19	-0.2%	20	-5.0%	-4.2%	-1	39	38	2%	39	**39**	Average of Difference and Growth
	Woods Rd	W of Woods Rd	WB	20	36	37	0.1%	36	2.8%	2.3%	1	21	20	2%	21	**21**	Average of Difference and Growth
	Woods Rd	Sink 3	EB	25	26	25	-0.1%	26	-3.8%	-3.2%	-1	24	24	0%	24	**24**	Average of Difference and Growth
	Sink 3	Woods Rd	WB	40	42	44	0.2%	42	4.8%	3.9%	2	42	42	0%	42	**42**	Average of Difference and Growth
	Sink 3	Old Salem Rd	EB	55	38	44	0.5%	39	16.0%	13.0%	5	60	62	3%	61	**61**	Average of Difference and Growth
	Old Salem Rd	Sink 3	WB	95	64	77	0.6%	66	19.5%	15.7%	10	105	110	4%	108	**108**	Average of Difference and Growth
	Old Salem Rd	E of Old Salem Rd	EB	0	*1*	*1*	0.0%	1	0.0%	0.0%	0	0	0	#DIV/0!	0	**0**	Average of Difference and Growth
	E of Old Salem Rd	Old Salem Rd	WB	15	*1*	*1*	0.0%	1	0.0%	0.0%	0	15	15	0%	15	**15**	Average of Difference and Growth
Woods Rd	Millersburg Dr	Sonora Dr	SB	10	*9*	*9*	0.0%	9	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Sonora Dr	Millersburg Dr	NB	10	*13*	*13*	0.0%	13	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Sonora Dr	Alexander Ln	SB	10	*9*	*9*	0.0%	9	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Alexander Ln	Sonora Dr	NB	25	*13*	*13*	0.0%	13	0.0%	0.0%	0	25	25	0%	25	**25**	Average of Difference and Growth
	Alexander Ln	Sink 4	SB	10	*8*	*8*	0.0%	8	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Sink 4	Alexander Ln	NB	20	*12*	*12*	0.0%	12	0.0%	0.0%	0	20	20	0%	20	**20**	Average of Difference and Growth
	Sink 4	Conser Rd	SB	10	*8*	*8*	0.0%	8	0.0%	0.0%	0	10	10	0%	10	**10**	Average of Difference and Growth
	Conser Rd	Sink 4	NB	20	*12*	*12*	0.0%	12	0.0%	0.0%	0	20	20	0%	20	**20**	Average of Difference and Growth
Morningstar Rd	N of Millersburg Dr	Millersburg Dr	SB	10	5	6	0.7%	5	20.0%	16.1%	1	11	12	7%	11	**11**	Average of Difference and Growth
	Millersburg Dr	N of Millersburg Dr	NB	10	11	14	0.9%	12	27.3%	21.7%	3	13	12	3%	12	**12**	Average of Difference and Growth
	Millersburg Dr	Old Salem Rd	SB	50	24	25	0.1%	24	4.2%	3.4%	1	51	52	2%	51	**51**	Average of Difference and Growth
	Old Salem Rd	Millersburg Dr	NB	45	40	45	0.4%	41	12.5%	10.2%	4	49	50	1%	49	**49**	Average of Difference and Growth
Old Salem Rd	E of NB Ramps	NB Ramps	SB	255	394	587	1.6%	426	49.0%	37.7%	161	416	351	17%	384	**416**	Difference Method
	NB Ramps	E of NB Ramps	NB	410	486	824	2.3%	542	69.5%	51.9%	282	692	623	10%	657	**692**	Difference Method
	NB Ramps	SB Ramps	SB	215	332	491	1.6%	359	47.9%	37.0%	133	348	294	17%	321	**348**	Difference Method
	SB Ramps	NB Ramps	NB	175	62	135	3.9%	74	117.7%	82.0%	61	236	319	30%	277	**236**	Difference Method
	SB Ramps	Morningstar Rd	SB	160	98	188	3.1%	113	91.8%	66.4%	75	235	266	12%	251	**235**	Difference Method
	Morningstar Rd	SB Ramps	NB	175	60	136	4.2%	73	126.7%	87.2%	63	238	328	32%	283	**238**	Difference Method
	Morningstar Rd	Steelhead Run Dr	SB	185	108	196	2.7%	123	81.5%	59.8%	73	258	296	13%	277	**258**	Difference Method
	Steelhead Run Dr	Morningstar Rd	NB	210	86	164	3.0%	99	90.7%	65.7%	65	275	348	23%	311	**275**	Difference Method
	Steelhead Run Dr	Alexander Ln	SB	255	147	239	2.1%	162	62.6%	47.2%	77	332	375	12%	354	**332**	Difference Method
	Alexander Ln	Steelhead Run Dr	NB	245	87	179	3.5%	102	105.7%	74.9%	77	322	429	28%	375	**322**	Difference Method
	Alexander Ln	Palm Harbor Dr	SB	280	159	253	2.0%	175	59.1%	44.8%	78	358	406	12%	382	**358**	Difference Method
	Palm Harbor Dr	Alexander Ln	NB	280	202	301	1.6%	219	49.0%	37.8%	83	363	386	6%	374	**374**	Average of Difference and Growth
	Palm Harbor Dr	Conser Rd	SB	295	159	253	2.0%	175	59.1%	44.8%	78	373	427	13%	400	**373**	Difference Method
	Conser Rd	Palm Harbor Dr	NB	260	202	301	1.6%	219	49.0%	37.8%	83	343	358	4%	350	**350**	Average of Difference and Growth
	Conser Rd	Arnold Rd	SB	330	177	260	1.6%	191	46.9%	36.2%	69	399	450	12%	424	**399**	Difference Method
	Arnold Rd	Conser Rd	NB	320	232	316	1.2%	246	36.2%	28.5%	70	390	411	5%	401	**401**	Average of Difference and Growth
	Arnold Rd	Nygren Rd	EB	400	200	308	1.8%	218	54.0%	41.3%	90	490	565	14%	528	**490**	Difference Method
	Nygren Rd	Arnold Rd	WB	322	236	327	1.3%	251	38.6%	30.2%	76	398	419	5%	409	**409**	Average of Difference and Growth
	Nygren Rd	Old Salem Rd	EB	470	330	471	1.4%	354	42.7%	33.2%	118	588	626	6%	607	**607**	Average of Difference and Growth
	Old Salem Rd	Nygren Rd	WB	345	266	335	0.9%	278	25.9%	20.7%	58	403	416	3%	409	**409**	Average of Difference and Growth
	Old Salem Rd	Century Dr	EB	170	131	434	7.7%	182	231.3%	139.1%	253	423	407	4%	415	**415**	Average of Difference and Growth
	Century Dr	Old Salem Rd	WB	155	239	237	0.0%	239	-0.8%	-0.7%	-2	153	154	0%	154	**154**	Average of Difference and Growth
Century Dr	N of Old Salem Rd	Old Salem Rd	SB	155	172	322	2.9%	197	87.2%	63.5%	125	280	253	10%	267	**267**	Average of Difference and Growth
	Old Salem Rd	N of Old Salem Rd	NB	150	96	357	9.1%	140	271.9%	155.9%	218	368	384	4%	376	**376**	Average of Difference and Growth
	Old Salem Rd	S of Old Salem Rd	SB	130	106	254	4.7%	131	139.6%	94.4%	123	253	253	0%	253	**253**	Average of Difference and Growth
	S of Old Salem Rd	Old Salem Rd	NB	110	137	93	-1.1%	130	-32.1%	-28.3%	-37	73	79	7%	76	**76**	Average of Difference and Growth
Old Salem Rd (other)	Old Salem Rd	S of Old Salem Rd	SB	405	250	328	1.0%	263	31.2%	24.7%	65	470	505	7%	488	**488**	Average of Difference and Growth
	S of Old Salem Rd	Old Salem Rd	NB	305	80	389	12.9%	132	386.3%	195.8%	258	563	902	46%	732	**563**	Difference Method
Nygren Rd	Old Salem Rd	S of Old Salem Rd	SB	30	52	110	3.7%	62	111.5%	78.4%	48	78	54	38%	66	**78**	Difference Method
	S of Old Salem Rd	Old Salem Rd	NB	77	150	265	2.6%	169	76.7%	56.7%	96	173	121	36%	147	**173**	Difference Method
NB Ramps	N of Old Salem Rd	Old Salem Rd	SB	260	444	720	2.1%	490	62.2%	46.9%	230	490	382	25%	436	**490**	Difference Method
	Old Salem Rd	N of Old Salem Rd	NB	100	82	129	1.9%	90	57.3%	43.6%	39	139	144	3%	141	**141**	Average of Difference and Growth
SB Ramps	N of Old Salem Rd	Old Salem Rd	SB	125	44	94	3.8%	52	113.6%	79.6%	42	167	225	30%	196	**167**	Difference Method
	Old Salem Rd	N of Old Salem Rd	NB	130	275	398	1.5%	296	44.7%	34.7%	103	233	175	28%	204	**233**	Difference Method

Average of Difference and Growth
Difference Method

Sidestreets not included in the regional model
Greater than 10% difference between difference and growth methods - Use difference method
Numbers adjusted from model to work with spreadsheet (0 growth = 1)

TAZ 525 **Loads onto Millersburg Dr, Conser Rd, and Old Stage Rd**
Adjusting the volumes loading onto Old Stage Rd from "Alexander" to redistribute to Millersburg and Conser also:

		30HV	2010	2040
Total	**EB**		**28**	**47**
	WB		**45**	**68**
Millersburg Dr	EB	20	4	7
	WB	30	7	11
Alexander Ln	EB	55	12	20
	WB	65	15	23
Conser Rd	EB	55	12	20
	WB	95	22	34

Project: Millersburg TSP Update

Subject: *PM Turning Movement Volumes*

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N-S ID	Synchro ID	Intersection	Direction	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	30th Highest Hour 2015 Balanced Volumes PM Peak	2040 NCHRP 255-Base Unbalanced Future Baseline	2040 NCHRP 255-Base Rounded Future Baseline	2040 NCHRP 255-Base Volume Balancing Adjustments	2040 NCHRP 255-Base Balanced Future Baseline
1	10	Woods Rd at Millersburg Dr		EBL	10	0	0	0	0	0	0
	10		EB	EBT	10	3	5	5	5	0	5
	10	Count Date: 5/21/2015		EBR	10	4	5	5	5	0	5
	10			WBL	10	2	5	5	5	0	5
	10		WB	WBT	10	10	10	10	10	0	10
	10			WBR	10	0	0	0	0	0	0
	10	PM Peak Hour: 5:15 PM-6:15 PM		NBL	10	3	5	5	5	5	10
	10	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	10	0	0	0	0	0	0
	10			NBR	10	4	5	5	5	5	10
	10			SBL	10	0	0	0	0	0	0
	10	PHF:	SB	SBT	10	0	0	0	0	0	0
	10	0.65		SBR	10	0	0	0	0	0	0
			TEV	**TEV**	**10**	**26**	**35**	**35**	**35**	**10**	**45**
2	20	Morningstar Rd at Millersburg Dr		EBL	20	1	0	0	0	2	2
	20		EB	EBT	20	0	0	0	0	0	0
	20	Count Date: 5/21/2015		EBR	20	18	20	21	20	5	25
	20			WBL	20	17	20	19	20	0	20
	20		WB	WBT	20	0	0	0	0	0	0
	20			WBR	20	0	0	0	0	0	0
	20	PM Peak Hour: 5:15 PM-6:15 PM		NBL	20	29	30	34	35	0	35
	20	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	20	12	10	12	10	0	10
	20			NBR	20	0	5	5	5	0	5
	20			SBL	20	0	0	0	0	0	0
	20	PHF:	SB	SBT	20	9	10	11	10	0	10
	20	0.84		SBR	20	1	0	0	0	0	0
			TEV	**TEV**	**20**	**87**	**95**	**102**	**100**	**7**	**107**
3	30	Morningstar Rd at Old Salem Rd		EBL	30	15	15	12	10	0	10
	30		EB	EBT	30	0	0	0	0	0	0
	30	Count Date: 5/21/2015		EBR	30	31	35	38	40	5	45
	30			WBL	30	0	0	0	0	0	0
	30	**Signalized**	WB	WBT	30	0	0	0	0	0	0
	30			WBR	30	0	0	0	0	0	0
	30	PM Peak Hour: 4:45 PM-5:45 PM		NBL	30	31	35	40	40	0	40
	30	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	30	163	175	226	225	15	240
	30			NBR	30	0	0	0	0	0	0
	30			SBL	30	0	0	0	0	0	0
	30	PHF:	SB	SBT	30	137	150	220	220	10	230
	30	0.87		SBR	30	11	10	10	10	0	10
			TEV	**TEV**	**30**	**388**	**420**	**546**	**545**	**30**	**575**
4	40	Woods Rd at Alexander Ln		EBL	40	0	0	0	0	0	0
	40		EB	EBT	40	0	0	0	0	0	0
	40	Count Date: 5/21/2015		EBR	40	0	0	0	0	0	0
	40			WBL	40	4	5	5	5	0	5
	40		WB	WBT	40	0	0	0	0	0	0
	40			WBR	40	3	5	5	5	0	5
	40	PM Peak Hour: 10:15 AM-11:15 AM		NBL	40	0	0	0	0	0	0
	40	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	40	21	20	20	20	0	20
	40			NBR	40	0	0	0	0	0	0
	40			SBL	40	3	5	5	5	0	5
	40	PHF:	SB	SBT	40	5	5	5	5	0	5
	40	0.75		SBR	40	0	0	0	0	0	0
			TEV	**TEV**	**40**	**36**	**40**	**40**	**40**	**0**	**40**
5	50	Old Salem Rd at Alexander Ln		EBL	50	13	15	15	15	0	15
	50		EB	EBT	50	0	0	0	0	0	0
	50	Count Date: 5/21/2015		EBR	50	39	40	46	45	5	50
	50			WBL	50	0	0	0	0	0	0
	50		WB	WBT	50	0	0	0	0	0	0
	50			WBR	50	0	0	0	0	0	0
	50	PM Peak Hour: 4:45 PM-5:45 PM		NBL	50	44	50	57	55	0	55
	50	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	50	211	230	307	305	-5	300
	50			NBR	50	0	0	0	0	0	0
	50			SBL	50	0	0	0	0	0	0
	50	PHF:	SB	SBT	50	222	240	312	310	5	315
	50	0.91		SBR	50	16	15	14	15	0	15
			TEV	**TEV**	**50**	**545**	**590**	**752**	**745**	**5**	**750**
6	60	Woods Rd at Conser Rd		EBL	60	1	0	0	0	0	0
	60		EB	EBT	60	14	15	19	20	0	20
	60	Count Date: 5/21/2015		EBR	60	0	0	0	0	0	0
	60			WBL	60	0	0	0	0	0	0
	60		WB	WBT	60	21	20	21	20	10	30
	60			WBR	60	21	20	20	20	0	20
	60	PM Peak Hour: 5:45 PM-6:45 PM		NBL	60	0	0	0	0	0	0
	60	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	60	0	0	0	0	0	0

Project: Millersburg TSP Update

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N-S ID	Synchro ID	Intersection	Direction	Movement	Int ID	Existing Counts 1-Hr Volume PM Peak	30th Highest Hour 2015 Balanced Volumes PM Peak	2040 NCHRP 255-Base Unbalanced Future Baseline	2040 NCHRP 255-Base Rounded Future Baseline	2040 NCHRP 255-Base Volume Balancing Adjustments	2040 NCHRP 255-Base Balanced Future Baseline
	60			NBR	60	0	0	0	0	0	0
	60			SBL	60	8	10	5	5	5	10
	60	PHF:	SB	SBT	60	0	0	0	0	0	0
	60	0.74		SBR	60	0	0	0	0	0	0
			TEV	**TEV**	**60**	**65**	**65**	**65**	**65**	**15**	**80**
7	70	Old Salem Rd at Conser Rd		EBL	70	11	10	15	15	0	15
	70		EB	EBT	70	0	0	0	0	0	0
	70	Count Date: 5/21/2015		EBR	70	40	45	46	45	0	45
	70			WBL	70	11	10	9	10	0	10
	70	Signalized	WB	WBT	70	2	0	0	0	0	0
	70			WBR	70	3	5	7	5	0	5
	70	PM Peak Hour: 4:00 PM-5:00 PM		NBL	70	67	75	78	80	0	80
	70	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	70	226	245	328	330	-5	325
	70			NBR	70	5	0	0	0	5	5
	70			SBL	70	0	0	0	0	0	0
	70	PHF:	SB	SBT	70	256	275	345	345	0	345
	70	0.93		SBR	70	17	20	29	30	0	30
			TEV	**TEV**	**70**	**638**	**685**	**857**	**860**	**0**	**860**
8	80	Old Salem Rd at Nygren Rd		EBL	80	0	0	0	0	0	0
	80		EB	EBT	80	363	395	451	450	-15	435
	80	Count Date: 5/21/2015		EBR	80	5	5	33	35	0	35
	80			WBL	80	24	25	45	45	0	45
	80		WB	WBT	80	297	320	392	390	-10	380
	80			WBR	80	0	0	0	0	0	0
	80	PM Peak Hour: 4:00 PM-5:00 PM		NBL	80	2	2	16	15	0	15
	80	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	80	0	0	0	0	0	0
	80			NBR	80	69	75	155	155	0	155
	80			SBL	80	0	0	0	0	0	0
	80	PHF:	SB	SBT	80	0	0	0	0	0	0
	80	0.85		SBR	80	0	0	0	0	0	0
			TEV	**TEV**	**80**	**760**	**822**	**1094**	**1090**	**-25**	**1065**
9	90	Old Salem Rd at NE Old Salem Rd		EBL	90	0	0	0	0	0	0
	90		EB	EBT	90	78	90	153	155	0	155
	90	Count Date: 5/21/2015		EBR	90	351	380	449	450	-15	435
	90			WBL	90	23	25	38	40	0	40
	90		WB	WBT	90	119	130	114	115	15	130
	90			WBR	90	0	0	0	0	0	0
	90	PM Peak Hour: 4:00 PM-5:00 PM		NBL	90	206	225	295	295	0	295
	90	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	90	0	0	0	0	0	0
	90			NBR	90	73	80	262	260	0	260
	90			SBL	90	0	0	0	0	0	0
	90	PHF:	SB	SBT	90	0	0	0	0	0	0
	90	0.87		SBR	90	0	0	0	0	0	0
			TEV	**TEV**	**90**	**850**	**930**	**1312**	**1315**	**0**	**1315**
10	100	Old Salem Rd at Century Dr NE		EBL	100	86	95	313	315	-15	300
	100		EB	EBT	100	0	0	0	0	0	0
	100	Count Date: 5/21/2015		EBR	100	69	75	115	115	0	115
	100			WBL	100	0	0	0	0	0	0
	100		WB	WBT	100	0	0	0	0	0	0
	100			WBR	100	0	0	0	0	0	0
	100	PM Peak Hour: 4:45 PM-5:45 PM		NBL	100	49	55	16	15	15	30
	100	PM Peak Hour Used: 4:45 PM-5:45 PM	NB	NBT	100	52	55	63	65	0	65
	100			NBR	100	0	0	0	0	0	0
	100			SBL	100	0	0	0	0	0	0
	100	PHF:	SB	SBT	100	52	55	138	140	0	140
	100	0.93		SBR	100	90	100	138	140	0	140
			TEV	**TEV**	**100**	**398**	**435**	**782**	**790**	**0**	**790**
11	110	I-5 Exit 238 Southbound at Jefferson Hwy		EBL	110	58	60		0	0	0
	110		EB	EBT	110	0	0		0	0	0
	110	I-5 Exit 238 Southbound at Jefferson Hwy		EBR	110	64	65		0	0	0
	110			WBL	110	0	0		0	0	0
	110		WB	WBT	110	0	0		0	0	0
	110			WBR	110	0	0		0	0	0
	110	**Volumes from Albany Area MPO Transportation Study - DKS study**		NBL	110	11	10		0	0	0
	110		NB	NBT	110	167	165		0	0	0
	110			NBR	110	0	0		0	0	0
	110			SBL	110	0	0		0	0	0
	110	Volume Difference: 0	SB	SBT	110	96	95		0	0	0
	110	0.00		SBR	110	121	120		0	0	0
			TEV	**TEV**	**110**	**517**	**515**	**1046**	**0**	**0**	**0**
12	120	I-5 Exit 238 Northbound at Jefferson Hwy		EBL	120	60	60		0	0	0
	120		EB	EBT	120	153	155		0	0	0

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	120	I-5 Exit 238 Northbound at Jefferson Hwy		EBR	120	1	0		0	0	0
	120		WB	WBL	120	1	0		0	0	0
	120			WBT	120	214	215		0	0	0
	120			WBR	120	40	40		0	0	0
	12	Volumes from Albany Area MPO Transportation Study - DKS study	NB	NBL	120	0	0		0	0	0
	12			NBT	120	0	0		0	0	0
	12			NBR	120	0	0		0	0	0
	12		SB	SBL	120	257	255		0	0	0
	12	Volume Difference: 0		SBT	120	0	0		0	0	0
	120	0.00		SBR	120	6	5		0	0	0
			TEV	**TEV**	**120**	**732**	**730**	**579**	**0**	**0**	**0**
13	130	I-5 Exit 235 Northbound at Century Dr	EB	EBL	130	24	25		0	0	0
	130			EBT	130	0	0		0	0	0
	130	I-5 Exit 235 Northbound at Century Dr		EBR	130	91	90		0	0	0
	130		WB	WBL	130	0	0		0	0	0
	130			WBT	130	0	0		0	0	0
	130			WBR	130	0	0		0	0	0
	130	Volumes from Albany Area MPO Transportation Study - DKS study	NB	NBL	130	53	55		0	0	0
	130			NBT	130	54	55		0	0	0
	130			NBR	130	0	0		0	0	0
	130		SB	SBL	130	0	0		0	0	0
	130	Volume Difference: 0		SBT	130	54	55		0	0	0
	130	0.00		SBR	130	0	0		0	0	0
			TEV	**TEV**	**130**	**276**	**280**	**378**	**0**	**0**	**0**

Appendix C – Traffic Analysis Methodology Memorandum

DRAFT MEMORANDUM

DATE: November 24, 2015

TO: Christina McDaniel-Wilson, TPAU

FROM: Shelly Alexander, David Evans and Associates, Inc.
Angela Rogge, David Evans and Associates, Inc.

SUBJECT: **City of Millersburg Transportation System Plan**
Traffic Analysis Methodology Memorandum

This memorandum summarizes the approach for collection and evaluation of information that the City of Millersburg Transportation System Plan (TSP) will use for traffic analysis purposes. The study area includes the City of Millersburg within the City Limits and the Urban Growth Boundary (UGB). This area is on the west side of I-5 and north of the City of Albany.

Volume Development

Study Area Intersections

The TSP includes 13 intersections for analysis (**Analyzed as part of the Albany Area MPO Project)*:

1. Woods Rd at Millersburg Dr
2. Morningstar Rd at Millersburg Dr
3. Morningstar Rd at Old Salem Rd
4. Woods Rd at Alexander Ln
5. Woods Rd at Conser Rd
6. Old Salem Rd at Alexander Ln
7. Old Salem Rd at Conser Rd
8. Old Salem Rd at Nygren Rd
9. Old Salem Rd at NE Old Salem Rd (Near Exit 235)
10. Old Salem Rd at I-5 Exit 235 Southbound Ramps
11. Century Dr at I-5 Exit 235 Northbound Ramps*
12. Jefferson Hwy at I-5 Exit 238 Southbound Ramps*
13. Jefferson Hwy at I-5 Exit 238 Northbound Ramps*

Traffic Data Collection

The transportation and traffic analysis will be based on existing year 2015 conditions for the existing 30th highest hour and future design hour volumes.

The Consultant shall assemble year 2015 manual 3-hour (3:00-6:00 PM) turning movement classification counts for the study area intersections. These counts were collected on Thursday, May 21, 2015.

Existing Volumes

The existing volumes will be determined from the existing weekday counts and adjusted to 30th highest hour volumes following the methodologies outlined in the ODOT Transportation Planning and Analysis Unit's (TPAU) *Analysis Procedures Manual* (APM) *Volume 2*.

30th Highest Hour Volumes

Data for existing weekday counts will be reviewed to determine which PM hour is the highest traffic demand hour for the study area. The 30th highest hour volumes will be calculated by applying a seasonal adjustment factor to the volumes in the system peak hour.

System Peak Hour Selection

A single system peak hour will be used for analysis purposes. Turning movements, peak hour factors, vehicle classification, and other data describing demand in the study area will be derived for this PM system peak hour. Traffic counts will be reviewed in 15-minute intervals to determine the true peak hour for the entire study area. The final selection of a peak hour will be based on a simple majority of counts that have the same peak hour, with attention paid to Old Salem Road intersections and I-5 ramp terminals.

Seasonal Adjustment Factors

Since traffic counts are taken during various times of the year, data from varying months may need to be converted to peak month equivalents using calculated seasonal adjustment factors. TPAU has three methods for developing seasonal factors: On-Site ATR Method, ATR Characteristic Table Method, and ATR Seasonal Trend Table Method. There are no ATRs in the study area and the study area roadways are not representative of the state highway system, thus the Seasonal Trend Method was used to develop seasonal factors for the Millersburg TSP.

I-5 Ramp Terminals and Old Salem Road

Old Salem Road is the main north-south route through the study area and runs adjacent and parallel to I-5. Of the study area roadways, Old Salem Road is the most likely to serve non-local trips. The seasonal factor for traffic associated with Old Salem Road and the I-5 Ramp Terminals was calculated by using the Seasonal Trend Method and averaging the factors for commuter and summer trends.

Local Traffic

The seasonal factors for traffic moving within the local street network was calculated based on the count date using the ATR Seasonal Trend Method for a commuter route.

SEASONAL FACTORS	**I-5 Ramps and Old Salem Road** *Seasonal Trend Method: Average of Commuter and Summer Trends*	**Local Traffic** *Seasonal Trend Method: Commuter Trend*
May 21, 2015	1.08	1.03

Rounding and Balancing

After the seasonal factors are applied, the volumes are rounded to the nearest five vehicles, input into Synchro and balanced accordingly. For conservative analysis, it is preferable to add traffic to the system instead of remove. This approach is taken whenever possible. Volume imbalances between intersections are managed to represent the volumes into and out of residential developments and commercial lots between study area intersections, whenever applicable.

Existing Peak Hour Factor

For the existing analysis, the peak hour factor (PHF) will be calculated based on the common peak hour and data available from the traffic counts. The intersection PHF will be used unless unusual peaking is observed at individual approaches, in which case the PHF for each approach will be used.

Future Design Year 2040 Volumes

Forecast (year 2040) traffic volumes will be developed at count locations using the Corvallis Albany Lebanon Model (CALM) output and will be consistent with the projections of the MPO.

NCHRP 765 Methodology

Consultant shall post-process (on a link-basis) model volumes using the National Cooperative Highway Research Program Report (NCHRP) 765 guidelines in order to create future baseline 2040 traffic volumes. Consultant shall develop PM peak hour volumes for the scenario in accordance with ODOT's APM:

- Existing 30th highest design hour volumes (DHV) will be used as base volumes
- Determine future DHV using the Growth Method and the Difference (Incremental) Method
- Evaluate reasonableness of methods for each link location; areas with larger percent and absolute differences (greater than 10%) should use the difference method

Once the link volumes are adjusted, they will be converted into turning movement volumes at intersections.

Rounding and Balancing

The future DHVs will be rounded to the nearest five vehicles. Once the volumes are rounded, the network will be balanced.

Future Peak Hour Factor

The following default values outlined in the *ODOT APM Volume 2* will be used by approach for the PHF unless better information is available:

- 0.85 for minor street inflows and outflows
- 0.90 for minor arterials
- 0.95 for major streets

Evaluation Comparison Tools

Tools and techniques used to evaluate and compare the alternatives include traffic operations analysis tools for more detailed assessment of area conditions. Due to the potential latent demand shifts, the future baseline model volumes will be compared with the alternative model volumes and adjustment factors created and used as needed.

Traffic Operations Standards

The City does not currently have adopted operational standards in place for analyzing intersections. For signalized and all-way stop controlled intersections, level of service (LOS) "D" or better (representing no more than 55 seconds of average delay) is commonly considered acceptable operations. For two-way stop controlled intersections, a volume-to-capacity (v/c) ratio of up to 0.85 is generally considered to be acceptable operations.

For the I-5 Ramp Terminals, the Oregon Highway Plan (OHP) and the Highway Design Manual (HDM) will be used in the assessment of intersection operations. Both documents base their mobility performance on the calculation of v/c ratios; however, the standards in the HDM are based on higher performance levels than those in the OHP. The mobility targets from the OHP will be applied to the existing and future baseline (no build) analysis while the standards from the HDM will be applied to the evaluation of design alternatives.

Arterial and Intersection Operations

The operational analysis will evaluate v/c ratios and LOS using the Synchro/SimTraffic software program as outlined in the APM. Throughout the analysis process, TPAU and Region 2 Traffic staff will review modeling assumptions, analysis settings, and other assumptions to help ensure consistency of data with other studies under way.

An assessment of adding traffic signals may be needed. Any assessments of new traffic signals will use ODOT's preliminary signal warrant spreadsheets. Operational analysis results will be compared with applicable mobility standards, and specific recommendations for mitigation improvements needed to meet standards must be identified and verified by TPAU and Region 2 Traffic.

Traffic Operations Analysis Procedures

All operations will be evaluated using the methodology outlined in the *2000 and 2010 Highway Capacity Manual*s (HCM) along with the procedures outlined in the APM. For signalized intersections, operations will be reported using HCM 2000, while HCM 2010 will be used for unsignalized intersections. The Synchro/SimTraffic analysis software was selected to perform the intersection analysis since it can provide the v/c ratio and LOS output of an HCM analysis and consider the systematic interaction of the intersections with regard to queuing and delays.

Crash History Analysis

Crash data within the study area will be obtained from the ODOT Crash Analysis and Reporting Unit for the most recent five complete years. The most recent Safety Priority Index System ("SPIS") data will be obtained as well. Data will be requested for study area intersections and both state and non-state arterials and collectors within the City of Millersburg.

The study area evaluation will include an analysis of the most recent five-year crash history on state and non-state roadways at count locations and arterial and collector segments between count locations. This analysis screens for patterns amongst the crashes that are indicative of existing geometric or operational deficiencies. The Highway Safety Manual Part B Network Screening Probability of Specific Crash Types Exceeding Threshold Proportions method will be used in the screening process where sufficient reference populations are available. Based on the crash patterns, the analysis may identify improvements for the build alternatives that could mitigate safety issues. ODOT SPIS locations (if applicable) will be included in the crash history.

Intersection crash rates will be calculated for each study area intersection and compared against the published 90^{th} Percentile rates in the APM (Version 2). If there are enough ADT volumes available, the critical crash rate will be calculated.

2015 SEASONAL TREND TABLE (Updated: 11/09/15)

TREND	1-Jan	15-Jan	1-Feb	15-Feb	1-Mar	15-Mar	1-Apr	15-Apr	1-May	15-May	1-Jun	15-Jun
INTERSTATE URBANIZED	1.0354	1.0413	1.0201	0.9989	0.9830	0.9672	0.9579	0.9486	0.9527	0.9567	0.9381	0.9195
INTERSTATE NONURBANIZED	1.2439	1.3049	1.2574	1.2100	1.1401	1.0701	1.0599	1.0496	1.0241	0.9986	0.9501	0.9016
COMMUTER	1.0496	1.0551	1.0313	1.0074	0.9956	0.9838	0.9651	0.9465	0.9434	0.9403	0.9495	0.9586
COASTAL DESTINATION	1.2026	1.2084	1.1729	1.1374	1.1039	1.0705	1.0686	1.0668	1.0441	1.0214	0.9840	0.9465
COASTAL DESTINATION ROUTE	1.4607	1.4921	1.4221	1.3521	1.2817	1.2114	1.2020	1.1926	1.1319	1.0712	1.0110	0.9509
AGRICULTURE	1.2495	1.2659	1.2218	1.1778	1.1386	1.0994	1.0579	1.0165	0.9771	0.9378	0.9092	0.8807
RECREATIONAL SUMMER	1.7234	1.7892	1.7314	1.6737	1.5620	1.4504	1.3916	1.3329	1.1751	1.0174	0.9368	0.8563
RECREATIONAL SUMMER WINTER	1.1753	1.2460	1.2580	1.2699	1.2940	1.3182	1.4411	1.5640	1.5262	1.4884	1.2854	1.0826
RECREATIONAL WINTER	0.9698	0.9363	0.9427	0.9491	0.9747	1.0002	1.2456	1.4910	1.8800	2.2689	1.9669	1.6650
SUMMER	1.2080	1.2355	1.1988	1.1622	1.1230	1.0838	1.0548	1.0258	0.9932	0.9607	0.9257	0.8907
SUMMER < 2500	1.2981	1.3274	1.2867	1.2461	1.1836	1.1211	1.0715	1.0218	0.9712	0.9206	0.8897	0.8588

TREND	1-Jul	15-Jul	1-Aug	15-Aug	1-Sep	15-Sep	1-Oct	15-Oct	1-Nov	15-Nov	1-Dec	15-Dec	Peak Period Seasonal Factor
INTERSTATE URBANIZED	0.9220	0.9266	0.9215	0.9164	0.9352	0.9539	0.9565	0.9589	0.9775	0.9960	1.0119	1.0277	0.9164
INTERSTATE NONURBANIZED	0.8748	0.8438	0.8431	0.8425	0.8920	0.9416	0.9820	1.0224	1.0449	1.0675	1.1177	1.1679	0.8425
COMMUTER	0.9409	0.9239	0.9194	0.9149	0.9276	0.9402	0.9425	0.9446	0.9731	1.0016	1.0239	1.0463	0.9149
COASTAL DESTINATION	0.8933	0.8286	0.8273	0.8260	0.8771	0.9283	0.9852	1.0421	1.0991	1.1560	1.1766	1.1972	0.8260
COASTAL DESTINATION ROUTE	0.8643	0.7555	0.7552	0.7549	0.8330	0.9111	1.0208	1.1305	1.2110	1.2915	1.3498	1.4080	0.7549
AGRICULTURE	0.8642	0.8445	0.8412	0.8380	0.8419	0.8459	0.8791	0.9123	0.9800	1.0477	1.1405	1.2332	0.8380
RECREATIONAL SUMMER	0.7953	0.7218	0.7327	0.7436	0.8027	0.8618	0.9653	1.0688	1.2301	1.3915	1.5047	1.6180	0.7218
RECREATIONAL SUMMER WINTER	0.9657	0.8120	0.8456	0.8793	1.0312	1.1831	1.4133	1.6219	1.7084	1.7733	1.4489	1.1245	0.8120
RECREATIONAL WINTER	1.4562	1.1365	1.1639	1.1912	1.3347	1.4782	1.7869	2.0956	2.4558	2.8160	1.9444	1.0729	0.9363
SUMMER	0.8658	0.8350	0.8379	0.8407	0.8779	0.9152	0.9494	0.9836	1.0382	1.0929	1.1341	1.1753	0.8350
SUMMER < 2500	0.8385	0.8142	0.8233	0.8324	0.8482	0.8639	0.9022	0.9405	1.0159	1.0913	1.1759	1.2606	0.8142

***Seasonal Trend Table factors are based on previous year ATR data. The table is updated yearly.**
***Grey shading indicates months were seasonal factor is greater than 30%**

	15-May	Interpolated 21-May	1-Jun	Peak Period	Seasonal Factor
Commuter	0.9403	0.9436	0.9495	0.9149	1.031367
Summer	0.9607	0.9483	0.9257	0.8350	1.135685

City of Millersburg Seasonal Factors	
Local Intersections (Commuter Trend):	1.03
Old Salem Road and I-5 Intersections (Average of Commuter and Summer):	1.08

Appendix D – Future Traffic Operations Worksheets (Synchro)

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

Movement	EBU	EBT	EBR	WBU	WBL	WBT	NBU	NBL	NBR
Traffic Vol, veh/h	0	5	5	0	5	10	0	10	10
Future Vol, veh/h	0	5	5	0	5	10	0	10	10
Peak Hour Factor	0.92	0.85	0.85	0.92	0.85	0.85	0.92	0.85	0.85
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	6	6	0	6	12	0	12	12
Number of Lanes	0	1	0	0	0	1	0	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	6.7	7.1	6.9
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	50%	0%	33%
Vol Thru, %	0%	50%	67%
Vol Right, %	50%	50%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	20	10	15
LT Vol	10	0	5
Through Vol	0	5	10
RT Vol	10	5	0
Lane Flow Rate	24	12	18
Geometry Grp	1	1	1
Degree of Util (X)	0.025	0.012	0.02
Departure Headway (Hd)	3.785	3.689	4.051
Convergence, Y/N	Yes	Yes	Yes
Cap	949	973	887
Service Time	1.796	1.7	2.06
HCM Lane V/C Ratio	0.025	0.012	0.02
HCM Control Delay	6.9	6.7	7.1
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.1	0	0.1

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	20	230	155	230	75	95
Future Vol, veh/h	20	230	155	230	75	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	Free	-	Stop
Storage Length	210	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	8	8	3	3	9	9
Mvmt Flow	21	242	163	242	79	100

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	163	0	-	0	447	163
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	284	-
Critical Hdwy	4.18	-	-	-	6.49	6.29
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	2.272	-	-	-	3.581	3.381
Pot Cap-1 Maneuver	1380	-	-	0	556	864
Stage 1	-	-	-	0	849	-
Stage 2	-	-	-	0	748	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	1380	-	-	-	548	864
Mov Cap-2 Maneuver	-	-	-	-	548	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	737	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	8.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	1380	-	-	1242
HCM Lane V/C Ratio	0.015	-	-	0.144
HCM Control Delay (s)	7.6	-	-	8.4
HCM Lane LOS	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	0.5

Intersection	
Int Delay, s/veh	229.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBR	SEL	SER
Traffic Vol, veh/h	80	205	5	5	375	70	5	5	520	5
Future Vol, veh/h	80	205	5	5	375	70	5	5	520	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	None	-	-
Storage Length	-	-	-	-	-	-	0	-	0	-
Veh in Median Storage, #	-	0	-	-	0	-	0	-	0	-
Grade, %	-	0	-	-	0	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	3	3	3	6	6	6	0	0	4	4
Mvmt Flow	84	216	5	5	395	74	5	5	547	5

Major/Minor	Major1			Major2			Minor1		Minor2	
Conflicting Flow All	468	0	0	221	0	0	837	218	834	432
Stage 1	-	-	-	-	-	-	387	-	442	-
Stage 2	-	-	-	-	-	-	450	-	392	-
Critical Hdwy	4.13	-	-	4.16	-	-	7.1	6.2	7.14	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	-	6.14	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	-	6.14	-
Follow-up Hdwy	2.227	-	-	2.254	-	-	3.5	3.3	3.536	3.336
Pot Cap-1 Maneuver	1088	-	-	1325	-	-	288	827	~ 285	619
Stage 1	-	-	-	-	-	-	641	-	591	-
Stage 2	-	-	-	-	-	-	592	-	629	-
Platoon blocked, %		-	-		-	-				
Mov Cap-1 Maneuver	1088	-	-	1325	-	-	259	827	~ 259	619
Mov Cap-2 Maneuver	-	-	-	-	-	-	259	-	~ 259	-
Stage 1	-	-	-	-	-	-	585	-	~ 539	-
Stage 2	-	-	-	-	-	-	574	-	565	-

Approach	EB	WB	NB	SE
HCM Control Delay, s	2.4	0.1	16.1	$ 551.7
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SELn1
Capacity (veh/h)	340	1088	-	-	1325	-	-	262
HCM Lane V/C Ratio	0.046	0.077	-	-	0.004	-	-	2.129
HCM Control Delay (s)	16.1	8.6	0	-	7.7	0	-	$ 551.7
HCM Lane LOS	C	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	42

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	35	10	540	25	185	430
Future Vol, veh/h	35	10	540	25	185	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	7	7	6	6	7	7
Mvmt Flow	39	11	600	28	206	478

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1503	614	0	0	628	0
Stage 1	614	-	-	-	-	-
Stage 2	889	-	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	4.17	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	2.263	-
Pot Cap-1 Maneuver	130	483	-	-	930	-
Stage 1	530	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	91	483	-	-	930	-
Mov Cap-2 Maneuver	91	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	275	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	61.6	0	3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	111	930	-
HCM Lane V/C Ratio	-	-	0.45	0.221	-
HCM Control Delay (s)	-	-	61.6	10	0
HCM Lane LOS	-	-	F	A	A
HCM 95th %tile Q(veh)	-	-	2	0.8	-

Intersection	
Int Delay, s/veh	6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	2	0	25	20	0	0	35	10	5	0	10	0
Future Vol, veh/h	2	0	25	20	0	0	35	10	5	0	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	12	2	2	3	2	2	2	2	2
Mvmt Flow	2	0	28	22	0	0	39	11	6	0	11	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	103	105	11	117	103	14	11	0	0	17	0	0
Stage 1	11	11	-	92	92	-	-	-	-	-	-	-
Stage 2	92	94	-	25	11	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.22	6.52	6.22	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.22	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.22	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.608	4.018	3.318	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	877	785	1070	836	787	1066	1602	-	-	1600	-	-
Stage 1	1010	886	-	891	819	-	-	-	-	-	-	-
Stage 2	915	817	-	968	886	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	860	765	1070	799	767	1066	1602	-	-	1600	-	-
Mov Cap-2 Maneuver	860	765	-	799	767	-	-	-	-	-	-	-
Stage 1	985	886	-	869	799	-	-	-	-	-	-	-
Stage 2	892	797	-	943	886	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	9.6	5.1	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1602	-	-	1051	799	1600	-	-
HCM Lane V/C Ratio	0.024	-	-	0.029	0.028	-	-	-
HCM Control Delay (s)	7.3	0	-	8.5	9.6	0	-	-
HCM Lane LOS	A	A	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	10	45	40	240	230	10
Future Vol, veh/h	10	45	40	240	230	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	350	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	13	3	3	8	8	2
Mvmt Flow	11	47	42	253	242	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	584	247	253	0	-	0
Stage 1	247	-	-	-	-	-
Stage 2	337	-	-	-	-	-
Critical Hdwy	6.53	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.53	-	-	-	-	-
Critical Hdwy Stg 2	5.53	-	-	-	-	-
Follow-up Hdwy	3.617	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	456	789	1306	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	699	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	441	789	1306	-	-	-
Mov Cap-2 Maneuver	528	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	677	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	1.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1306	-	528	789	-	-
HCM Lane V/C Ratio	0.032	-	0.02	0.06	-	-
HCM Control Delay (s)	7.8	-	12	9.9	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Traffic Vol, veh/h	5	5	20	0	5	5
Future Vol, veh/h	5	5	20	0	5	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	6	24	0	6	6

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	42	24	0	0	24	0
Stage 1	24	-	-	-	-	-
Stage 2	18	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	969	1052	-	-	1591	-
Stage 1	999	-	-	-	-	-
Stage 2	1005	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	965	1052	-	-	1591	-
Mov Cap-2 Maneuver	965	-	-	-	-	-
Stage 1	999	-	-	-	-	-
Stage 2	1001	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	3.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1007	1591	-
HCM Lane V/C Ratio	-	-	0.012	0.004	-
HCM Control Delay (s)	-	-	8.6	7.3	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	15	50	55	300	315	15
Future Vol, veh/h	15	50	55	300	315	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	315	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	15	10	2	4	7	2
Mvmt Flow	16	53	58	316	332	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	771	339	347	0	-	0
Stage 1	339	-	-	-	-	-
Stage 2	432	-	-	-	-	-
Critical Hdwy	6.55	6.3	4.12	-	-	-
Critical Hdwy Stg 1	5.55	-	-	-	-	-
Critical Hdwy Stg 2	5.55	-	-	-	-	-
Follow-up Hdwy	3.635	3.39	2.218	-	-	-
Pot Cap-1 Maneuver	351	685	1212	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	334	685	1212	-	-	-
Mov Cap-2 Maneuver	444	-	-	-	-	-
Stage 1	693	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	1.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1212	-	609	-	-
HCM Lane V/C Ratio	0.048	-	0.112	-	-
HCM Control Delay (s)	8.1	-	11.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Traffic Vol, veh/h	0	20	30	20	10	0
Future Vol, veh/h	0	20	30	20	10	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	22	33	22	11	0

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	56	0	-	0	66	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	22	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1549	-	-	-	939	1026
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	1001	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1549	-	-	-	939	1026
Mov Cap-2 Maneuver	-	-	-	-	939	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	1001	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1549	-	-	-	939
HCM Lane V/C Ratio	-	-	-	-	0.012
HCM Control Delay (s)	0	-	-	-	8.9
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	15	0	45	10	0	5	80	325	5	0	345	30
Future Vol, veh/h	15	0	45	10	0	5	80	325	5	0	345	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	None
Storage Length	135	-	0	0	-	50	400	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	13	18	2	2	3	4	80	2	6	6
Mvmt Flow	16	0	47	11	0	5	84	342	5	0	363	32

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	892	895	379	892	908	345	395	0	0	347	0	0
Stage 1	379	379	-	513	513	-	-	-	-	-	-	-
Stage 2	513	516	-	379	395	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.33	7.28	6.52	6.22	4.13	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.28	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.28	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.417	3.662	4.018	3.318	2.227	-	-	2.218	-	-
Pot Cap-1 Maneuver	263	280	644	246	275	698	1158	-	-	1212	-	-
Stage 1	643	615	-	516	536	-	-	-	-	-	-	-
Stage 2	544	534	-	612	605	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	247	260	644	215	255	698	1158	-	-	1212	-	-
Mov Cap-2 Maneuver	247	260	-	215	255	-	-	-	-	-	-	-
Stage 1	596	615	-	479	497	-	-	-	-	-	-	-
Stage 2	501	495	-	567	605	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	18.5	1.6	0
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1158	-	-	247	644	215	698	1212	-	-
HCM Lane V/C Ratio	0.073	-	-	0.064	0.074	0.049	0.008	-	-	-
HCM Control Delay (s)	8.4	-	-	20.6	11	22.6	10.2	0	-	-
HCM Lane LOS	A	-	-	C	B	C	B	A	-	-
HCM 95th %tile Q(veh)	0.2	-	-	0.2	0.2	0.2	0	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	435	35	45	380	15	155
Future Vol, veh/h	435	35	45	380	15	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	100	-	75	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	6	2	13	6	50	12
Mvmt Flow	458	37	47	400	16	163

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	495	0	971	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	495	-
Critical Hdwy	-	-	4.23	-	6.9	6.32
Critical Hdwy Stg 1	-	-	-	-	5.9	-
Critical Hdwy Stg 2	-	-	-	-	5.9	-
Follow-up Hdwy	-	-	2.317	-	3.95	3.408
Pot Cap-1 Maneuver	-	-	1014	-	230	569
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	525	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1014	-	219	569
Mov Cap-2 Maneuver	-	-	-	-	336	-
Stage 1	-	-	-	-	536	-
Stage 2	-	-	-	-	501	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	14.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	336	569	-	-	1014	-
HCM Lane V/C Ratio	0.047	0.287	-	-	0.047	-
HCM Control Delay (s)	16.2	13.9	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	1.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	28.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	155	435	40	130	295	260
Future Vol, veh/h	155	435	40	130	295	260
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	13	6	9	13	3	4
Mvmt Flow	163	458	42	137	311	274

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	621	0	613	392
Stage 1	-	-	-	-	392	-
Stage 2	-	-	-	-	221	-
Critical Hdwy	-	-	4.19	-	6.43	6.24
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.281	-	3.527	3.336
Pot Cap-1 Maneuver	-	-	927	-	454	652
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	927	-	432	652
Mov Cap-2 Maneuver	-	-	-	-	526	-
Stage 1	-	-	-	-	681	-
Stage 2	-	-	-	-	773	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	66.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	578	-	-	927	-
HCM Lane V/C Ratio	1.011	-	-	0.045	-
HCM Control Delay (s)	66.9	-	-	9.1	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	15.2	-	-	0.1	-

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Traffic Vol, veh/h	300	0	0	65	140	140
Future Vol, veh/h	300	0	0	65	140	140
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	2	2	4	4	18
Mvmt Flow	316	0	0	68	147	147

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	289	221	295	0	-	0
Stage 1	221	-	-	-	-	-
Stage 2	68	-	-	-	-	-
Critical Hdwy	6.47	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	691	819	1266	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	691	819	1266	-	-	-
Mov Cap-2 Maneuver	691	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	942	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1266	-	691	-	-
HCM Lane V/C Ratio	-	-	0.457	-	-
HCM Control Delay (s)	0	-	14.5	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	2.4	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Traffic Vol, veh/h	300	115	0	140	30	0
Future Vol, veh/h	300	115	0	140	30	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	25	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	7	9	2	17	2	2
Mvmt Flow	316	121	0	147	32	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	316	0	463	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	147	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1244	-	557	724
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	880	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1244	-	557	724
Mov Cap-2 Maneuver	-	-	-	-	557	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	557	-	-	1244	-
HCM Lane V/C Ratio	0.057	-	-	-	-
HCM Control Delay (s)	11.9	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	3.8					

Movement	NBL	NBT	SBT	SBR	SEL	SER
Traffic Vol, veh/h	30	65	140	0	0	115
Future Vol, veh/h	30	65	140	0	0	115
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	4	4	2	2	9
Mvmt Flow	32	68	147	0	0	121

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	147	0	-	0	279	147
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	132	-
Critical Hdwy	4.12	-	-	-	6.42	6.29
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.381
Pot Cap-1 Maneuver	1435	-	-	-	711	882
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	894	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1435	-	-	-	695	882
Mov Cap-2 Maneuver	-	-	-	-	695	-
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	873	-

Approach	NB	SB	SE
HCM Control Delay, s	2.4	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBL	NBT	SELn1	SBT	SBR
Capacity (veh/h)	1435	-	882	-	-
HCM Lane V/C Ratio	0.022	-	0.137	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Table 2: Existing Weekday PM Peak Hour and 30HV Peak Seasonal Intersection Operations Summary

Intersection	Average Weekday		30HV		Jurisdiction	Mobility Target
	Level of Service	**Volume/ Capacity (major/minor approach)**	**Level of Service**	**Volume/ Capacity (major/minor approach)**		
Unsignalized Intersections						
Jefferson Hwy (OR 164)/North Avenue	F	0.05/0.87	F	**0.05/>1.0**	ODOT	0.95
Jefferson Hwy (OR 164)/Scravel Hill Road	F	0.13/0.66	F	0.14/0.74	ODOT	0.95
Jefferson Hwy (OR 164)/I-5 NB Ramps	F	**0.07/>1.0**	F	**0.08/>1.0**	ODOT	0.85
Jefferson Hwy (OR 164)/I-5 SB Ramps	A	0.02/0.13	A	0.02/0.14	ODOT	0.85
Century Drive/I-5 NB Ramps	B	0.17/0.21	C	0.19/0.28	ODOT	0.85
Old Salem Road/I-5 SB Ramps	E	0.20/0.39	F	0.22/0.45	ODOT	0.85
Knox Butte Road/Century Drive & I-5 NB Off Ramp	F	**0.19/>1.0**	F	**0.23/>1.0**	ODOT	0.85
Knox Butte Road/Clover Ridge Road	F	**0.34/>1.0**	F	**0.37/>1.0**	Albany	0.85
Knox Butte Road/Scravel Hill Road	B	0.04/0.23	B	0.04/0.25	Linn County	D
Santiam Highway (US 20)/Scravel Hill Road	B	0.12/0.15	C	0.14/0.22	ODOT	0.95
Seven Mile Lane/Three Lakes Road	B	0.03/0.12	B	0.03/0.12	Linn County	D
Albany-Corvallis Highway (US 20)/Scenic Drive	F	**0.17/>1.0**	F	**0.24/>1.0**	ODOT	0.95
Scenic Drive/Gibson Hill Road	C	0.15/0.09	C	0.16/0.10	Albany	0.85
Signalized Intersections						
Jefferson Hwy (OR 164)/Main Street	D	0.93	E	**1.0**	ODOT	0.95
Pacific Highway (OR 99E)/Albany Avenue & Airport Road	E	**>1.0**	F	**>1.0**	ODOT	0.95
Pacific Highway (OR 99E)/53rd Avenue[C]	A	0.56	A	0.60	ODOT	0.95
Waverly Drive/34th Avenue[C]	B	0.60	B	0.62	Albany	D
Fescue Street/Santiam Highway (US 20)[C]	C	0.76	C	0.85	ODOT	0.95
Airport Road/Santiam Highway (US 20)[C]	B	0.67	D	0.78	ODOT	0.95
Waverly Drive/Santiam Highway (US 20)[C]	F	**>1.0**	F	**>1.0**	ODOT	0.95
Queen Avenue/ Pacific Highway (OR 99E)[C]	F	**>1.0**	F	**>1.0**	ODOT	0.95

G. Technical Memorandum #7: Solutions Evaluation

City of Millersburg Transportation System Plan

Technical Memorandum #7
(Task 5.1 Solutions Evaluation)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

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Portland, Oregon

August 2016

The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted for state facilities are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any state facility are subject to change, will ultimately be determined through a preliminary and final design process, and are subject to ODOT approval.

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Draft Transportation Solutions Evaluation

This memorandum presents the solutions analysis of projects for consideration in the Millersburg Transportation System Plan (TSP). The memorandum is divided into three sections:

1. Development of improvement options. This summarizes the purpose of the TSP and focuses on the identification of potential transportation improvements for Millersburg.
2. An analysis of improvements that could be considered for inclusion in the plan. Improvement options are listed by mode and included in an evaluation matrix (Appendix A).
3. Funding sources and priorities.

Development of Improvement Options

The purpose of the TSP is to determine how best to serve the future transportation needs of Millersburg residents, businesses, and visitors. Historically, TSPs focused heavily on vehicular improvements, often neglecting the need for pedestrian and bicycle connectivity. The existing and future conditions analysis suggest that vehicular capacity of the transportation system will be satisfactory, thus the TSP will incorporate the multi-modal deficiencies identified in previous technical memoranda and the vision of the community to define draft transportation system solutions that address community needs.

The improvements and strategies identified for consideration in the TSP are oriented toward multi-modal connectivity, safety and maintenance. The outcome of this process will confirm and prioritize the City's multi-modal plan improvements.

Draft Transportation Improvement Strategies

Review of Existing and Concurrent Plans

The screening and summary of projects contained in existing plans includes:

- Projects from Other Planning Documents (Ongoing)
    - Linn County Transportation System Plan
    - Albany Area MPO Regional Transportation Plan
- Projects in Capital Plans
    - 2015-2018 Oregon (Final) Statewide Transportation Improvement Program (STIP)
    - Millersburg Streets Capital Improvement Program (CIP)

Projects from Other Planning Documents

Two other ongoing planning projects are considered for potential projects related to the transportation system in Millersburg. Where applicable, solutions from these plans are considered for inclusion in the TSP.

Linn County Transportation System Plan

The Linn County TSP will guide development of roadways and multi-modal facilities throughout Linn County that are outside of urban growth boundaries or in areas where city and county facilities abut. At this stage in the development of the Linn County TSP, no solutions have been developed affecting Millersburg.

Albany Area MPO Regional Transportation Plan

The AAMPO RTP addresses regional needs, focusing on arterial and collector roadways, the public transportation system, and bicycle and pedestrian connections throughout the MPO. The RTP will build off of local plans to create a regional vision. At this stage in the development of the Plan, only draft solutions have been developed. The prioritization of projects in the RTP will occur as the document is refined. The draft projects relevant to Millersburg are listed below:

- Truax Creek Bridge: Extend curb, gutter and sidewalk on west side and bicycle lanes on both sides. Pavement preservation for 200ft in conjunction with Truax Creek bridge replacement. This is only the AAMPO funded portion of larger bridge replacement project.
- Old Salem Road ADA Transition Improvements**:** Add Curb Gutter and Sidewalk and ADA improvements to meet current ADA Requirements
- Woods Rd Reconstruction Phase 1
- Woods Rd Reconstruction Phase 2
- Old Salem Rd Sidewalk and Bicycle Improvements
- Morningstar Rd Reconstruction – Urban Conversion

Projects in Capital Plans

Capital plans are documents identifying short-range projects that have secured funding for construction.

2015-2018 Oregon (Final) Statewide Transportation Improvement Program

The *2015-2018* STIP does not contain any projects within the city of Millersburg, however there are projects identified on I-5 bordering the study area that may impact residents and visitors. There is one STIP project located adjacent to the Millersburg study area that will be included in the Draft TSP. The project name is the I-5 South Jefferson Interchange to US 20 Interchange (Development – construction funds not yet programmed). It is a Planning level project preparing an environmental assessment on the impacts of the following actions: Adding additional travel lanes on I-5 (this piece has been funded under the FAST Act freight provisions); Replacing the US20 and Knox Butte Interchanges; Removing the Viewcrest and Murder Creek Interchanges and building a new interchange to serve the Millersburg Area. This document is being prepared in compliance with the National Environmental Policy Act. (Key #14863)

Millersburg Streets Capital Improvement Program

The most recent (December 21, 2015) project list for the Millersburg Streets CIP contains projects for the planning horizon. The projects listed in the CIP will be evaluated in addition to other potential improvements proposed in this memorandum, with less priority given to projects outside of the city limits. See Table 1 for a summary of the project list and estimated costs.

Table 1. Millersburg Streets Capital Improvement Program (Updated December 2015)

Project Name[1]	Project Cost Estimate[2]
Woods Road Reconstruction Phase 1	$ 750,000
Woods Road Reconstruction Phase 2	$ 750,000
Zuhlke Extension East	$ 500,000
Zuhlke Extension West	$ 750,000
Conser Realignment	$ 1,750,000
Alexander Drive Crosswalk	$ 20,000
Old Salem Road Sidewalk and Bicycle Improvements	$ 375,000
Morning Star Road Reconstruction - Urban Conversion	$ 650,000
Interstate 5 Tank Farm Interchange	$ 45,000,000
Conser Sidewalk and Bicycle Improvements	$ 250,000
Total:	**$50,795,000**

Notes:

1. This list is illustrative and may be modified at any time by the City of Millersburg in accordance with ORS 223.309 and any other applicable Ordinance or Code. Projects receiving SDF Funds must be included on this list and be eligible to receive SDC funding IAW applicable law.
2. Project Cost Estimates provided by City of Millersburg

Millersburg Draft Strategic Plan

The goals and priorities identified in the Millersburg Strategic Plan (currently in draft form) will 'roll up into' the Millersburg TSP. The current draft of the Strategic Plan identifies six goals, each of which was integrated in the draft TSP goals and policies (see Technical Memorandum #4), and provides a potential action for the TSP.

System and Demand Management Options

Safe Routes to Schools (SRTS)

The existing conditions analysis identified a deficiency in safe, walkable connections from Millersburg to area elementary, middle and high schools outside the city limits. Students wanting to walk or bike to school would have to cross at least one major highway (I-5, US 20 or OR 99E) on routes without adequate pedestrian facilities and adjacent to high speed roadways.

Safe Routes to School (SRTS) is a potential program adopted by a school district to encourage people to walk and bike to school and identifies safe, convenient and fun opportunities to do so. Since Millersburg does not have any schools, students all have to travel outside the city. A SRTS program would have to be coordinated with the City of Albany School District. However, as part of the TSP, special attention could be given to enhancing the pedestrian connections to school bus stop locations and opportunities for improved connectivity can be identified.

Transportation System Management (TSM)

Transportation System Management (TSM) measures are designed to make maximum use of existing transportation facilities. Efficient management of the transportation system can reduce costs by avoiding the need for more expensive roadway expansion projects. TSM strategies include traffic control improvements, traffic signal coordination, traffic calming, access management, local street connectivity and intelligent transportation systems (ITS). Standards that address TSM in Millersburg are addressed in Technical Memorandum #9 (Transportation Guidelines) and include roadway functional classification, access management standards, roadway cross-section standards and neighborhood traffic management.

An additional TSM measure identified during the community meeting was to perform speed studies on Conser Road and Woods Road to identify appropriate speed limit posting to properly sign the roadways.

Safety Enforcement

A concern voiced during the community Open House was that vehicles are traveling too fast when making the southbound right-turn from Century Drive to Old Salem Road. A **speed warning system** could be installed on Century Drive to display a warning message if the vehicle exceeds a safe speed such as speed in excess of posted speed triggering warning lights or a flashing speed *value*. This improvement would require coordination and action from ODOT as Century Drive at this location is a State facility and just outside the Millersburg city limits.

Transportation Demand Management (TDM)

Transportation Demand Management (TDM) measures are designed to reduce vehicle demand, especially for commuter trips in the peak periods. TDM measures can encourage the use of alternative travel modes by serving as an institutional model for businesses in the community. Though the existing and future traffic analysis do not predict significant roadway capacity concerns, implementing TDM measures would support the goals of the TSP to plan and design a transportation system that enhances livability and support positive health impacts and decreases reliance on the automobile.

TDM is most effective when it can be specifically designed for the individual needs of a community and when the measures go beyond generic overarching recommendations. Many TDM measures are catered to businesses as a way to incentivize multi-modal travel options for their employees. Since Millersburg is comprised of mostly residential and industrial land uses and surrounded by agricultural lands, most TDM measures are not pertinent. Table 2 provides a list of strategies that could be applicable to the City of Millersburg. A more comprehensive list is available in Appendix B as a future reference.

Because Millersburg is part of an MPO there are additional expectations from the state regarding Vehicle Miles Traveled (VMT) reduction (OAR 660-012-0035(4)). Emphasis on bicycle and pedestrian projects could help meet those expectations, as well as identifying TDM activities. Oregon Cascades West Council of Governments (OCWCOG) has an active transportation demand management program (funded with State TDM dollars) which has potential for a stronger presence in Millersburg. Increasing that program's activity in Millersburg even a small amount could achieve some of the items listed in Table 2.

Table 2. Transportation Demand Management Strategies

Strategy	Description	Potential Trip Reduction[1]
Telecommuting	The employee performs regular work duties at home rather than commuting to work. The employee may telecommute full time, or commute to work on some days and telecommute on others.	• 82-91% (Full Time) • 14-36% (1-2 day/wk)
Compressed Work Week	Schedule where employees work their regular scheduled number of hours in fewer days per week.	• 7-9% (9 day/80 hr) • 16-18% (4 day/40 hr) • 32-36% (3 day/36 hr)
Bicycle Program	Provide support services to those employees that bicycle to work. At a minimum, this would include safe and secure bicycle storage. Shower facilities would provide an additional incentive, as would a direct subsidy towards the purchase of a bicycle.	0-10%
Provide Vanpools	Employees that live near each other are organized into a vanpool for their trip to work. A central meeting location is designated where the employees are picked up and dropped off.	• 15-25% (company provided van with fee) • 30-40% (company subsidized van)
On-site Rideshare Matching	Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator regarding their work hours, availability of a vehicle, and place of residence. The transportation coordinator then matches employees who can reasonably rideshare together, works with neighboring employers to find matches.	1-2%
Gifts/Awards for Alternate Mode Use	Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone.	0-3%

3. Employee Commute Options (ECO) Sample Trip Reduction Plan, Oregon Department of Environmental Quality, October 2006

Multi-modal Improvement Options

The Millersburg transportation improvement options include street upgrades, and bicycle, pedestrian, and transit system improvements which will be incorporated into the TSP. Each improvement option was evaluated based on the Goals and Objectives of the TSP (Technical Memorandum #4) as well as their need and likely timeline – see Appendix A for the evaluation matrix**.** Two factors were considered in the prioritization process 1) need (high, medium, and low priority), and 2) by time frame for implementation (short, medium, long, and development driven).

Need and Timeline

Clearly defined but flexible prioritization criteria can serve a variety of purposes (e.g., funding plans, grant applications, etc.). The factors below were used for prioritizing improvements, while the Evaluation Matrix includes more detailed guidelines provided to help with the prioritization process.

Need

- *High priority* with significant benefits to the community
- *Medium importance* with moderate benefits to the community
- *Low importance* with limited localized benefits

Timeline

- *Short Term* - Projects addressing existing transportation issues could be implemented with a lower level of effort if funds were available
- *Medium Term* - Projects are generally larger and more complex in nature (possibly needing planning or environmental analysis) but still requiring near-term funding consideration
- *Long Term* - Projects with unmet “triggers” or other dependence on interim projects; with the least urgent need for funding
- *Development Driven* - Projects that would only occur with future development

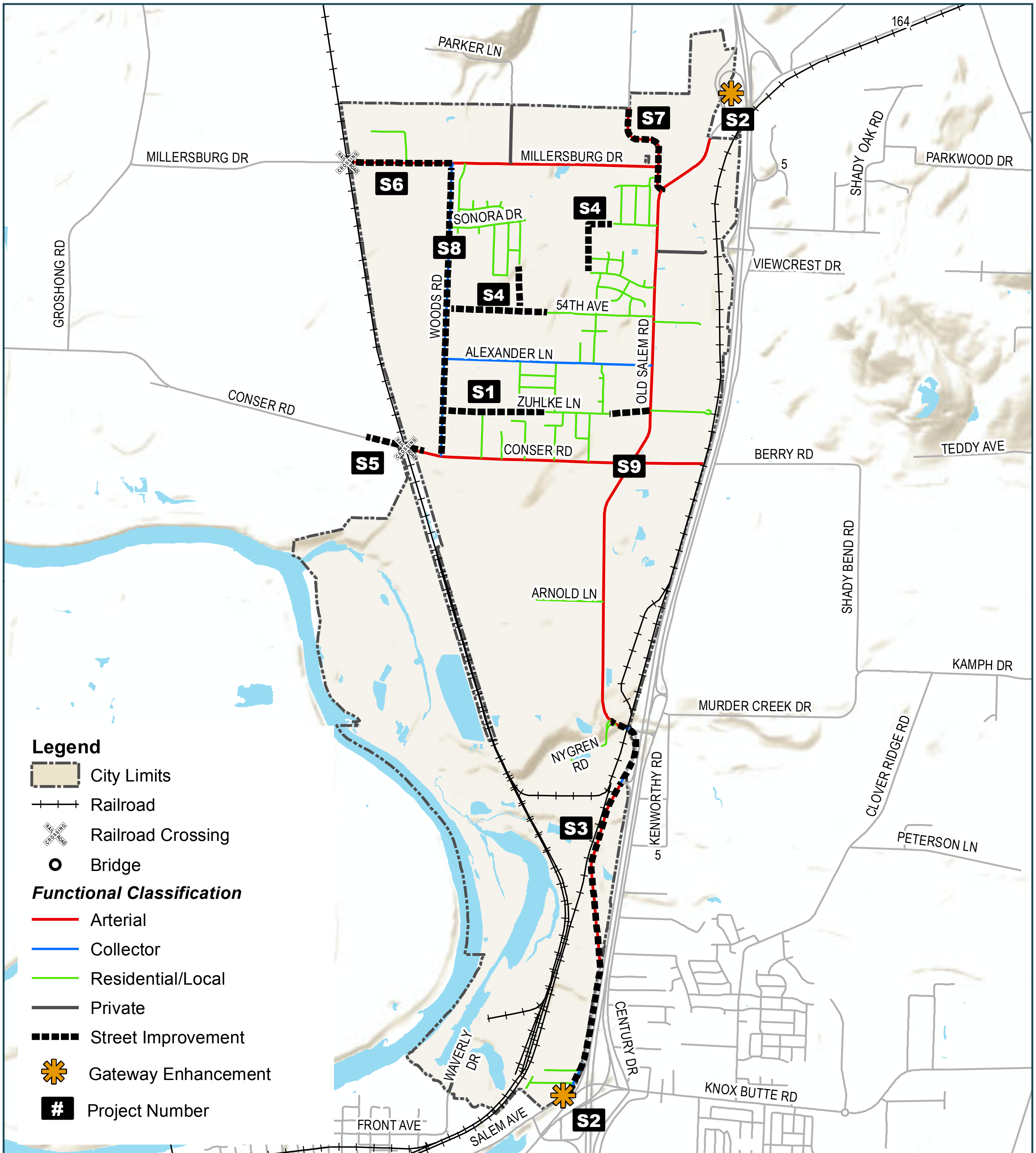
Using the outreach input, technical evaluations, and suggested guidelines for prioritizing improvements, the project team reviewed the preferred improvement list and identified a priority (high, medium, low) and timeline (short, medium, long, development driven) for each improvement.

Multi-Modal Street Improvements

The improvements identified in Table 3 focus on auto, truck, and associated pedestrian and bicycle system enhancements and are summarized in Figure 1. The primary purpose of these improvements is to improve user safety and enhance the connectivity for all modes.

Table 3. Potential Multi-Modal Street Improvements

ID	Improvement	Description	Benefit	Need/ Timeline
S1	Zuhlke Ln extension	Two Phases (to be determined by need): Extend Zuhlke Lane west to connect to Woods Rd and west to connect to Old Salem Rd	Multi-modal connectivity, development and access	Low/ Development Driven
S2	Millersburg gateway treatments	Provide gateway treatments at northern and southern end of Millersburg (Old Salem Rd)	Tourism and livability	Medium/ Medium
S3	Reconstruct Old Salem Rd	Reconstruct Old Salem Road to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multi-modal connectivity and safety	Medium/ Long
S4	New local streets	The TSP will map the general location of new street connectivity within future development areas	Local multi-modal connectivity, development and access	Low/ Development Driven
S5	Grade separated RR crossing on Conser Rd	Provide safe, multi-modal access across Portland & Western Railroad	Multi-modal safety, and connectivity	Low/ Long
S6	Reconstruct Millersburg Dr	Reconstruct Millersburg Dr west of Woods Rd to City Limits. Upgrade to arterial cross-section (bike lanes, curb, gutter, sidewalk) with development	Regional multi-modal connectivity and safety	Medium / Development Driven
S7	Reconstruct Morningstar Rd	Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multi-modal connectivity and safety	Medium/ Medium
S8	Reconstruct Woods Rd	Two Phases: Reconstruct Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk) – *Would preclude need for Improvement B3* Phase I: North of Alexander Ln Phase II: South of Alexander Ln	Regional multi-modal connectivity and safety	Medium/ Medium
S9	Realign Conser at Old Salem Rd	Realign the current offset intersection to a standard 4-leg intersection	Regional multi-modal connectivity and safety	Medium/ Medium



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

0 3,000 6,000 Feet

Figure 1

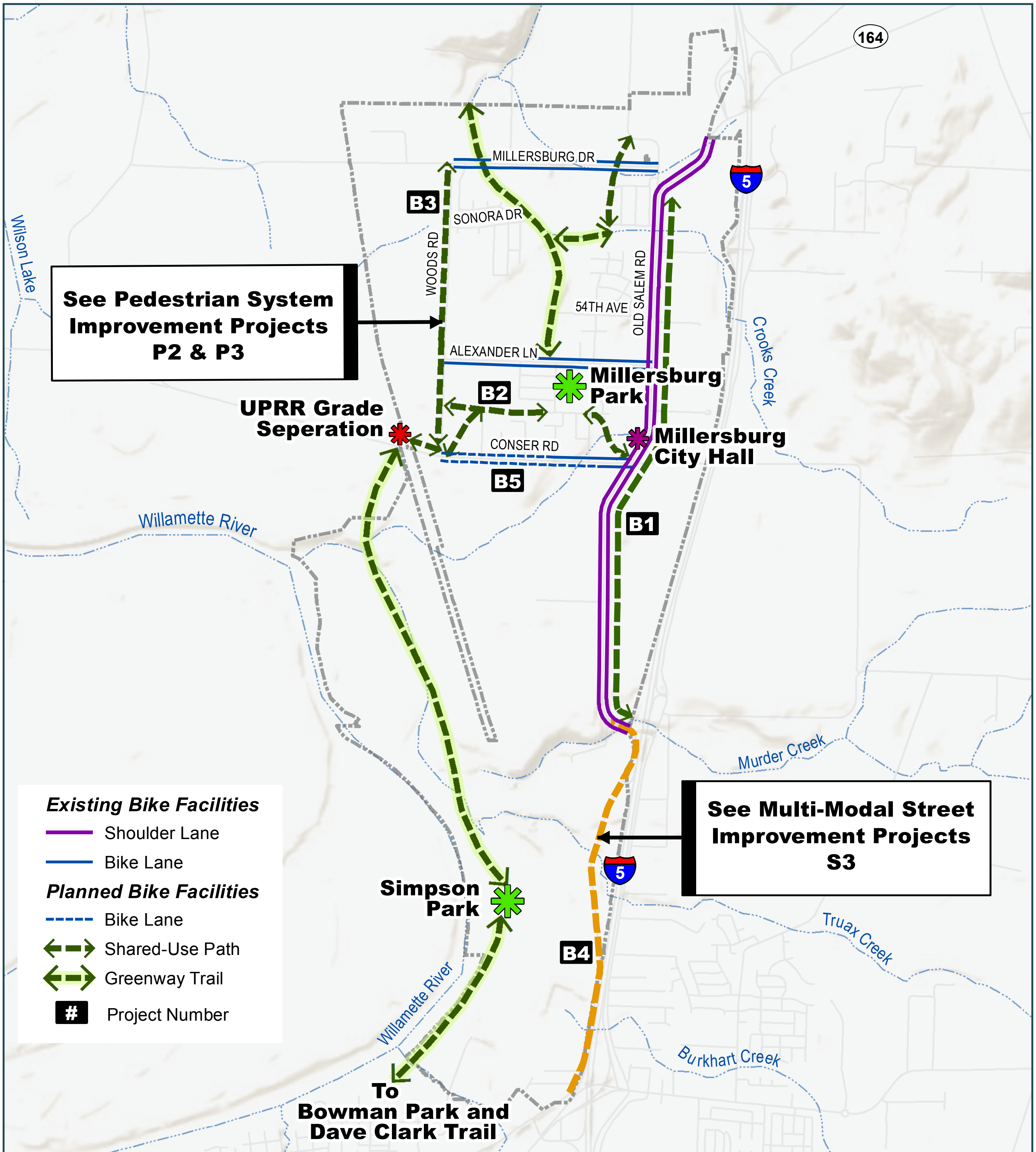
Multi-Modal Street Improvement Options

Bicycle System Improvements

The improvements identified in Table 4 improve bicycle system connectivity, mobility, and user safety. They focus on areas outside of the street right-of-way (ROW) such as shared-use paths for cyclists and pedestrians. The potential locations of these bicycle system improvements are depicted in Figure 2. Figure 3 illustrates the conceptual shared-use pathway and trail network as a compilation of potential bicycle and pedestrian system improvements.

Table 4. Potential Bicycle System Improvements

ID	Improvement	Description	Benefits	Need/ Timeline
B1	Old Salem Road Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Old Salem Road from the North City Limit to South City Limit and within existing ROW	Regional bicycle and pedestrian connectivity, safety and active living	Low/Long
B2	East-West Shared-Use Paths	Construct a local pathway system connecting neighborhoods to Millersburg Park and City Hall	Local bicycle and pedestrian access, active living, and connectivity	Medium/ Medium
B3	Woods Road Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Woods Rd and within existing ROW	Local bicycle and pedestrian access, active living, safety and connectivity	High/ Medium
B4	Old Salem Road Shoulder Lanes (interim project)	Construct continuous bicycle access on Old Salem Rd from north to south City limits by widening shoulder at locations where shoulder is less than 2 feet.	Regional bicycle connectivity and safety	Low/Short
B5	Conser Road Bicycle Lanes	Extend bicycle lanes on Conser Rd to west City limits	Local bicycle and pedestrian access, active living, safety and connectivity	Medium/ Short

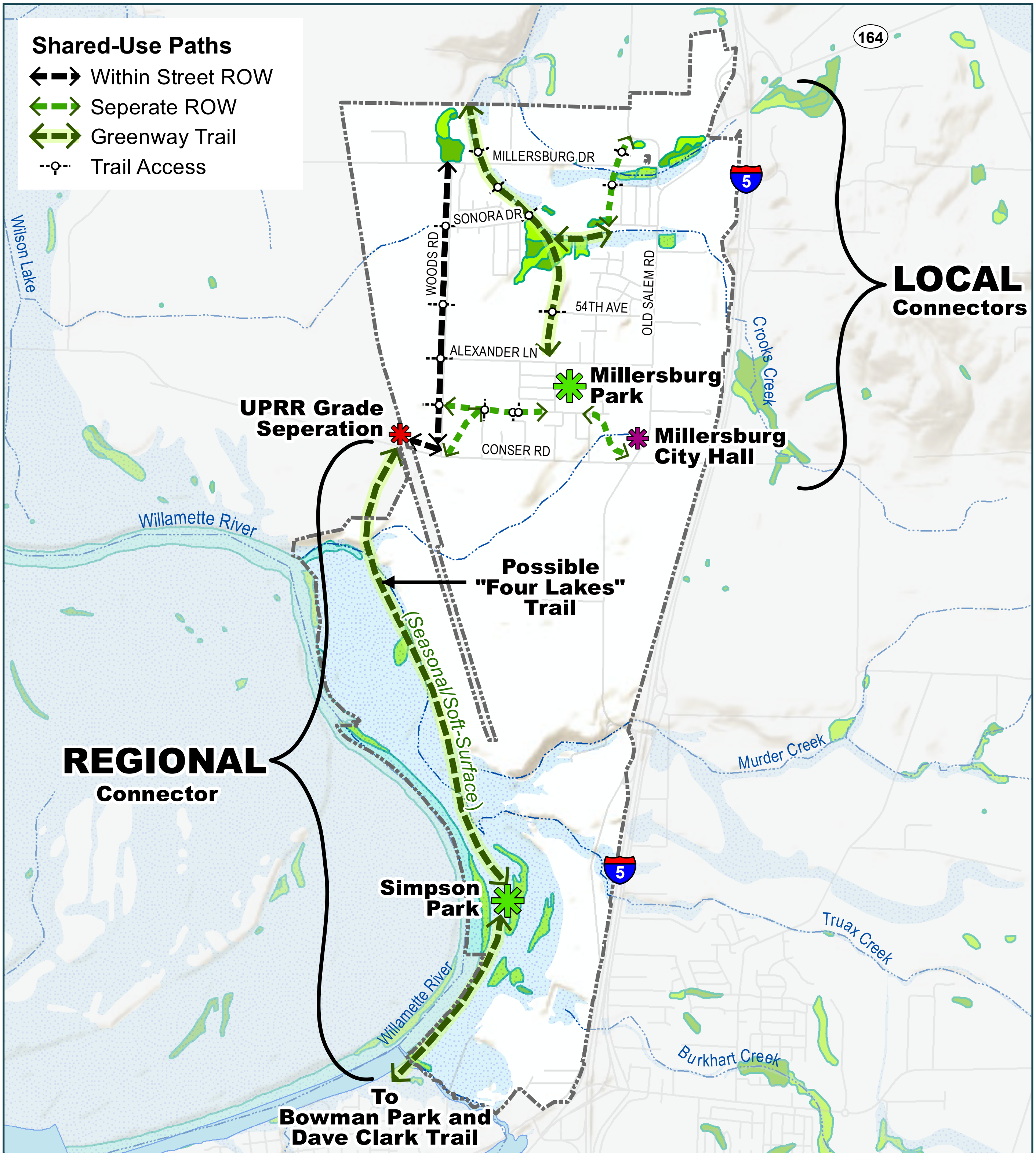


Data Sources:
ESRI, ArcGIS Online, USGS Quadrangle.

0 3,000 6,000 Feet

Figure 2

Bicycle System Improvement Options



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, USGS Quadrangle.

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0 3,000 6,000 Feet

Figure 3

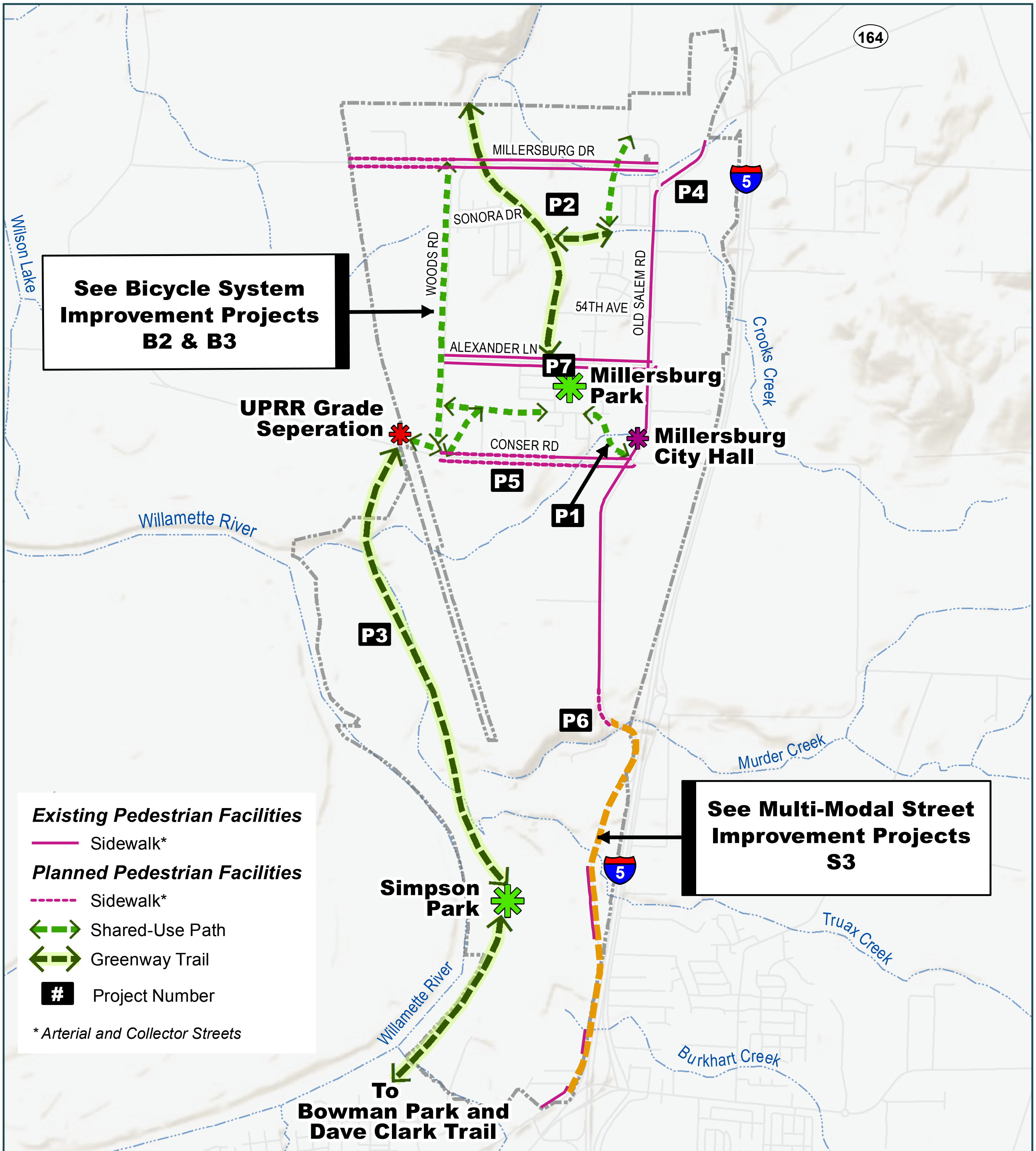
Conceptual Shared-Use Path and Trail Network

Pedestrian System Improvements

The improvements identified in Table 5 improve pedestrian system connectivity, mobility and user safety. Figure 3 and Figure 4 depict the draft locations of potential pedestrian improvements.

Table 5. Potential Pedestrian System Improvements

ID	Improvement	Description	Benefits	Need/ Timeline
P1	Millersburg Park-City Hall Shared-Use Path	Construct shared-use path between Millersburg Park and City Hall, providing important inter-neighborhood connectivity	Multi-modal safety and connectivity	Medium/ Short
P2	Millersburg Greenway	Construct a greenway trail within the Crooks Creek riparian corridor, linking Millersburg Park and north Millersburg neighborhoods	Multi-modal safety, connectivity and active living	Medium/ Long
P3	"Four Lakes" Trail	Complete Feasibility Plan and construct "Four Lakes" Trail - from Conser Road along the Willamette River to Simpson Park and south to Bowman Park and Dave Clark Trail (Albany). Coordinated with Conser Road/UPRR Crossing Improvement (Table 3, Improvement S5)	Regional multi-modal connectivity, tourism and active living	Low/Long
P4	Curb Ramp Replacements	Upgrade existing street intersection curb ramps to meet ADA design requirements	Pedestrian access and safety	High/ Short
P5	Conser Road Sidewalks	Extend the north side sidewalk west to city limits. Extend south side sidewalk west to city limits as development occurs.	Pedestrian access, safety and connectivity	Medium/ Medium
P6	Old Salem Road Sidewalks	Construct new sidewalks along west side of Old Salem Road, north of Nygren Road	Pedestrian access, safety and connectivity	Medium/ Medium
P7	Alexander Dr Pedestrian Crossing	Provide a RRFB and ADA pedestrian crossing across Alexander Dr near City park	Pedestrian access, safety and connectivity	High/Short



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, USGS Quadrangle.

N

0 3,000 6,000 Feet

Figure 4

Pedestrian System Improvement Options

Transit System Improvements

As no transit system currently exists in the City of Millersburg, this section focuses on transit-supportive improvements as shown in Table 6. The Regional Transportation Plan (RTP) and associated Transit Development Plan will identify projected transit service demand and potential coverage plans for the MPO area including Millersburg. The extension of public transportation service from Albany to Millersburg could be provided by and in coordination with Millersburg's regional planning partners. The primary purpose of these improvements is to support regional planning efforts to extend public transit service to Millersburg.

Table 6. Potential Transit Improvements

ID	Improvement	Description	Benefit	Need/ Timeline
T1	Transit Stop	Identify general location of future transit stop(s) and amenities	Increase travel options to Millersburg residents	Low/Long

The City does not have a transit system in place; however Albany Call-A-Ride provides public transportation service in Millersburg for seniors and individuals with disabilities. OCWCOG Rideline also provides medical transportation services to Medicaid eligible individuals. These both help fill key gaps in the transportation (and transit) systems. Further discussion on the existing public transportation system may be found in *Technical Memorandum #5: Evaluate Existing Conditions.*

System and Demand Management Improvements

The improvements identified in this section focus on non-capacity adding strategies that attempt to enhance the performance of the existing transportation system through system or demand management. The Potential System Management Improvements are shown in Table 7. There are no existing or forecasted future operational concerns in Millersburg; therefore demand management improvement options are not needed.

Table 7. System Management Improvement Options

ID	Improvement	Description	Benefits	Need/ Timeline
TSM1[1]	Speed Warning System on Century Drive	Install a speed warning system on Century Drive	Vehicular safety	Medium/ Long
TSM2[2]	Install speed limit signs on Woods Rd and Conser Rd	Conduct a speed study to identify appropriate speed limit posting and properly sign the roadways	Multi-modal safety	Low/Medium

Note: The improvement options listed in this table will require coordination with other jurisdictions and thus is not a priority for the Millersburg TSP

1. TSM1 is located outside of City Limits
2. Conser Road is under Linn County jurisdiction

The primary purpose of these improvements is to enhance safety for all modes which is advantageous to disadvantaged populations.

Maintenance and Preservation

The improvements identified Table 8 focus on non-capacity adding strategies that attempt to maintain the performance of the existing transportation system through preservation methods.

Table 8. Potential Maintenance Program

ID	Improvement	Description	Benefits	Need/ Timeline
M1	City-wide Pavement Management Plan	Conduct a comprehensive inventory and evaluation of street pavement conditions and develop Pavement Management Plan	Preserve and maintain City infrastructure and economic development	High/Short

Mobility Impacts

No vehicular traffic mobility (capacity) deficiencies were identified for TSP study intersections on streets within the Millersburg city limits. Study area intersections outside the city limits are being addressed by the Albany Area MPO Regional Transportation Plan. Potential pedestrian and bicycle improvements have been identified to address multi-modal safety and mobility, and the MPO will identify regional transit service expansion to Millersburg.

Potential Funding Sources

Funding sources in the memorandum are categorized by federal, state and local origin. In general, many Oregon cities are finding that their portion of state and federal gas tax and vehicle registration receipts are largely used to offset street maintenance expense, with very little available for capital improvements.

The city currently uses two (2) primary revenue sources to fund transportation system expenses: State Highway Fund (gas tax) and transportation system development charges (SDCs). In addition to the current funding sources, ODOT estimates that Millersburg *may* receive a total of $800,000 (a non-binding estimate) in discretionary funds to the year 2040 planning horizon.

Assuming a continued trend in Millersburg's SDC receipts and gas tax revenues, plus revenue from regular receipts from Oregon's discretionary funds program, Millersburg's transportation revenue may exceed $194,000 annually (2016 dollars) and a total of $4.47 million by year 2040. *Technical Memorandum #8: Finance Program* provides more detailed discussion on Millersburg's historic funding and potential for future funding.

Improvement Priorities

This section provides a finalized list of improvements that address transportation deficiencies while considering constraints of the existing system. It includes specific information on cost estimates, and groups the improvements into two categories: Financially Constrained and Aspirational. Improvements listed under Financially Constrained, Table 9, reflects improvements that are reasonably likely to be funded through the 2040 planning horizon. The aspirational improvements, Table 10, may also be constructed within the planning horizon; however, while they are desired by the community they currently do not have an identified funding source.

The draft improvement list for the TSP was developed in steps:

- Review improvements in existing plans
- Identify additional improvements
- Evaluate proposed improvements:
    - Primary Evaluation: Evaluation criteria were applied to improvements across all modes based on consistency with Millersburg's transportation goals. These criteria provided a means to evaluate very different improvements using the broad criteria for all improvement types.
    - Secondary Evaluation: Evaluate improvements based on community needs and timeline

Table 9. Summary of Financially Constrained Improvements

ID	Improvement	Description[1]	Purpose	Need	Timeline	Planning Level Cost Opinion ($2016 Dollars)[2]
S6	Reconstruct Millersburg Dr	Reconstruct Millersburg Dr west of Woods Rd to City Limits. Upgrade to arterial cross-section (bike lanes, curb, gutter, sidewalk) with development	Regional multi-modal connectivity and safety	Medium	Development Driven	$1.14 mil[3]
S7*	Reconstruct Morningstar Rd	Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multi-modal connectivity and safety	Medium	Medium	$650,000
S8*	Reconstruct Woods Rd	Two Phases: Reconstruct Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk) – *Would preclude need for Improvement B3* Phase I: North of Alexander Ln Phase II: South of Alexander Ln	Regional multi-modal connectivity and safety	Medium	Medium	I: $1 mil II: $500,000
B4*	Old Salem Rd Shoulder Lanes (interim project)	Construct continuous bicycle access on Old Salem Rd from north to south City limits by widening shoulder at locations where shoulder is less than 2 feet.	Regional bicycle connectivity and safety	Low	Short	$50,000
B5*	Conser Rd Bicycle Lanes	Extend bicycle lanes on Conser Rd to west City limits (paint only)	Local bicycle and pedestrian access, active living, safety and connectivity	Medium	Short	$10,000
P1	Millersburg Park-City Hall Shared Use Path	Construct shared-use path between Millersburg Park and City Hall, providing important inter-neighborhood connectivity	Multi-modal safety and connectivity	Medium	Short	$100,000
P5*	Conser Rd Sidewalks	Extend the north side sidewalk west to city limits. Extend south side sidewalk west to city limits as development occurs.	Pedestrian access, safety and connectivity	Medium	Medium	$250,000
P6*	Old Salem Rd Sidewalks	Construct new sidewalks along west side of Old Salem Road, north of Nygren Road	Pedestrian access, safety and connectivity	Medium	Medium	$200,000
P7*	Alexander Dr Pedestrian Crossing	Provide a RRFB and ADA ramp pedestrian crossing across Alexander Dr near City park	Pedestrian access, safety and connectivity	High	Short	$40,000
					Total Improvement Costs	$3,940,000
					Millersburg Forecasted Funds through Planning Horizon	$4,470,000
					Approximate Funds Available (Pavement Maintenance/Other):	$530,000

**Asterisk indicates improvement and associated cost estimate is included in most recent (December 21, 2015) Millersburg Street Improvements list*

Notes:

1. *The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any facility are subject to change, will ultimately be determined through a preliminary and final design process. If the improvement impacts a state facility, it will be subject to ODOT approval.*
2. *Assumes that no funds are dedicated to maintenance/operations and does not include the cost of right-of-way*
3. *This improvement is development driven; cost is expected to be shared with developer.*

Table 10. Summary of Aspirational Improvements

ID	Improvement	Description[1]	Purpose
S1*	Zuhlke Ln Extension	Two Phases (to be determined by need): Extend Zuhlke Lane west to connect to Woods Rd and west to connect to Old Salem Rd	Multi-modal connectivity, development and access
S2	Millersburg gateway treatments	Provide gateway treatments at northern and southern end of Millersburg (Old Salem Rd)	Tourism and livability
S3	Reconstruct Old Salem Rd	Reconstruct Old Salem Road to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multi-modal connectivity and safety
S4	New local streets	The TSP will map the general location of new street connectivity within future development areas – construction of new streets will occur with development	Local multi-modal connectivity, development and access
S5	Grade separated RR crossing on Conser Rd	Provide safe, multi-modal access across Union Pacific Railroad	Multi-modal safety, and connectivity
S9*	Realign Conser at Old Salem Rd	Realign the current offset intersection to a standard 4-leg intersection.	Regional multi-modal connectivity and safety
B1	Old Salem Rd Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Old Salem Rd from the North City Limit to South City Limit and within existing ROW	Regional bicycle and pedestrian connectivity, safety and active living
B2	East-West Shared-Use Paths	Construct a local pathway system connecting neighborhoods to Millersburg Park and City Hall	Local bicycle and pedestrian access, active living, and connectivity
B3	Woods Rd Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Woods Rd and within existing ROW	Local bicycle and pedestrian access, active living, safety and connectivity
P2	Millersburg Greenway	Construct a greenway trail within the Crooks Creek riparian corridor, linking Millersburg Park and north Millersburg neighborhoods	Multi-modal safety, connectivity and active living
P3	"Four Lakes" Trail	Complete Feasibility Plan and construct "Four Lakes" Trail - from Conser Rd along the Willamette River to Simpson Park and south to Bowman Park and Dave Clark Trail (Albany). Coordinated with Conser Rd/UPRR Crossing Improvement (Table 3, Improvement S5)	Regional multi-modal connectivity, tourism and active living
Transportation Programs or Projects – Not Funded by City			
T1	Transit Stop	Identify general location of future transit stop(s) and amenities. *Note: The Regional Transportation Plan (RTP) and associated Transit Development Plan will identify projected transit service demand and potential coverage plans for the MPO area including Millersburg. The extension of public transportation service from Albany to Millersburg could be provided by and in coordination with Millersburg's regional planning partners*	Increase travel options to Millersburg residents
TSM1	Speed Warning System on Century Drive	Install a speed warning system on Century Dr	Vehicular safety
TSM2	Install speed limit signs on Woods Rd and Conser Rd	Conduct a speed study to identify appropriate speed limit posting and properly sign the roadways	Multi-modal safety
TDM	Support Transportation Demand Management	Work with Oregon Cascades West Council of Governments (OCWCOG) to identify TDM programs and potential funding sources (grants or TDM funds)	Increase travel options to Millersburg residents
SRTS	Support Safe Routes to School	Work with OCWCOG and Albany School District to implement Safe Routes to School (SRTS)	Increase travel options to Millersburg residents, safety, Regional Connectivity

**Asterisk indicates improvement is included in most recent (December 21, 2015) Millersburg Street Improvements list*

Note:

1. *The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements depicted are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any facility are subject to change, will ultimately be determined through a preliminary and final design process. If the improvement impacts a state facility, it will be subject to ODOT approval.*

CITY OF MILLERSBURG TRANSPORTATION SYSTEM PLAN

Technical Memorandum #7 APPENDICES
(Task 5.1 Solutions Evaluation)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

August 2016

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Appendix A – Draft Transportation Improvement Options Evaluation

Evaluation Matrix

Draft TSP Transportation Improvement Options

Millersburg TSP Goals & Objectives

Goal / Objectives / Criteria	Multi-Modal Street									Bicycle System					Pedestrian System							Other	
	Zuhlke Ln Extension	Millersburg Gateway Treatments	Re-construct Old Salem Road	New Local Streets	UPRR Over-crossing	Re-construct Millersburg Dr	Re-construct Morningstar Rd	Re-construct Woods Rd	Realign Conser at Old Salem Rd	Old Salem Rd Shared-Use Path	East-West Shared-Use Path	Woods Rd Shared-Use Path	Old Salem Rd Shoulder Lane	Conser Road Bicycle Lanes	Millersburg Park-City Hall Shared-Use Path	Millersburg Greenway	Four-Lakes Trail	ADA Curb Ramp Replacement	Conser Rd Sidewalks	Old Salem Rd Sidewalks	Alexander RRFB Ped Crossing	Mainten-ance	Transit Stops
Goal	S1	S2	S3	S4	S5	S6	S7	S8	S9	B1	B2	B3	B4	B5	P1	P2	P3	P4	P5	P6	P7	M1	T1
Planning Level Cost Estimate	$ 1,250,000			With Development			$ 650,000	$ 1,500,000	$ 1,750,000			$ 600,000	$ 50,000		$ 100,000				$ 250,000	$ 250,000	$ 50,000		
Objectives / Criteria																							
1 Increase the safety and security for all travel modes.																							
1. Reduce the number of injury and fatal crashes	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+		
2. Reduce emergency respone times through improved connectivity	+			+	+				+														
2 Enhance connectivity for all travel modes.																							
3. increase the sidewalk coverage on collector and arterial streets	+					+	+	+											+	+	+		
4. increase the total length of shared-use paths (off-street) and collector/arterial bike lanes (on-street)			+		+	+	+	+		+	+	+	+	+	+	+	+						
5. Introduce and improve transit frequency and coverage*																							+
6. Reduce out of direction travel	+			+					+														
3 Promote economic development and preserve the mobility of existing freight routes to ensure the efficient movement of goods.																							
7. Increase total number of jobs by enhancing freight mobility																							
4 Provide for a balanced, multimodal transportation system that meets existing and future needs.																							
8. Add local streets, as identified in the adopted TSP, to increase connectivity	+			+					+														
9. Increase walking, bicycling and transit* mode shares	+		+	+		+	+	+		+	+	+	+	+	+	+	+		+	+	+		+
10. Maintain the transportation system in a state of good repair									+													+	
11. ıncrease transit frequency and reliability*																							+
12. Reduce Vehicle Miles of Traveled (VMT) per Capita*	+			+							+	+	+	+	+	+	+						
5 Plan and design a transportation system to enhance livability and support positive health impacts.																							
13. Increase the total length of shared-use paths and trails			+		+	+	+	+		+	+	+	+	+	+	+	+						
14. Improve health and wellness of the general population by increasing active transportation choices and access to care facilities	+		+	+	+	+	+	+		+	+	+	+	+	+	+	+		+	+	+		
6 Demonstrate responsible stewardship of funds and resources.																							
15. Minimize new capital cost expenditures when possible					-	-	-	-	-													+	
16. Reduce system lifecycle costs through advanced planning (maintenance and preservation)																						+	
17. Increase total transportation revenue																							
7 Coordinate transportation and land use decision-making to foster development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.																							
18. ıncrease development of compact community developments				+																			
19. Increase relative land values		+								+	+	+	+	+	+	+	+					+	
8 Provide for a diversified transportation system that ensures mobility for all.																							
20. Distribute transportation system user benefits evenly across all population groups																						+	
21. Confirm or revise city transportation design standards (as needed) to help ensure that they meet the requirements set forth in the American with Disabilities Acts (ADA).																		+					
9 Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.																							
22. Reduce total air contaminates and toxins created by the regional transportation system*	+			+																			
23. Reduce total impacts on life cycle CO2 caused by the transportation system*	+			+					+														
24. Reduce transportation system related risks to the natural, built, and cultural resources	+			+					+														
Preliminary Evaluation Score	11	1	5	11	4	5	5	5	6	6	7	7	6	7	7	7	7	1	4	4	4	5	3
Need/Timeline	Low/Long	Low/Med	Med/Long	Low/Med	Low/Long	Low/Long	High/Med	Med/Med	Med/Med	Low/Long	Med/Med	High/Med	Low/Short	Med/Short	Med/Short	Med/Long	Low/Long	Should be updating ADA ramps when feasible - potential TGM grant available through MPO	Med/Med	Med/Med	High/Short	Ongoing as part of Maintenance Plan - TBD	Requires Coord. w/ RTP
List	II	II	II	II	II	II	I	I	I	II	II *Could replace S8	II*	I	I	I	II	II		I	I	I		

Criteria also defined in City's Vision and Strategy Plan

+	Meets Crieria
-	Does not Meet Criteria
(blank)	Does not apply

Forecasted funds through 2040: $ 4,470,000

Appendix B – TDM Strategies (Employee Commute Options (ECO) Sample Trip Reduction Plan)

State of Oregon
Department of Environmental Quality

Employee Commute Options (ECO) Sample Trip Reduction Plan

This is a trip reduction plan written for a fictitious company. This is an example of a plan that would meet the requirements of OAR 340-242-0160 of the ECO rules. This is only a sample and does not represent any indication of a required format. Employers are only required to provide the information listed in OAR 340-242-0160. For a copy of this document in MSWord, e-mail a request to eco@deq.state.or.us.

What should be included in an auto trip reduction plan?

1. The results of the baseline survey (or comparable documentation):

The report of survey findings is attached.

2. Calculation of baseline and target auto trip rates:

The baseline auto trip rate for XYZ Company is .94. The target auto trip rate is .85 *(a 10 percent reduction from the baseline is .94 x .90 = .85)*. If XYZ Company maintains its current employee size of 129 employees, it will need to reduce 60 auto trips per week (or an average of 12 auto trips per day*). (10 percent reduction from 598 weekly auto trips)*

3. Any employee commute option programs currently in use at the work site:

XYZ Company provides a bicycle rack (not covered) at the entrance to its work site. A supply of Tri-Met bus schedules for the lines serving the site are available in the Human Resources office.

4. **New commute options to be implemented at the work site that have the potential to** achieve and maintain the target auto trip rate:

Bicycling
Will install a covering over the existing bicycle rack to protect employees' bicycles from the elements. The rack is located at the front entrance to the building. This is a highly visible well-traveled location and security has not been a problem. Employees commuting by bicycle will be allowed to use the showers and lockers in the maintenance area of the work site. Bike lanes are being installed by the city on the street in front of our business. Nine percent of the drive alone employees expressed an interest on the survey in showers for bicycle commuters. The goal is a **1 percent** trip reduction through bicycling, or an average of **6 trips per week**.

Telework
The Oregon Department of Energy will provide consultation on the design of a telework program. XYZ company will offer teleworking to staff whose work assignments can reasonably be completed at home. Thirty two percent of employees who currently drive alone to work expressed an interest on the survey in teleworking. XYZ Company has determined that 75 percent of these employees would be eligible to participate. The resulting potential participation (.75 x .32) is 24 percent of employees who currently drive to work. XYZ is targeting a trip reduction of **5 percent** or **29 trips** of the total weekly auto trips.

Transit
XYZ Company is located on two bus lines, which run between the South Transit Center and Downtown Portland. The bus stop is located 1/8 mile from the work site entrance with service about every 20 minutes between 6 a.m. and 8 a.m. and 3 p.m. and 5 p.m. Employees are on flexible schedules, but the majority arrive at work between 7 a.m. and 8 a.m. and leave between 3:30 p.m. and 5 p.m. After meeting with a Tri-Met representative, XYZ Company has decided to begin selling transit passes and tickets at the work site and subsidize the cost of a pass at 50 percent.

An emergency ride home program will also be provided. Twenty five percent of the drive alone employees expressed an interest on the survey in the company paying for part of a Tri-Met pass. The company's goal is to increase ridership by 3 percent. This would represent 18 trips per week, or 3 percent, if employees used transit every day. Assuming some would not ride every day, a four day per week average was assumed, and would result in a trip reduction of **2.3 percent** or **14 trips per week**.

Carpool
Thirty six percent of the employees surveyed indicated an interest in carpool matching help. XYZ Company distributed the carpool sign-up sheet to employees. Using Tri-Met's carpool matching database, potential matches were found for 95 percent of the 25 employees returning a sign-up sheet. These 25 employees represent a potential auto trip reduction of half of their respective commute trips (assuming 2-person carpools) or 60 trips per week. Assuming that these employees would carpool on average 3 days per week, the potential trip reduction **is 6 percent** or **36 trips per week**.

5. Empirical evidence that the commute option(s) to be offered or supported by the employer have the potential to achieve and maintain the target auto trip rate:

All reductions calculated using Attachment A: Commute Trip Reduction Work Sheet (attached):

Bicycling 1%

Telework 5%

Transit 2.3%

Carpool 6% (projected trip reduction is significantly higher than the DEQ 1-2 percent range. This is based on the carpool sign-up participation rate of 25 employees and the 95 percent success rate for finding matches).

The total projected trip reduction is 14.3 percent or 87 trips per week, exceeding the ECO required target of 10 percent or 60 trips per week.

6. Any unique aspects of the business or work site influencing the trip reduction strategies selected:

Strategies were selected based on the employee survey findings. No unique aspects have been identified.

7. A schedule for implementing each of the selected commute option measures:

Bicycling: Employees can begin using the showers and lockers immediately. The covering for the rack will be completed in 30 days.

Teleworking: Teleworking opportunities will be advertised to the appropriate employees upon completion of ODOE's study with recommendations. The target implementation is within six months.

Transit: The pass subsidy and guaranteed ride home program will be put into place with Tri-Met's assistance. The target implementation is within 2 months.

Carpooling: Carpool matching has been completed through Tri-Met's database. Match information has been distributed to the appropriate employees.

8. Any alternative emission reduction proposals prepared by the employer according to OAR 340-242-0240:

XYZ Company will study the possibility of re-routing its delivery trucks in the area to reduce miles driven. However, no specific proposal is submitted at this time.

9. The name, title, telephone number, and business mailing address of the person designated by the employer as the contact for the work site (contact person does not have to be located at the work site); and a signed statement certifying that the documents and information submitted in the plan are true and correct to the best of that person's knowledge.

Jane Jones
Transportation Coordinator
XYZ Company
123 Northeast Way
Portland, OR 97xxx
(503) 999-9999

I certify that the documents and information submitted in this plan for XYZ Company are true and correct to the best of my knowledge.

Jane Jones

Attachment A
Commute Trip Reduction Work Sheet

ECO Strategy	Potential Trip Reduction	x	Percentage of Employees Who Will Be Offfered This Strategy	=	Overall Potential Trip Reduction	Employer's Trip Reduction Target for Strategy
Telecommuting			See End Note [i]			
• Full Time	82 - 91%		________		________	________
• 1-2 Days/Week	14 - 36%		________		________	________
Compressed Work Week			See End Note [1]			
• 9/80 Schedule	7 - 9%		________		________	________
• 4/40 Schedule	16 - 18%		________		________	________
• 3/36 Schedule	32 - 36%		________		________	________
Transit Pass Subsidy						
• Full Subsidy						
- High Transit Service	19 - 32%		________		19 - 32%	________
- Medium Transit Service	4 - 6%		________		4 - 6%	________
- Low Transit Service	.5 - 1%		________		.5- 1%	________
• 1/2 Subsidy			________			
- High Transit Service	10 - 16%		________		10 - 16%	________
- Medium Transit Service	2 - 3%		________		2 - 3%	________
- Low Transit Service	0 - .5%		________		0 - .5%	________
Cash Out Employee Parking						
- High Transit Service	8 - 20%		________		________	________
- Medium Transit Service	5 - 9%		________		________	________
- Low Transit Service	2 - 4%		________		________	________
Eliminate Parking Subsidies						
- High Transit Service	8 - 20%		________		________	________
- Medium Transit Service	5 - 9%		________		________	________
- Low Transit Service	2 - 4%		________		________	________
Reduced Cost Parking for HOVs	1 - 3%		________		1 - 3%	
Alternate Mode Subsidy						
• Full Subsidy						
- High Transit Service	21 - 34%		________		21 - 34%	________
- Medium Transit Service	5 - 7%		________		5 - 7%	________
- Low Transit Service	1 - 2%		________		1 - 2%	________
• 1/2 Subsidy						
- High Transit Service	10 - 17%		________		10 - 17%	________
- Medium Transit Service	2 - 4%		________		2 - 4%	________
- Low Transit Service	.5 - 1%		________		.5 - 1%	________
On-Site Services	1-2%				1-2%	________
Bicycling Program	0 - 10%		See End Note [ii] ________		________	________

ECO Strategy	Potential Trip Reduction	X	Percentage of Employees Who Will Be Offfered This Strategy	=	Overall Potential Trip Reduction	Employer's Trip Reduction Target for Strategy
On-Site Rideshare Matching for Carpools and Vanpools Without support strategies With support strategies	1 - 2% 6 – 8%		________ ________		1 - 2% 6 – 8%	________ ________
Provide Vanpools - Company-Provided Vans With a Fee - Company-Subsidized Vans	15 - 25% 30 - 40%		See End Note iii ________ ________		________ ________	________ ________
Gifts/Awards for Alternative Mode Use	0 - 3%		________		0 - 3%	________
Provide Buspools	3 - 11%		________		3 - 11%	________
Walking Program	0 -3%		________		0 - 3%	________
Time Off with Pay for Alternative Mode Use	1 - 2%		________		________	________
Company Cars for Business Travel	0 - 1%		________		0 - 1%	________
Guaranteed Ride Home Program*	1 - 3%		________		1 - 3%	________
	TOTAL ESTIMATED EFFECTIVENESS					

* Can only be selected in combination with more effective transit, ridesharing, or parking measures.

SUPPORT STRATEGIES

In addition to the ECO strategies in the checklist, at least two support strategies must be selected. Please check those support strategies from the list below that you will use at your work site:

☐ Employee Transportation Coordinator
☐ Marketing/Education Campaign
☐ Preferential parking for HOVs
☐ On-site Transit Pass Sales
☐ Pre-tax Transit Pass Sales
☐ Employee Recognition Program
☐ Shuttles
☐ Other (please specify)____

End Notes:

i. Percentage of employees actually expected to participate.
ii. Percentage of employees who live within 6 miles of the work site.
iii. Percentage of employees who live more than 20 miles away from the work site .

Attachment B
Glossary for Commute Trip Reduction Work Sheet

9/80 Schedule	Work 80 hours in nine work days during a two-week period. Usually consists of eight nine-hour days and one eight-hour day. One additional day off every two weeks.
4/40 Schedule	Work four ten-hour days during a single work week. One additional day off each week.
3/36 Schedule	Work three twelve hour days during a single work week. Two additional days off each week.
Alternate Mode	Any mode of travel other than a single occupant vehicle. Includes (but not limited to) carpool, vanpool, transit, bicycling and walking.
Employees Affected	The percent of all employees at a site that are eligible for a particular strategy. Eligibility could be determined by the employer (e.g, only certain job employee characteristics (e.g., a bicycling program is only going to affect employees that travel six miles or less).
High Transit Service	Frequent light rail and bus service. (15 minute headways or less in the peak period.) Multiple bus routes serve location.
HOV (High Occupancy Vehicle)	Any vehicles (e.g., automobiles, trucks, vans, motorcycle) that carries more than one person. Also called carpools or vanpools.
Low Transit Service	All locations with some bus service that are not defined as medium or high.
Medium Transit Service	At least two bus routes serve location with headways of 20 minutes or less in the peak period.
TDM Strategies.	Transportation demand management strategies are measures that are implemented to reduce the amount of vehicle travel in an area.
Trip Reduction	The number (or percent) of one-way vehicle trips that are eliminated as a result of a TDM strategy. A round-trip from home to work and back would count as two vehicle trips.

Attachment B (Cont.)

Telecommuting

Telecommuting - The employee performs regular work duties at home rather than commuting to work. The employee may telecommute full time, or commute to work on some days and telecommute on others.

The range of trip reduction values reflects the possibility that an employee may sometimes need to travel to the office on a regularly scheduled telecommute day (e.g., for an office-wide meeting). The upper end of the range would apply if this is not ever expected to occur, and the lower end of the range would apply if telecommuters would come into the office on ten percent of their telecommute days. A significant influence on whether an employee needs to travel to the office on a telecommute day is the acceptance by supervisors of telecommuting and a willingness to schedule around telecommute days. For the subcategory of 1-2 Days/Week, the range also reflects the frequency of telecommuting between one and two days per week.

Compressed Work Week

Compressed Work Week - Employees work their regularly scheduled number of hours in fewer days per week or over a number of weeks. The most common forms are:

- 9/80 Schedule: Eighty hours are worked over nine days in two weeks. One day off every two weeks.
- 4/40 Schedule: Four ten-hour days worked per week. One day off each week.
- 3/36 Schedule: Three twelve-hour days worked per week. Two days off each week.

The range of trip reduction values reflects the possibility that an employee may sometimes need to travel to the office on a regularly scheduled day off (e.g., to work extra hours to meet an unexpected deadline). The upper end of the range would apply if this is not ever expected to occur, and the lower end of the range would apply if employees would come into the office on ten percent of their days off. The range is wider for those on a 3/12 schedule because it may be more difficult to coordinate schedules for those who only work three days per week.

For the strategies listed below (Transit Pass Subsidy, Cash Out Employee Parking, Eliminate Parking Subsidies, Reduced Cost Parking For HOVs, Alternate Mode Subsidy) individuals will vary in their sensitivity to an increased cost or a subsidy based on their income, and this will impact the effectiveness of a cost-based strategy. Employees with higher incomes are less sensitive to changes in price and are therefore less likely to change their travel behavior in response to a transit pass subsidy. Conversely, employees with lower incomes are more sensitive to changes in price and are therefore more likely to change their travel behavior in response to a transit pass subsidy. An average response by employees in the region would be the midpoint of each range.

Transit Pass Subsidy

Transit Pass Subsidy - For employees who take transit to work on a regular basis, the employer pays for all or part of the cost of a monthly transit pass.

Cash Out Employee Parking

Cash Out Employee Parking - An employer that has been subsidizing parking discontinues the subsidy and charges all employees for parking. An amount equivalent to the previous subsidy is then provided to each employee, who can then decide whether to continue driving (at no net change in travel cost to them) or use an alternate mode (which would presumably cost less). Thus, those who use an alternate mode would realize a monetary increase.

Eliminate Parking Subsidies

Eliminate Parking Subsidies - The portion of the cost of parking that is paid for by the employer is eliminated, and the employee pays an increased cost for parking. The existing subsidy may be in the form of payments for the parking places to a third party (such as the operator of a parking garage) or may be included in the building/office lease.

Reduced Cost Parking for HOVs

Reduced Cost Parking for HOVs - Parking costs charged to employees are reduced for carpools and vanpools.

Alternate Mode Subsidy

Alternate Mode Subsidy - For those employees that commute to work by a mode other than driving alone, the employer provides a monetary bonus to the employee. Most often, the bonus is provided monthly in the employee's paycheck.

On-Site Services

On-Site Services - Provide services at the work site that are frequently used by the employees of that work site. Examples include cafes/restaurants, dry cleaners, day care centers, and bank machines.

The variation and number of on-site services that are provided for employees will influence the amount of trip reduction that can be achieved. If a variety of on-site services are provided a greater trip reduction can be expected to be achieved. It is also important to provide services that are of interest to the employees located at a particular site.

Bicycling Program

Bicycling Program - Provide support services to those employees that bicycle to work. At a minimum, this would include safe and secure bicycle storage. Shower facilities would provide an additional incentive, as would a direct subsidy towards the purchase of a bicycle.

The range of trip reduction values reflects the willingness of a particular group of employees to bicycle to work, as well as the extent of the bicycle facilities provided. Reasons why employees may not be willing to bicycle to work, no matter how convenient, include a concern about appearance after physical exertion (e.g., crumpled business suits, perspiration), need for a car during the work day or to/from work, and perceived safety concerns. A quick, informal survey of attitudes towards bicycling may be the best approach to determining what point in the range to choose.

On-Site Rideshare Matching for Carpools and Vanpools

On-Site Rideshare Matching - Employees who are interested in carpooling or vanpooling provide information to a transportation coordinator regarding their work hours, availability of a vehicle, and place of residence. The transportation coordinator then matches employees who can reasonably rideshare together, works with neighboring employers to find matches or submits the information to Tri-Met's regional database for matching.

Successfully creating new employee carpools or vanpools requires that employees live close enough to each other (or along the route taken to the work site) and far enough away from work so that the time required for pick up and drop off does not significantly add to the total commute time. In addition, employees who rideshare would need to have similar start and end times at work, with a relatively high level of certainty that their start and end times will be consistent on a day-to-day basis. The variation found among employees for each of these factors will influence whether the lower or higher end of the range should be selected.

Provide Vanpools

Provide Vanpools - Employees that live near each other are organized into a vanpool for their trip to work. A central meeting location is designated where the employees are picked up and dropped off. The employer may subsidize the cost of operating and maintaining the van.

Similar to on-site rideshare matching, the formation of vanpools requires that employees live close enough to each other (or along the route taken to the work site) and far enough away from work so that the time required to meet at a common pick-up point does not significantly add to the total commute time. In addition, employees who vanpool would need to have similar start and end times at work, with a relatively high level of certainty that their start and end times will be consistent on a day-to-day basis. The variation found among employees for each of these factors will influence whether the lower or higher end of the range should be selected.

Gifts/Awards for Alternative Mode Use

Gifts/Awards for Alternative Mode Use **-** Employees are offered the opportunity to receive a gift or an award for using modes other than driving alone. This strategy could be designed so that employees receive points every time they use an alternate mode, and then accumulated points can be used to "purchase" an award. Another approach is to raffle prizes as part of a marketing campaign (maybe an annual rideshare fair) where the raffle tickets are distributed in proportion to the amount of alternate mode use by each employee.

The opportunity to use alternative modes and the income level of the employees will influence the effectiveness of this measure in reducing vehicle trips. Higher values in the range listed could also be achieved through creative gifts/awards programs that are customized to the characteristics of the employees. For example, if football pools are popular among employees, then a ticket to a sporting event may be an effective incentive to encourage alternative mode use.

Walking Program

Walking Program **-** Provide support services for those who walk to work. This could include buying walking shoes or providing shower facilities.

The success of a walking program will depend upon the number of employees that live within a reasonable walking distance from work. The greater majority of those who would walk to work live within one mile of the work site. Pedestrian accessibility to the work site is also an important factor. Employees will be more willing to walk to work if there are sidewalks that provide a safe and direct route from their home to the door of their work site.

Deterrents to walking include the need to cross streets with a great deal of traffic, lack of direct access (e.g., a fence that has been erected between a residential area and an office complex), and the presence of safety concerns (e.g., high crime in the neighborhood).

Time Off with Pay for Alternative Mode Use

Time Off with Pay for Alternate Mode Use - Rather than a monetary incentive, a gift, or an award, employees are offered time off with pay as an incentive to use alternate modes. An example may be to offer an extra day off with pay to employees who use a mode other than driving alone over a three-month period.

The opportunity to use alternative modes will influence the effectiveness of this measure in reducing vehicle trips. A greater amount of time off with pay for full time versus part time alternative mode use can also increase the amount of trip reduction achieved.

Company Cars for Business Travel

Company Cars for Business Travel - Employees are allowed to use company cars for business-related travel during the day. This assists to remove the disincentive for using an alternate mode for those people who may need their cars for business purposes during the workday.
The opportunity to use alternative modes will influence the effectiveness of this measure in reducing vehicle trips. In addition, the number of employees who may need a car for business travel during the day, and the level of assurance that a car will be available, will influence the amount of trip reduction that can be achieved.

Guaranteed Ride Home Program

Guaranteed Ride Home Program - A company-owned or leased vehicle or taxi fare is provided in the case of an emergency for employees that carpool, vanpool, use transit, walk, or bicycle.

A guaranteed ride home program supports the effectiveness of other ECO measures that encourage the use of transit or ridesharing. The additional effectiveness from this measure would be relatively small compared to the other measures implemented, therefore, the value selected from the range listed would in part be based upon the percent of trip reduction estimated from transit and ridesharing. This measure also has a greater impact in situations in which employees have expressed a concern about the need for a ride home in the case of an emergency or if the employee is required to work late.

Attachment C
ECO Strategy Applicability

Transportation Strategy	EMPLOYEE TYPE					
	Office/Clerical	Executive	Professional/ Technical	Sales/Service - On-Site	Sales/Service - Travels	Manufacturing/ Assembly
Telecommuting	Yes	Yes	Yes	Yes	No	No
Compressed Work Week	Yes	Yes	Yes	Yes	Yes	Yes
Transit Pass Subsidy	Yes	Yes	Yes	Yes	Yes[1]	Yes
Cash Out Employee Parking	Yes	Yes	Yes	Yes	Yes[1]	Yes
Eliminate Parking Subsidies	Yes	Yes	Yes	Yes	Yes[1]	Yes
Reduced Cost Parking for HOVs	Yes	Yes	Yes	Yes	Yes[1]	Yes
Alternate Mode Subsidy	Yes	Yes	Yes	Yes	Yes[1]	Yes
On-Site Services	Yes	Yes	Yes	Yes	Yes	Yes
Guaranteed Ride Home Program	Yes	Yes	Yes	Yes	Yes[1]	Yes
Bicycling Program	Yes	Yes	Yes	Yes	Yes[1]	Yes
On-Site Rideshare Matching	Yes	Yes	Yes	Yes	Yes[1]	Yes
Shuttle to Light Rail Station	Yes	Yes	Yes	Yes	Yes[1]	Yes
Provide Vanpools	Yes	Yes	Yes	Yes	Yes[1]	Yes
Gifts/Awards for Alternate Mode Use	Yes	Yes	Yes	Yes	Yes[1]	Yes
Provide Buspools	Yes	Yes	Yes	Yes	Yes[1]	Yes
Walking Program	Yes	Yes	Yes	Yes	Yes[1]	Yes
Time Off with Pay for Alternate Mode Use	Yes	Yes	Yes	Yes	Yes[1]	Yes
Noontime Shuttle	Yes	Yes	Yes	Yes	Yes[1]	Yes
Company Cars for Business Travel	Yes	Yes	Yes	No	Yes	No

H. Technical Memorandum #8: Finance Program

City of Millersburg Transportation System Plan

Technical Memorandum #8
(Task 5.2 Finance Program)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

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August 2016

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This memorandum includes two sections: (1) a review of Millersburg's transportation funding sources and history, to provide (2) an initial estimate (forecast) of future funding through year 2040. The funding estimates will support the city in the identification and prioritization of TSP projects as well as helping set policy to fund the TSP.

1. Funding Sources and History

Funding sources in the memorandum are categorized by federal, state and local origin. In general, many Oregon cities are finding that their portion of state and federal gas tax and vehicle registration receipts are largely used to offset street maintenance expense, with very little available for capital improvements.

The city currently uses two (2) primary revenue sources to fund transportation system expenses: State Highway Fund (gas tax) and transportation system development charges (SDCs).

Federal

The federal Highway Trust Fund is largely sourced by the federal gas tax and is distributed by formula to individual states through the Surface Transportation Program (STP). ODOT relies on these distributions to fund many of the safety, highway, and bridge improvement projects identified in the Statewide Transportation Improvement Program (STIP).

Surface Transportation Program (STP) Funds – are available through FAST Act legislation, administered through and by ODOT. STP funds are flexible and can be used for different types of capital improvements and transportation programs.

Federal Enhancement Funds - are available to complete capital improvements and programs related to pedestrian, bicycle, and other alternative travel modes to the automobile. This program can also be used for historic preservation of transportation facilities.

State

City Allocation of State Highway Fund

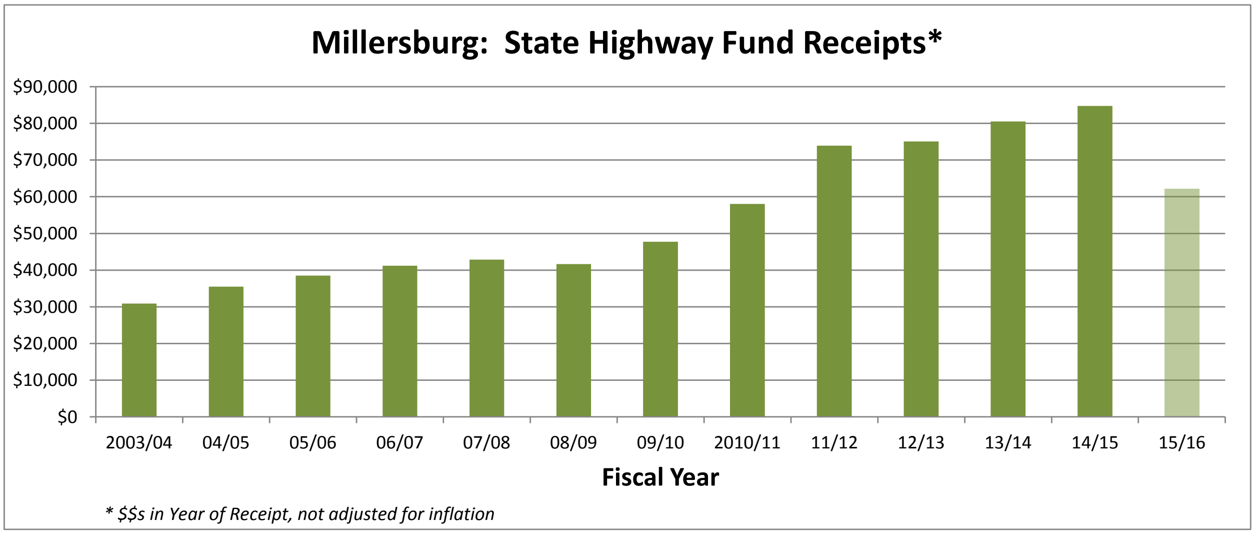
The State Highway Fund is comprised of statewide (1) motor vehicle fuel taxes, (2) motor vehicle registration fees, and (3) weight-mile tax. The City's share of these revenues is used in Millersburg to build, operate and maintain the City's street system. These funds are also used to provide transportation engineering and planning support. The state of Oregon allocates the State Highway Fund to cities based on population and counties based on number of registered motor vehicles[i]. The current formula for the State Highway Fund distribution is:

Recipient	Percent	Basis for Distribution
State	59%	
Cities	16%	Population (ORS 366.764)
Counties	25%	Vehicle Registration in each County (ORS 366.764)

Millersburg's portion of the State Highway Fund is based on its current (February, 2016) population (1,620) as a proportionate share of total city population in Oregon (2,776,959), or slightly more the one-half percent.

As shown in Figure 1, Millersburg's Oregon Highway Fund annual receipts have recently totaled around $80,000-$85,000.

Figure 1 Millersburg State Highway Fund Receipts



In the 2014/2015 fiscal year, Millersburg's State Highway Fund allocation was roughly $85,000. When inflated to 2015 dollars, the average annual State Highway Fund allocation to Millersburg is slightly more than $83,000.

Source: Oregon Department of Transportation (first eight months of fiscal year 2015/2016).

State Transportation Grants

The State provides grant funds to local jurisdictions to conduct transportation studies, improve bicycle and pedestrian facilities, and participate in State-sponsored transportation activities. Millersburg has not financed any capital projects through State grant funds in recent years.

Transportation Growth Management (TGM) Grants

The State also awards TGM grants on a competitive basis, the TGM program is jointly administered through the Department of Land Conservation and Development (DLCD) and ODOT. The City of Millersburg may use these funds to conduct planning and transportation studies related to managing growth and reducing reliance on the single-occupant vehicle (SOV). Historically, Millersburg has not funded any local planning studies through TGM.

Local Options

General Obligation Bonds (Property Tax Supported)

Bonds are a funding mechanism for constructing capital improvement projects in the City. Voter-approved bonds are sold to fund street improvement projects. Transportation projects are usually grouped in "bond packages" that go before the public for voter approval. Voter-approved General Obligation Bonds are then supported through the City's property tax base.

Millersburg has no history of GOB/property tax funding for transportation capital improvements.

Capital Funding Limitations

General Obligation Bonds are financed with property taxes. When these bonds are issued, the community pledges its "full faith and credit." This means that the local government has the unlimited power to levy property taxes to ensure that the principal and the interest on these bonds are paid. Because of this broad power, voter approval is required for each bond issue.

The revenues are collected by a special property tax levy called a "debt service levy."

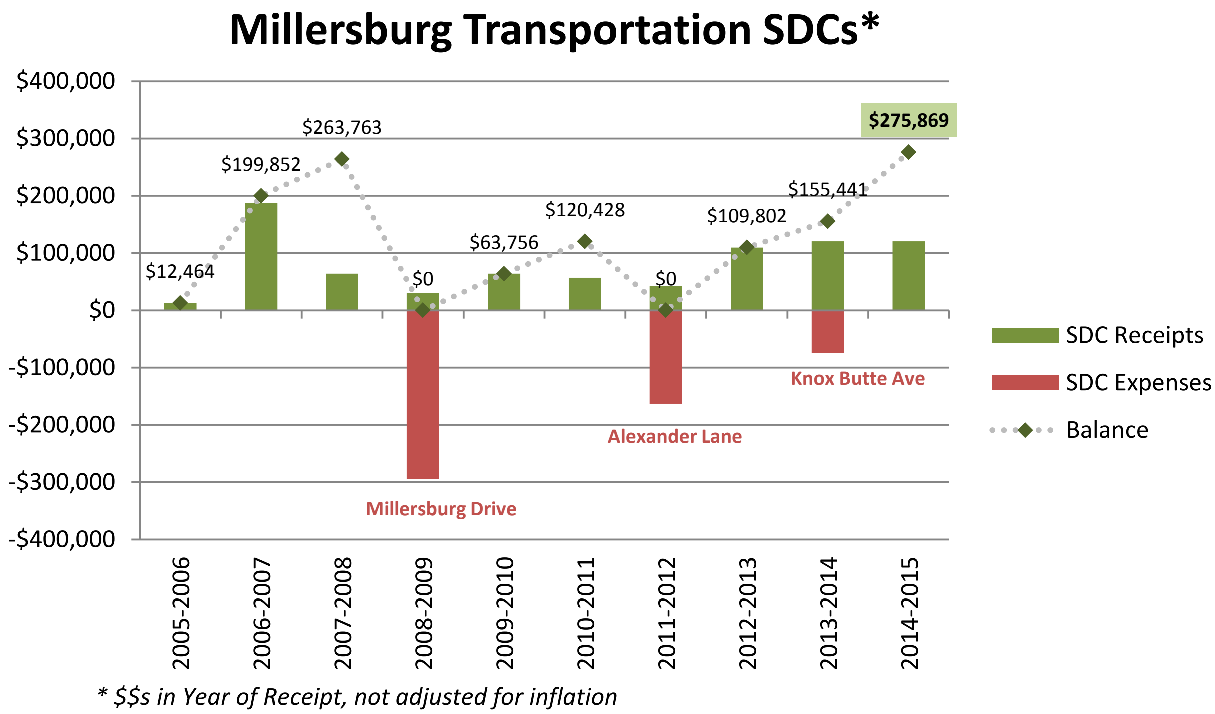
Subject to State limitations, the City has the unlimited power to levy property taxes to repay principal and interest for the term of the bonds. Because this is an unlimited pledge, the State imposes a legal debt ceiling which does not permit outstanding bonds of more than 3 percent of a City's true cash value.

Transportation System Development Charges (SDC)

The City of Millersburg adopted its transportation SDC in 2005. These funds are collected from developers as new development occurs in the City. Charges (fees) are roughly based on trip generation rates by different types of land uses (i.e., single family residential, commercial, industrial, etc.). These funds may only be used to fund transportation improvements caused through the impacts of new growth and may not be used to fix existing capacity deficiencies or maintenance.

As shown in Figure 2, Millersburg has periodically saved and packaged its gas tax and SDC revenues to fund important street improvements since 2005. City budget records indicate, however, no significant funding of street maintenance (pavement preservation) activity during this period.

Figure 2 Transportation System Development Charges



Source: City of Millersburg.

Since 2005, Millersburg has collected approximately $808,000 in transportation SDC revenues and obligated approximately $532,000 towards three major street improvement projects: Millersburg Drive, Alexander Lane and Knox Butte Avenue. As of the later part of 2015, the City's transportation SDC balance is approximately $276,000.

The most recent list of projects planned for the City of Millersburg's Capital Improvement Program (CIP) and transportation systems development charge (SDC) is summarized in Table 1.

Table 1 City of Millersburg Capital Improvement Program (Streets) – Project List and Projected SDC Funding (2015-2019)

Project Name	Project Cost	SDC Allowed Cost	Est. SDC Amount	Projected SDC Funding by Year 2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Knox Butte Ave Reconstruction & Widening	$242,567	$75,000	$75,000					
Woods Rd Reconstruction, Phase 1	$750,000	$750,000	$250,000		$250,000			
Woods Rd Reconstruction, Phase 2	$750,000	$750,000	$250,000			$250,000		
Zuhlke Rd Extension East	$500,000	$500,000	$250,000					
Zuhlke Rd Extension West	$750,000	$750,000	$250,000					
Conser Rd Realignment	$1,750,000	$1,000,000	$250,000					
Alexander Dr Crosswalk	$20,000	$20,000	$20,000		$20,000			
Total Annual Expenditures				--	$270,000	$250,000	--	--
Estimated Annual Contributions by Year				$100,000	$100,000	$100,000	$100,000	$100,000
Estimated SDC Funds Available by Year (Carryover from prior year: $250,000)				$350,000	$180,000	$30,000	$130,000	$230,000

Source: City of Millersburg, September 2015.

Development Exactions

To provide adequate infrastructure in response to site-specific growth, capital improvements can be exacted as conditions of approval for building permits, subdivisions, and zoning actions. Developers are usually required to complete frontage street improvements and other off-site transportation improvements to mitigate traffic impacts. The majority of the city's new neighborhood, local routes and some collector streets are created and improved as a result of development exactions (exactions are to be related to the project's measured impact on the infrastructure, known as "rational nexus").

Local Improvement Districts

This method allows neighboring property owners to group together to improve public facilities and then pay for them over time through individual assessments. These districts are generally used to complete local street improvements, sidewalk improvements or improvements to business districts.

Street Utility Fee

A transportation system utility fee is an option for funding street maintenance. This method charges city residents and nonresidential users a monthly or yearly fee for use of the city road system--similar to water and sewer utility fees. The fees would be calculated based on the estimated number of vehicle trips generated for each land use.

The principle behind a street utility fee is that a street is a utility used by the citizens and businesses of a city just like a water or sewer line that supplies a connection to a home or business. A fee would be assessed to all businesses and households by the City for use of City streets based on the amount of use typically generated by that particular use. For example, a single-family home typically generates 10 trips per day, so the fee is based on that amount of use. A small retail/commercial use typically generates 130 trips per day per 1,000 square feet of gross building area, so the fee for the retail/commercial use would be significantly greater than the fee for a single-family residence.

Revenue from a street utility fee can only be used for existing maintenance purposes, not for capital improvement projects. However; this money could be used to supplement revenue from the State Highway Trust Fund, which could then be used for capital improvement projects.

Table 2 lists the cities in Oregon that have adopted local street utility fees.

Table 2 Oregon Cities – Adopted Street Utility Fees

Oregon City	Population (2014)	Fee Adoption Date
Ashland	20,295	1989
Bay City	1,310	2003
Brookings	6,450	1987
Canby	15,910	2008
Central Point	17,315	2008
Corvallis	55,345	2005
Eagle Point	8,575	1990
Florence	8,480	2012
Grants Pass	34,855	2001
Hillsboro	93,340	2008
Hubbard	3,200	2001
La Grande	13,125	2009
Lake Oswego	36,990	2003
Medford	75,920	1991
Milwaukie	20,500	2006
Myrtle Creek	3,450	2010
North Plains	2,015	2003
Oregon City	33,390	2008
Philomath	4,625	2003
Phoenix	4,570	1994
Sherwood	18,575	2011
Silverton	9,330	2013
Stayton	7,685	2011
Talent	6,170	2000
Tigard	49,135	2003
Toledo	3,470	2009
Tualatin	26,510	1990
West Linn	25,425	2008
Wilsonville	21,550	1997
Winston	5,400	
Wood Village	3,895	2012

Hypothetical Millersburg Street Utility Fee

Assuming a single, flat fee of $3.00 per month per dwelling unit/water meter equivalent in Millersburg, the City could collect approximately $0.47 million for street/transportation maintenance over a 20-year planning horizon.

Local Fuel Tax

Over a dozen Oregon cities and counties have adopted local gas taxes, ranging from one ($0.01) to five ($0.05) cents per gallon. These taxes are paid to the city monthly by distributors of fuel within the city limits. Table 3 lists those Oregon cities which administer local fuel taxes.

Table 3 Oregon Cities with Local Fuel Tax

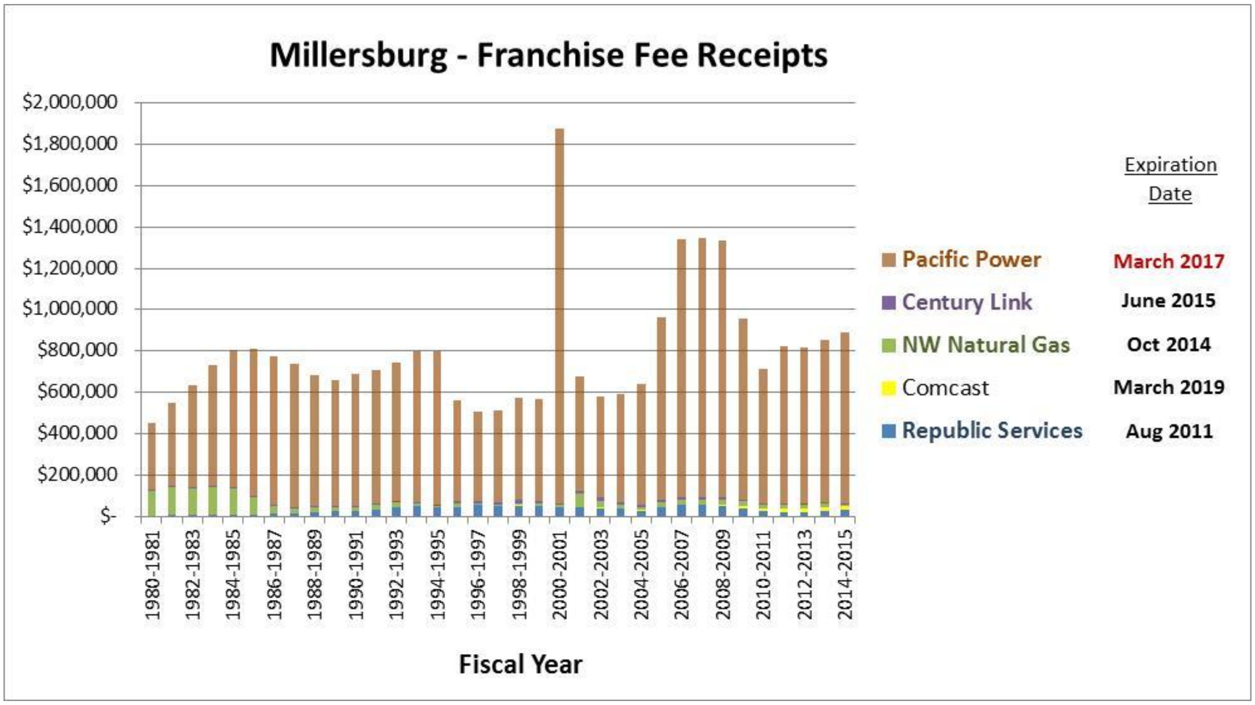
City	Fuel Tax
Woodburn	$.01 per gallon
Eugene	$.05 per gallon
Springfield	$.03 per gallon
Cottage Grove	$.03 per gallon
Veneta	$.03 per gallon
Tigard	$.03 per gallon
Milwaukie	$.02 per gallon
Coquille	$.03 per gallon
Coburg	$.03 per gallon
Astoria	$.03 per gallon
Warrenton	$.03 per gallon
Canby	$.03 per gallon
Newport	$.03 per gallon
Hood River	$.03 per gallon

Given Millersburg's limited fuel sales and proximity to Albany (which does not administer a local gas tax), a local fuel tax is likely impractical.

Utility Franchise Fees

Public utilities that use the public right-of-way to convey their services can be charged a fee for that privilege. Millersburg continues to collect franchise fees from several private utility providers, as summarized in Figure 3. The franchise fees are generally deposited into the city's General Fund. The city expects to renew its franchise fee agreement with Pacific Power in 2017.

Figure 3 Millersburg Franchise Fee Revenue History



Source: City of Millersburg.

City General Funds

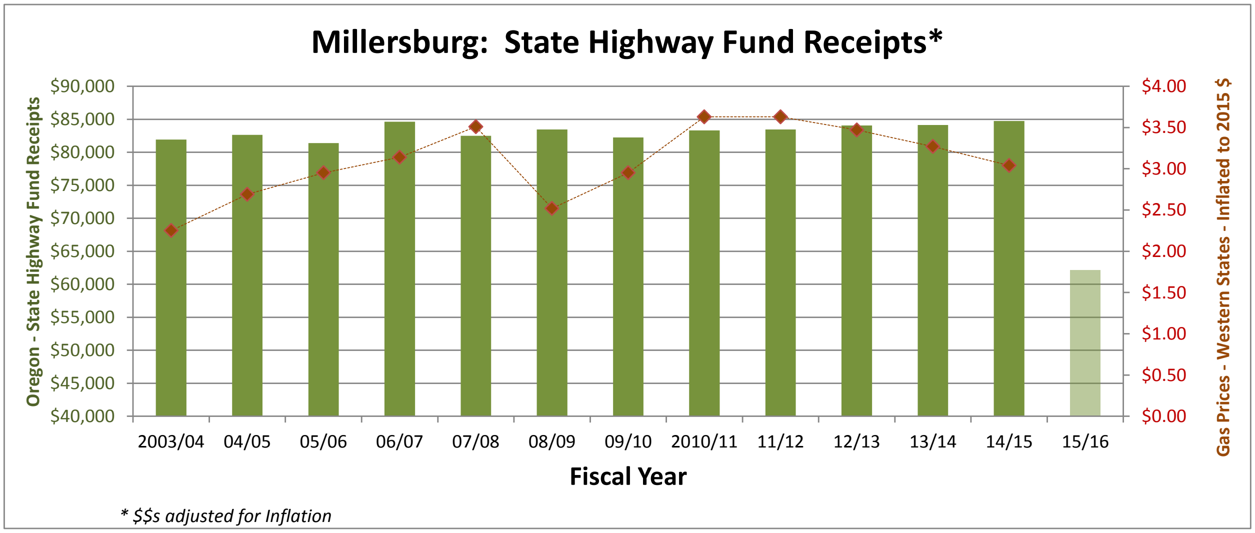
Though seldom available for transportation purposes, the City may choose to use general property tax revenues to build or operate transportation facilities. However, using general fund revenue places transportation system funding in direct competition with other City services which may be already obligated, such as police, fire, libraries, and parks.

2. Transportation Funding Forecast

State Highway Fund

As shown in Figure 4, Millersburg's Oregon Highway Fund annual receipts, when inflated to 2015 dollars, roughly average approximately $83,000 annually. Assuming a continued trend in population growth, lower gas tax revenue, increased vehicle fuel economy and other factors, Millersburg should expect an average annual receipt of slightly more than $83,000 in State Highway Fund allocations.

Figure 4 State Highway Fund Receipts

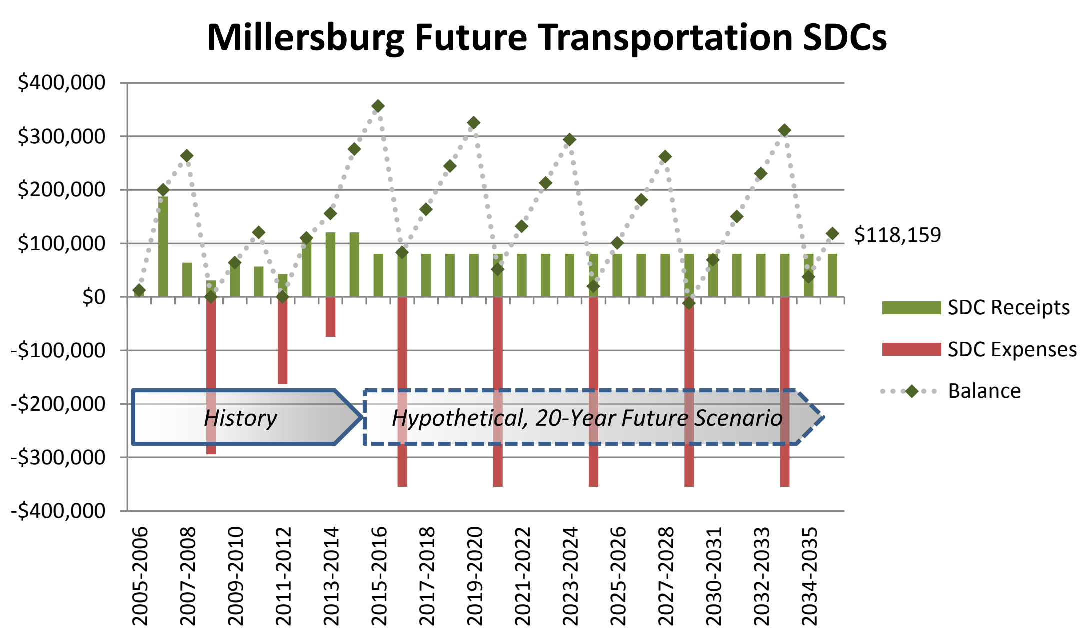


Source: Oregon Department of Transportation, (first eight months of fiscal year 2015/2016).

Transportation Systems Development Charge

Assuming a continued level of development and SDC fee structure, Millersburg should expect an average annual income of slightly more than $80,000 in transportation SDCs. As shown by example in Figure 5, over the next 20 years SDC revenues will roughly afford Millersburg to contribute towards funding five (5) street or intersection capacity improvements, each project valued with approximately $350,000 from SDC funding (presumably matched by other local funding sources).

Figure 5 Future Transportation System Development Charges



Source: Historic – City of Millersburg, Future – DEA Estimate, in Constant 2016 Dollars

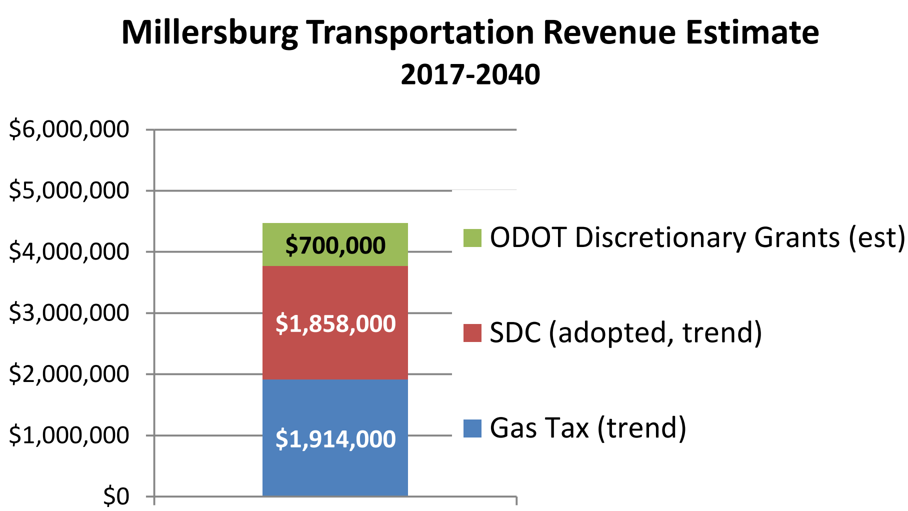
Oregon Discretionary Grants

ODOT estimates that Millersburg *may* receive a total of $700,000 (a non-binding estimate) in discretionary funds to the year 2040 planning horizon.

Initial, 20-Year Transportation Revenue Estimate

Assuming a continued trend in Millersburg's SDC receipts and gas tax revenues, plus revenue from regular receipts from Oregon's discretionary funds program, Millersburg's transportation revenue may exceed $194,000 annually (2016 dollars), and a total of $4.47 million by year 2040 – see Figure 6.

Figure 6 Future Transportation Revenue Estimate



Source: DEA Interim Estimates, Constant 2016 Dollars.

Pavement Preservation and Maintenance

Millersburg is working to complete the inventory and evaluation of their street pavement conditions and establish the priority and funding of on-going maintenance and pavement preservation. It is assumed in the Draft Millersburg TSP that the needed funding to regularly maintain city streets will be provided by one or a combination of several options: (1) direct allocation of utility franchise fee revenues (collected annually), (2) a new street utility fee (requiring new city policy direction), and/or (3) direct allocation of a portion of the city's gas tax receipts. If the city's street maintenance program is funded by gas tax revenue, then the total funds available for capital improvements will be reduced, and the TSP project list and funding priorities (listed below) will be revised.

Funding Future Transportation Improvement Priorities

This section provides a prioritized list of improvements that address transportation deficiencies while considering constraints of the existing system. It includes specific information on cost estimates, and groups the improvements into two categories: Financially Constrained and Aspirational. Improvements listed under financially constrained reflect improvements that are reasonably likely to be funded through the 2040 planning horizon. The aspirational improvements might also be constructed within the planning horizon; however, although they are desired by the community, these aspirational projects currently do not have an identified funding source.

The improvement list for the TSP was developed in steps:

- Review improvements in existing plans
- Identify additional improvements
- Evaluate proposed improvements:
  - Primary Evaluation: Evaluation criteria were applied to improvements across all modes based on consistency with Millersburg's transportation goals. These criteria provided a means to evaluate very different improvements using the broad criteria for all improvement types.
  - Secondary Evaluation: Evaluation of improvements based on community needs and timeline

Table 4. Summary of Financially Constrained Improvements

ID	Improvement	Description	Purpose	Planning-Level Cost Opinion (2016 Dollars)[1]
S6	Reconstruct Millersburg Dr	Reconstruct Millersburg Dr west of Woods Rd to city limits; upgrade to arterial cross-section (bike lanes, curb, gutter, sidewalk) with development	Regional multimodal connectivity and safety	$1.14 mil[2]
S7	Reconstruct Morningstar Rd	Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multimodal connectivity and safety	$650,000
S8	Reconstruct Woods Rd	Two Phases: Reconstruct Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk) – *Would preclude need for Improvement B3* Phase I: North of Alexander Ln Phase II: South of Alexander Ln	Regional multimodal connectivity and safety	I: $1 mil II: $500,000
B4	Old Salem Rd Shoulder Lanes (interim project)	Construct continuous bicycle access on Old Salem Rd from north to south city limits by widening shoulder at locations where shoulder is less than 2 feet	Regional bicycle connectivity and safety	$50,000
B5	Conser Rd Bicycle Lanes	Extend bicycle lanes on Conser Rd to west city limits (paint only)	Local bicycle and pedestrian access, active living, safety, and connectivity	$10,000

ID	Improvement	Description	Purpose	Planning-Level Cost Opinion (2016 Dollars)[1]
P1	Millersburg Park-City Hall Shared-Use Path	Construct shared-use path between Millersburg Park and City Hall, providing important inter-neighborhood connectivity	Multimodal safety and connectivity	$100,000
P5	Conser Rd Sidewalks	Extend the north side sidewalk west to city limits; extend south side sidewalk west to city limits as development occurs	Pedestrian access, safety, and connectivity	$250,000
P6	Old Salem Rd Sidewalks	Construct new sidewalks along west side of Old Salem Rd, north of Nygren Rd	Pedestrian access, safety, and connectivity	$200,000
P7	Alexander Dr Pedestrian Crossing	Provide an RRFB and ADA ramp pedestrian crossing across Alexander Dr near city park	Pedestrian access, safety, and connectivity	$40,000
			Total Improvement Costs	$3,940,000
			Millersburg Forecasted Funds through Planning Horizon	$4,470,000
			Approximate Funds Available (Pavement Maintenance/Other)	$530,000

Notes:

1. Does not include the cost of right-of-way.
2. This improvement is development-driven; cost is expected to be shared with developer.

Table 5. Summary of Aspirational Improvements

ID	Improvement	Description[1]	Purpose
S1	Zuhlke Ln Extension	Two phases (to be determined by need): (1) extend Zuhlke Ln west to connect to Woods Rd and (2) extend Zuhlke Ln west to connect to Old Salem Rd	Multimodal connectivity, development, and access
S2	Millersburg gateway treatments	Provide gateway treatments at northern and southern end of Millersburg (Old Salem Rd)	Tourism and livability
S3	Reconstruct Old Salem Rd	Reconstruct Old Salem Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	Regional multimodal connectivity and safety
S4	New local streets	The TSP will map the general location of new street connectivity within future development areas—construction of new streets will occur with development	Local multimodal connectivity, development, and access

ID	Improvement	Description[1]	Purpose
S5	Grade-separated railroad crossing on Conser Rd	Provide safe, multimodal access across Union Pacific Railroad	Multimodal safety and connectivity
S9	Realign Conser Rd at Old Salem Rd	Realign the current offset intersection to a standard 4-leg intersection	Regional multimodal connectivity and safety
S10	Future I-5 Interchange Connection	Add a new connection from NE Old Salem Road (south of Conser Road) to a new, fully directional interchange at Millersburg that would replace existing Murder Creek and Viewcrest interchanges	Local multimodal connectivity, development, and access
B1	Old Salem Rd Shared-Use Path	Construct a 10- to 12-foot-wide bicycle and pedestrian path parallel to Old Salem Rd from the north city limit to the south city limit and within existing right-of-way	Regional bicycle and pedestrian connectivity, safety, and active living
B2	East-West Shared-Use Paths	Construct a local pathway system connecting neighborhoods to Millersburg Park and City Hall	Local bicycle and pedestrian access, active living, and connectivity
B3	Woods Rd Shared-Use Path	Construct a 10- to 12-foot-wide bicycle and pedestrian path parallel to Woods Rd and within existing right-of-way	Local bicycle and pedestrian access, active living, safety, and connectivity
P2	Millersburg Greenway	Construct a greenway trail within the Crooks Creek riparian corridor, linking Millersburg Park and north Millersburg neighborhoods	Multimodal safety, connectivity, and active living
P3	"Four Lakes" Trail	Complete a feasibility plan and construct "Four Lakes" Trail from Conser Rd along the Willamette River to Simpson Park and south to Bowman Park and Dave Clark Trail (in Albany); coordinate with Conser Rd/UP Railroad Crossing Improvement (Improvement S5)	Regional multimodal connectivity, tourism, and active living
Transportation Programs or Projects – Not Funded by City of Millersburg			
T1	Transit Stop	Identify general location of future transit stop(s) and amenities. *Note: The RTP and associated Transit Development Plan will identify projected transit service demand and potential coverage plans for the MPO area, including Millersburg. The extension of public transportation service from Albany to Millersburg could be provided by and in coordination with Millersburg's regional planning partners.*	Increase travel options to Millersburg residents
TSM1	Speed Warning System on Century Dr	Install a speed warning system on Century Dr	Vehicular safety

ID	Improvement	Description[1]	Purpose
TSM2	Install speed limit signs on Woods Rd and Conser Rd	Conduct a speed study to identify appropriate speed limit posting and properly sign the roadways	Multimodal safety
TDM	Support Transportation Demand Management	Work with OCWCOG to identify TDM programs and potential funding sources (grants or TDM funds)	Increase travel options to Millersburg residents
SRTS	Support Safe Routes to School	Work with OCWCOG and Albany School District to implement Safe Routes to School (SRTS) program	Increase travel options to Millersburg residents, safety, and regional connectivity

Note:

1. The highway, bike lane, sidewalk, crosswalk, and transit amenity design elements described are identified for the purpose of creating a reasonable cost estimate for planning purposes. The actual design elements for any facility are subject to change, and will ultimately be determined through a preliminary and final design process. If the improvement impacts a state facility, it will be subject to ODOT approval.

I. Technical Memorandum #9: Transportation Guidelines

City of Millersburg Transportation System Plan

Technical Memorandum #9
(Task 5.3 Transportation Guidelines)

Prepared for

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August 2016

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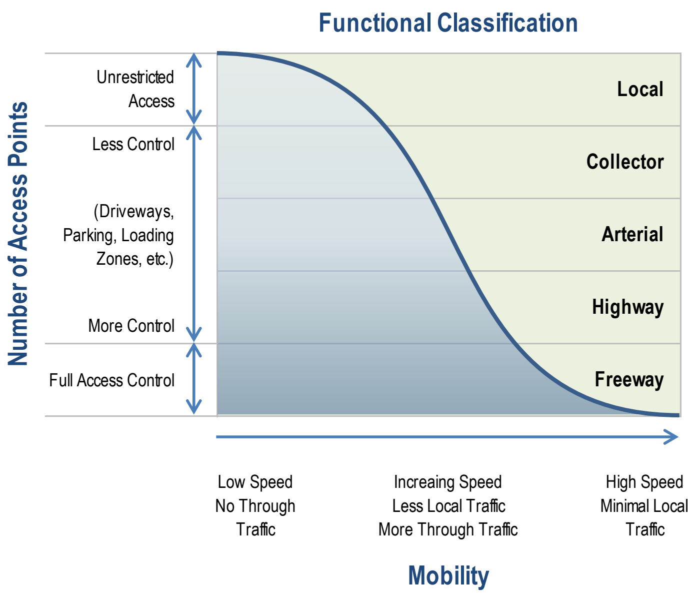
Guidelines ensure that the projects in the Transportation System Plan (TSP) have clear guidance on how they should look. Combined with supporting code, the guidelines also ensure that future development is consistent with the goals of this TSP. This memorandum defines the functional classification of the transportation system and recommends the transportation guidelines for streets maintained by the City of Millersburg.

Functional Classification

Street and highway classifications indicate purpose, design, and function. This functional classification plan ensures that streets are built and maintained with features to support demand from both the surrounding land uses and from traffic that may be traveling through parts of the city. It also describes how adjacent properties are accessed and how much mobility the street provides, as illustrated in Figure 1 below.

Figure 1. Properties of Functional Classification



Millersburg Functional Classification Plan

The functional classification illustration provides general information regarding the interaction between number of access points and mobility. The functional classification system for the Millersburg street network includes four general classifications, as shown in Figure 2. Though not specifically called out, all Millersburg streets are urban; Millersburg city limits are included in the Federal Aid Urban Boundary (FAUB).

Arterial streets are intended to move traffic, loaded from collector streets, between areas and across portions of a city or region. Arterials can be principal or minor arterials given the level of traffic served.

Collector streets gather traffic from neighborhoods but also serve abutting lands, particularly commercial uses. Major collector streets can serve higher density residential, commercial, industrial, or mixed land uses than minor collectors.

Local residential streets are intended to serve the adjacent land without carrying through traffic. To maintain low volumes, local residential streets shall be designed to encourage low-speed travel.

Private streets do not serve local traffic and are not maintained by the City.

Federal Functional Classification

Following each decennial U.S. Census, the Federal Highway Administration (FHWA) requires that the Oregon Department of Transportation (ODOT) work with local jurisdictions and metropolitan planning organizations (MPOs) to update FAUBs and corresponding Federal Functional Classifications of local roadways throughout the state.

The Federal Functional Classification system is used to identify roadways eligible for federal funds. Typically, to qualify for federal funds, a facility must be classified higher than a 'local' road on the urban and rural system.

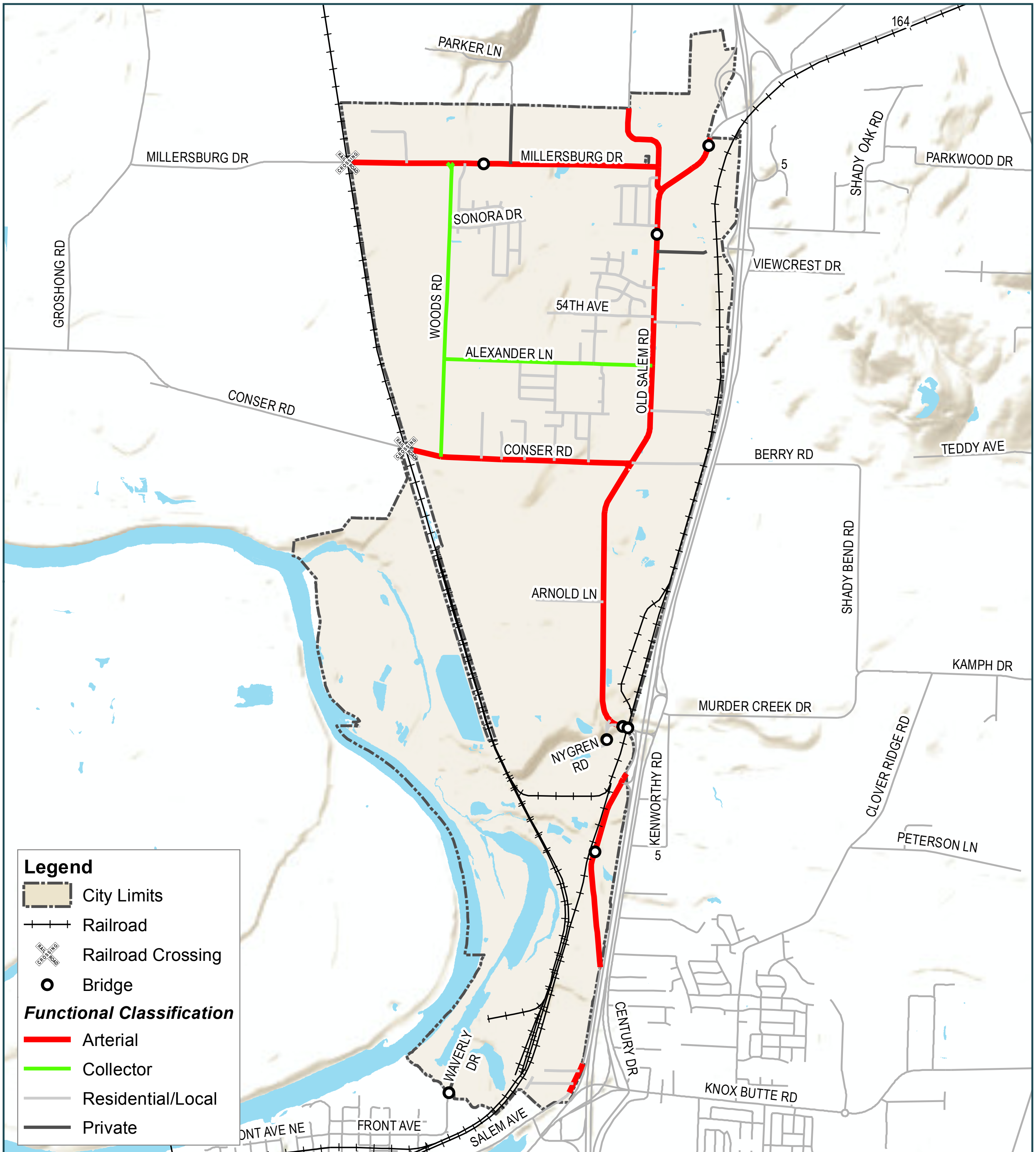
All functional classification categories exist in both urban and rural areas:

1. Principal Arterial
    a. Interstate
    b. Other Freeways & Expressways
2. Minor Arterial
3. Collector
    a. Major Collector
    b. Minor Collector
4. Local

The FAUB is the dividing line between urban and rural federal functional classifications. It includes the Urbanized Area and MPO planning area; however, consideration is also given to major traffic generators, major bus routes, interchanges, bridges and continuity of roadway classification. Millersburg city limits fall within the FAUB. The federal classifications of streets in Millersburg are minor arterials, major collectors or local streets. Table 1 provides a summary.

Table 1. Functional Classification Table (Millersburg and Federal)

Street	Functional Classification	
	Millersburg	Federal
Old Salem Rd NE	Arterial	Minor Arterial
Millersburg Dr	Arterial	Minor Arterial
Morningstar Rd NE	Arterial	Minor Arterial
Conser Rd NE	Arterial	Minor Arterial
Alexander Ln NE	Collector	Major Collector
Woods Rd NE	Collector	Major Collector



CITY OF MILLERSBURG | Transportation System Plan

Data Sources:
ESRI, ArcGIS Online, World Topography Map. 2015.
Linn County, Oregon. 2015.

Figure 2

Millersburg Functional Classification Plan

Street Cross-Sections

The traditional term "street standards" implies a focus on the requirements to serve motor vehicles but the design guidance actually addresses pedestrian, bicycle, and motor vehicle needs. The cross-sections are multimodal or "complete." When the City is upgrading existing streets and cannot obtain more right-of-way, it shall not be bound by a strict application of the cross-sections. Safety and efficiency for all modes should be the primary concern when designing the upgrade.

The City of Millersburg Land Use Development Code (LUDC) Article 5 provides guidance for development standards, which includes minimum right-of-way and roadway widths as summarized in Table 2 of this memorandum. Also included in Table 2 are suggested additional cross-section guidelines to provide added flexibility (*highlighted and* ***bold***). The City is expected to continue to follow the adopted Albany Construction Specifications (ACS) for all public construction.

Arterials

Arterial streets form the primary roadway network within and through a region. They provide a continuous roadway system that distributes traffic between different neighborhoods and districts. They provide limited access to abutting land with a greater focus on mobility and through traffic movement. Arterial streets carry the highest volumes on the City network. On-street parking is rarely provided on new arterial streets.

Figure 3 illustrates a three-lane arterial that follows the existing LUDC guidelines. The center turn lane may be replaced with a 10-foot wide raised median. Table 2 also includes a two-lane option.

Figure 3. Three-Lane Arterial, No Parking

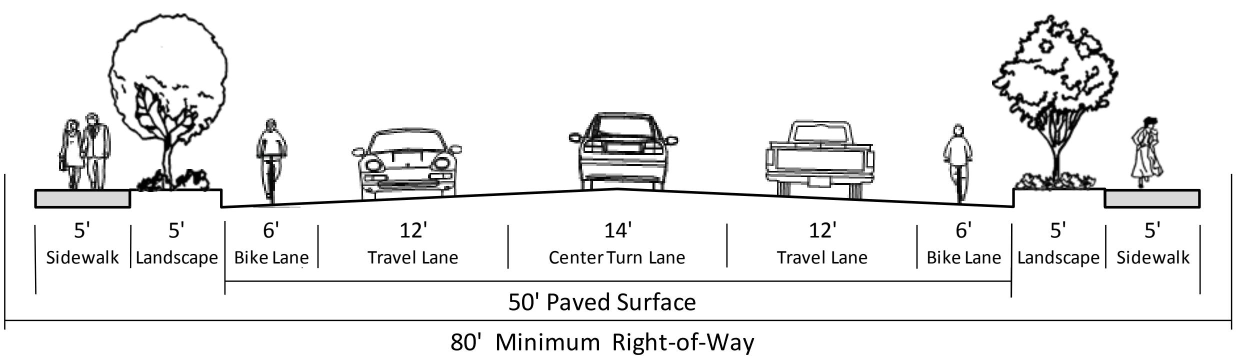


Table 2. City of Millersburg Street Design Guidelines

<table>
<tr><th rowspan="3">Functional Classification</th><th colspan="8">Design Widths</th></tr>
<tr><th rowspan="2">Right-of-Way</th><th rowspan="2">Curb-To-Curb Paving[1]</th><th colspan="4">Within Curb-To-Curb Area</th><th rowspan="2">Landscape Buffer (Both Sides)</th><th rowspan="2">Sidewalks (Both Sides)</th></tr>
<tr><th>Motor Vehicle Travel Lane</th><th>Median and/or Center Turn Lane</th><th>Bike Lane (Both Sides)</th><th>On-Street Parking</th></tr>
<tr><td colspan="9">Arterial</td></tr>
<tr><td>2 Lanes</td><td>60 ft</td><td>36 ft</td><td>12 ft</td><td>N/A</td><td>6 ft</td><td>N/A</td><td>5 ft</td><td>5 ft</td></tr>
<tr><td>2 Lanes + Center Turn</td><td>80 ft</td><td>50 ft</td><td>12 ft</td><td>14 ft</td><td>6 ft</td><td>N/A</td><td>5 ft</td><td>5 ft</td></tr>
<tr><td colspan="9">Collector – Residential</td></tr>
<tr><td>No parking</td><td>60 ft</td><td>36 ft</td><td>12 ft</td><td rowspan="3">N/A</td><td>6 ft</td><td>None</td><td>5 ft</td><td>5 ft</td></tr>
<tr><td>Parking both sides</td><td>60 ft</td><td>50 ft</td><td>12 ft</td><td>6 ft</td><td>7 ft</td><td>N/A</td><td>5 ft</td></tr>
<tr><td>Multi-Use Path[2]</td><td>60 ft</td><td>36 ft</td><td>12 ft</td><td>6 ft</td><td>N/A</td><td>4.5 ft</td><td>5 ft one side, 10 ft multiuse path one side</td></tr>
<tr><td colspan="9">Local – Residential</td></tr>
<tr><td>Parking one side</td><td>50 ft</td><td>32 ft</td><td>Unstriped</td><td rowspan="4">N/A</td><td rowspan="4">N/A</td><td>Unstriped</td><td>4 ft</td><td>5 ft</td></tr>
<tr><td>Parking both sides</td><td>50 ft</td><td>36 ft</td><td>Unstriped</td><td>Unstriped</td><td>None or 4 ft</td><td>5 ft</td></tr>
<tr><td>Skinny[3,4]</td><td>50 ft</td><td>28 ft</td><td>Unstriped</td><td>Unstriped</td><td>5-6 ft</td><td>5-6 ft</td></tr>
<tr><td>Alley[4]</td><td>20–24</td><td>18–20</td><td>N/A</td><td>N/A</td><td>N/A</td><td>optional</td></tr>
<tr><td colspan="9">Local – Industrial</td></tr>
<tr><td>Parking both sides</td><td>60 ft</td><td>40 ft</td><td>Unstriped</td><td>N/A</td><td>N/A</td><td>Unstriped</td><td>Behind[5]</td><td>5-6 ft</td></tr>
<tr><td colspan="9">Local – Commercial Service/Alley</td></tr>
<tr><td>No Parking</td><td>30 ft</td><td>20 ft</td><td>Unstriped</td><td rowspan="2">N/A</td><td rowspan="2">N/A</td><td>N/A</td><td rowspan="2">N/A</td><td rowspan="2">4 ft[6]</td></tr>
<tr><td>Parking one side</td><td>40 ft</td><td>28 ft</td><td>Unstriped</td><td>Unstriped</td></tr>
<tr><td colspan="9">Trails</td></tr>
<tr><td>Trails</td><td>10–20 ft</td><td>10–12 ft</td><td>N/A</td><td>N/A</td><td>N/A</td><td>N/A</td><td>2–7’</td><td>N/A</td></tr>
</table>

Notes:

Suggested Change/Addition to Street Guidelines

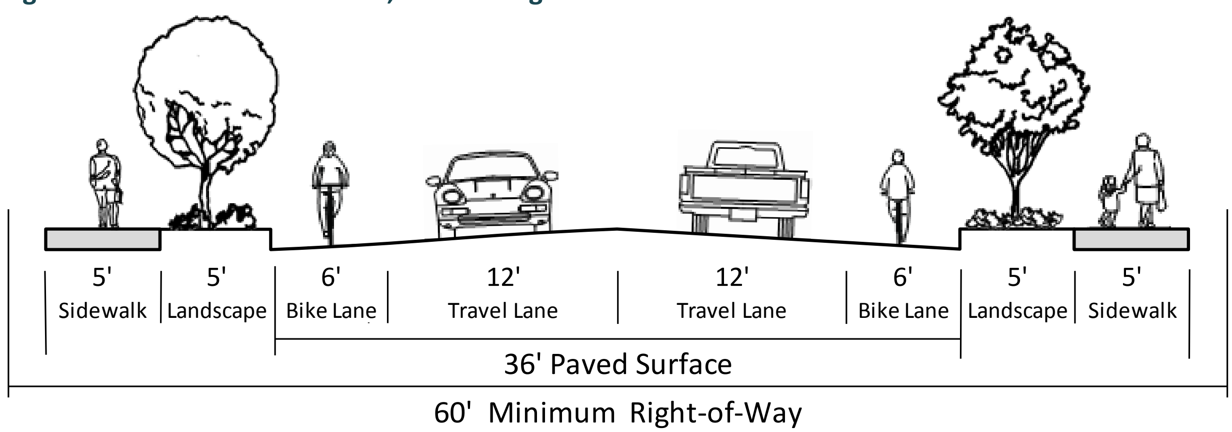
1. Curbs are generally six (6) inches wide.
2. Collector with multi-use path includes sidewalk on one side of street and path on other side of street.
3. This standard is only applicable to residential streets under certain conditions and requires Planning Commission approval for the exception.
4. Not appropriate standards for commercial streets.
5. Street trees shall be located on the outside edges of the ROW.
6. Sidewalk required on one side only.

Collector Streets

Collector streets gather traffic from and distribute traffic to the local neighborhood and arterial streets. Collector streets are primarily intended to serve abutting lands and local access needs of neighborhoods. Collector streets can serve residential, commercial, industrial, or mixed land uses. Currently, the LUDC specifies that collectors have a minimum right-of-way of 60 feet with a minimum roadway width between 36 and 50 feet. This section provides guidelines for suggested cross-sections for collectors depending on the use. These guidelines are intended to be flexible.

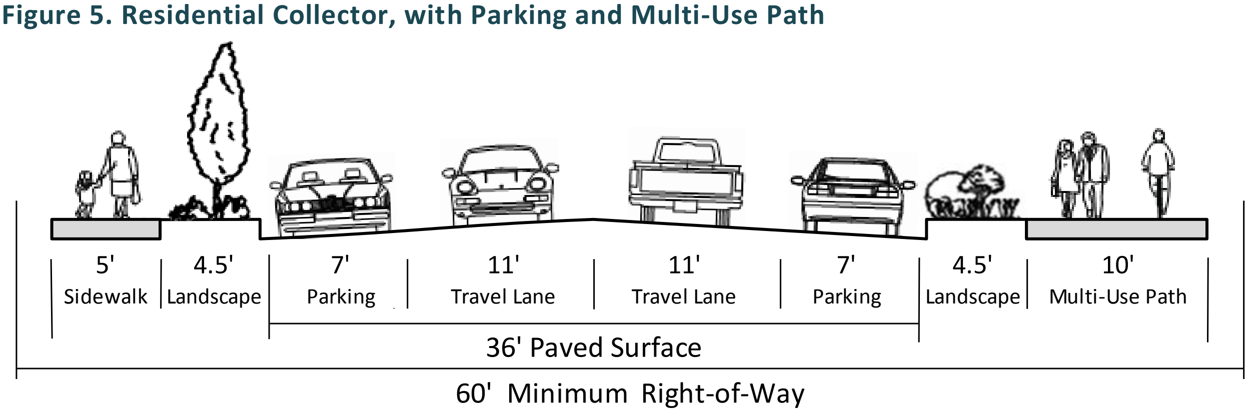
The residential collector cross-section includes two travel lanes with bike lanes and sidewalk, as illustrated below in Figure 4. An option to include on-street parking on both sides of the street has also been included (see Table 2).

Figure 4. Residential Collector, No Parking



A residential collector with a multi-use path has been identified as an option that provides an off-street bicycle facility for users who are not equipped or uncomfortable bicycling adjacent to vehicular travel lanes. This is a suggested addition to the existing cross-section guidelines.

Figure 5. Residential Collector, with Parking and Multi-Use Path



Local Streets

Local streets are intended to serve adjacent land uses with unrestricted access and almost no traffic traveling through the area. These streets serve all modes of travel and should have sidewalks to accommodate pedestrians but bicyclists share the roadway with motor vehicles because demands are low and travel speeds are slow. This memorandum recommends adjusting some of the existing local cross-section guidelines (local with parking on both sides, one side and skinny/narrow) and also adding new options (cul-de-sac and alley).

Local residential streets are narrower and generally allow on-street parking, while local industrial streets may be wider to accommodate turning trucks, as illustrated below in Figure 6 and Figure 7. It is possible that local residential cross-sections provide marked sharrows in the shared vehicle/bike travelway to enhance driver awareness to the potential presence of bicycles, but this is not part of the design guidelines.

Figure 6. Local Residential with Parking on Both Sides

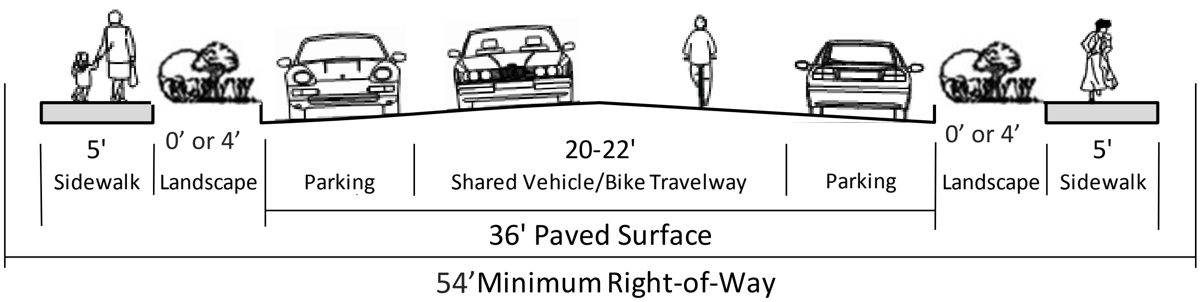
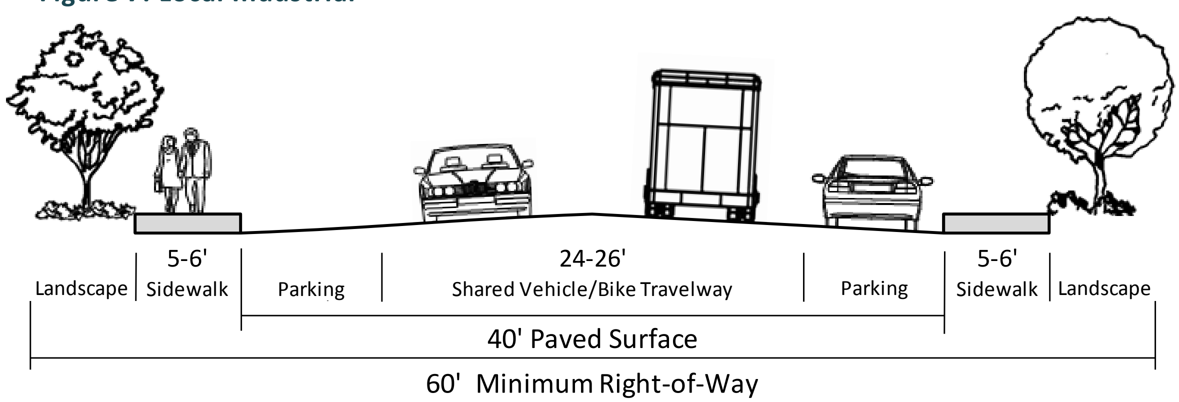


Figure 7. Local Industrial



Skinny (Narrow Street Exception)

An exception to the local residential standard may be considered by the Planning Commission under certain conditions (suggested update to LUDC Section 5.123 (5)(d):

- Distance between cross streets is no more than 600 feet.

- The street shall be adequate to serve the number of dwelling units.
- The street is a cul-de-sac not designed to provide future through-connection.
- Expected parking demand can be met off street (considering the land uses/zoning in the vicinity).
- The street is provided as an infill connecting street within an existing grid system or will be a short segment (no more than two blocks) fulfilling a similar secondary role in a proposed subdivision.

Although the City may agree that a wide street is not necessary *now*, it may become necessary in the future. For this reason, the Planning Commission may require dedication of a standard right-of-way—with reduced paving width when initially built—so the City may increase capacity when needed. The Commission may also consider requiring the provision of additional parking on a one-to-one basis to compensate for loss of on-street parking. Such parking may be located in mini-lots or some other alternative.

Cul-de-Sacs

Cul-de-sac streets are common in the newer parts of the community. Few are longer than 200 feet, although the current Land Use Development Code allows a maximum length of 600 feet[1]. Cul-de-sac streets are intended to serve only the adjacent land in residential neighborhoods. Based on recent guidance from the Department of Land Conservation and Development (DLCD) and from various urban planning organizations, it is suggested the City of Millersburg prohibit cul-de-sac streets except in special circumstances. New cul-de-sac streets should not be permitted except where topography or other natural or man-made features prohibit through connections. If a cul-de-sac is used and it is longer than 150 feet, it should be designed to provide adequate space for access and maneuverability of large and emergency vehicles.

Mobility Targets

Mobility targets help agencies maintain acceptable and reliable performance, primarily vehicular, for a transportation system. They apply to land use decisions as a way to understand how development could impact the function of the transportation system. The Transportation Planning Rule (TPR) also requires that comprehensive plan amendments and zone changes must be consistent with the adopted TSP and uses mobility targets as one tool for evaluating consistency.

The Oregon Highway Plan (OHP) has established several policies for maintaining highway mobility include Policy 1F, which establishes maximum volume-to-capacity (v/c) ratio[2] targets for peak hour operating conditions for all state highways in Oregon. The OHP policy also specifies that the v/c ratio targets be maintained for ODOT facilities through a 20-year horizon. The target for the I-5 ramps is a v/c ratio less than or equal to 0.85.

[1] City of Millersburg Land Use Development Code Section 5.123 (9)

[2] A volume-to-capacity (v/c) ratio compares traffic demand to an estimate of capacity, which is the amount of traffic that an intersection can serve during a fixed period of time. A v/c ratio less than 1.00 indicates that the volume is less than capacity. When the v/c ratio is closer to 0.00, traffic conditions are generally good with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable with longer delays

Level of service (LOS) is also a widely recognized and accepted measure and descriptor of traffic operations. At both stop-controlled and signalized intersections, LOS is a function of control delay, which includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Six standards have been established, ranging from LOS A, where there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections, or more than 80 seconds at signalized intersections.

With this TSP, the City of Millersburg is creating a mobility standard for traffic operations. A mobility target based on LOS is proposed:

- LOS D or better for signalized intersections (At the time this memorandum was written, Millersburg does not have any current or planned signalized intersections)
- LOS D or better for unsignalized intersections

Design and Analysis Guidelines

Design and analysis guidelines generally are put in place to encourage a reduction in trip length by providing connectivity and limiting out-of-direction travel. Improving roadway network connectivity can enhance accessibility for various travel modes and balance traffic levels among existing roadways and streets by better dispersing traffic. Proper implementation of certain design techniques will improve safety, reduce congestion, and potentially lessen the need to invest in capacity-adding roadway projects.

Local Street Connectivity

Much of the local street network in Millersburg is centralized and fairly well connected in a grid network. However, several physical and natural barriers exist such as rivers, railroad tracks and wetlands. Collector streets shall be located wherever necessary to relieve congestion on local streets or residential collectors. In general, collectors should be spaced ¼ mile apart.

Roadway and Access Spacing

Access management is an important key to balanced urban growth. As evidence, the lack of a prudent access management plan has led to miles of strip commercial development along the arterial streets of many urban areas. Business activities along arterial streets lead to increased traffic demands and the provision of roadway improvements to accommodate the increasing traffic demand. Roadway improvements stimulate more business activity and traffic demands. This often continues in a cyclical fashion, and requires extensive capital investments for roadway improvements and relocation. However, with the tightening of budgets by federal, state, and local governments, the financial resources to pay for such solutions are becoming increasingly scarce.

Reducing capital expenditures is not the only argument for access management. Additional driveways along arterial streets lead to an increased number of potential conflict points among vehicles entering and exiting the driveways, and through vehicles on the arterial streets. This leads to increased vehicle delay and deterioration in the level of service on the arterial. Increases in volumes and conflict points may also lead to a reduction in safety. Thus, it is essential that all levels of government try to maintain the efficiency of existing streets through better access management.

LUDC Section 5.122 (5) suggests intersection and driveway spacing be regulated by the City. Table 3 describes recommended access management guidelines by roadway functional classification for all categories of city streets in Millersburg.

Table 3. Access Management Guidelines

Functional Classification	Posted Speed	Minimum Spacing between Driveways[1,2]	Minimum Spacing between Intersections[1,2]
State Managed Arterial	35-45 mph	ODOT Standard	ODOT Standard
Arterial	35-45 mph	300 feet	600 feet
Collector	25-30 mph	50 feet	300 feet
Local Residential	25 mph	Access to each lot permitted	125 feet
Local Industrial	25 mph	Access to each lot permitted	300 feet

Notes:
1. Desirable design spacing; existing spacing will vary. Each parcel is permitted one driveway regardless of the minimum driveway spacing standard although shared access is encouraged.
2. Spacing standards are measured centerline to centerline.

Enhanced Pedestrian Crossing Treatment Guidelines

Enhanced pedestrian street crossings not only provide safety benefits for pedestrians, but also encourage the use of bicycle and pedestrian facilities. Generally, enhanced pedestrian crossings are installed in areas with nearby transit stops, residential uses, schools, parks, and other community destinations. Table 4 provides a summary of pedestrian crossing treatments.

Table 4. Enhanced Pedestrian Crossing Treatment Options

Crossing Type	Description
Marked Crosswalk	Striping patterns and advance markings/signage
Neckdowns & Bulbouts	Raised curb extensions that reduce the roadway width from curb to curb at midblock (neckdowns) or intersections (bulbouts)
Median Refuge Island	Center island on a wider street that provides a pedestrian refuge area
Rectangular Rapid Flash Beacons (RRFB)	User-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system.
High intensity Activated crossWalK (HAWK)	Pedestrian-activated warning device located on the roadside or on mast arms over midblock pedestrian crossings. The beacon head consists of two red lenses above a single yellow lens. The beacon head is "dark" until the pedestrian desires to cross the street.
Grade-Separated Pedestrian Crossing	Grade-separated pedestrian crossings, such as an overpass or an underpass, may be used in situations where there is pedestrian demand in high speed environments

Mid-block pedestrian and bicycle access ways should be provided at spacing no more than 330 feet, unless the connection is impractical due to inadequate sight distance, high vehicle travel speeds (Old Salem Road), or other factors that may prevent the crossing (as determined by the City).

Neighborhood Traffic Management Tools

Although a large portion of Millersburg is designated as industrial, the rest is residential and most of its roadway network serves local residents. In order to preserve the character of the residential neighborhoods, some traffic management tools may be used. These tools are sometimes referred to as traffic calming measures and are used to address speeding and cut-through traffic on local residential streets. Generally these would be installed on roadways with at least two accesses, at the request of residents, and supported by a large majority of members of the community. Examples of common neighborhood traffic management tools and their most effective application are listed in Table 5.

Table 5. Neighborhood Traffic Management Toolkit

Measure	Description	Application
Sharrows	A roadway marking that indicates a vehicular and bicycle shared-use facility (typically a bike with two arrows, painted on the asphalt)	Speeding, bicycle comfort and safety
Targeted Police Enforcement	Law enforcement at specific streets or neighborhoods for a period of time to conduct radar speed enforcement and enforcement of traffic laws	Speeding, bicycle and pedestrian safety
Radar Speed Trailer	Mobile radar units placed on the side of the road to display speed back to an approaching driver	Speeding, bicycle and pedestrian safety
Speed Limit Signage	Regulatory Speed Limit signs are installed along streets to remind drivers of the legal speed limit	Speeding, bicycle and pedestrian safety
High Visibility Crosswalks	Striping patterns, advance markings, raised pavement markers, enhanced signage, activated flashing beacons, and/or activated in-pavement lights improve the visibility of the crossing	Crash history, bicycle and pedestrian safety
Education & Community Involvement	Presentations at neighborhood meetings, local workshops, school programs, yard signs, neighborhood flyers or letters about traffic laws	Public outreach, general transportation safety concerns, changes to existing system
Neckdowns & Bulbouts	Raised curb extensions that reduce the roadway width from curb to curb at midblock (neckdowns) or intersections (bulbouts)	Speeding, bicycle and pedestrian safety
Lane Narrowing	Construction of a center island on a wider street to reduce the width of the travel lanes and to provide a pedestrian refuge area	Pedestrian safety
Landscaping	Adding plants, trees, or other vegetation to the roadside and/or medians	Aesthetic, bicycle and pedestrian comfort and safety
Traffic Circle	Traffic circles are raised islands, placed in intersections, around which traffic circulates	Speeding, crash history, aesthetic
Speed Hump	Raised pavement placed across the entire roadway width to slow vehicles	Speeding, cut-through traffic, bicycle and pedestrian safety
Raised Crosswalk	Raises the crosswalk to the level of the sidewalk to improve the visibility of pedestrians to motor vehicle drivers	Speeding, cut-through traffic, bicycle and pedestrian safety

Notes:
Any traffic calming project should include coordination with emergency agency staff to ensure public safety is not compromised

Intelligent Transportation System (ITS) Coordination Guidelines

ITS is not likely to be needed as part of the local street system in Millersburg, however it currently is a part of the interstate system bordering the community. The City, Linn County and ODOT should coordinate locations of potential fiber lines or other communications systems and coordinate potential cost saving measures, such as laying conduit for a future fiber network as part of a lighting project.

Traffic Impact Analysis (TIA) Requirements

A TIA studies the impacts of a land use action or proposed development on the existing transportation system and identifies potential mitigation. If an entity approaches the City with plans for a new development, the City or other road authority with jurisdiction may require a TIA be completed as part of the application for development. A TIA may also be required if there is a change in use, or a change in access.

> Per LUDC Section 5.122 (5)(f):
>
> All new commercial or industrial uses, multi-family residential uses, subdivisions, and manufactured dwelling parks, including expansion of existing uses shall submit for City approval a Traffic Assessment, which shall include the following:
>
> 1. Location of access points;
> 2. Estimates of the amount of traffic that will utilize the above access points;
> 3. Effect that the proposed development will have on traffic movement of both vehicles and pedestrians.
> 4. The identification of all improvements that will be required to maintain adequate traffic flow.
> 5. Access approval by the Linn County Road Department.
> 6. Additional details or a Traffic Impact Study, may be required by the City if impacts warrant.

The Millersburg LUDC should be updated to reflect the mobility targets recommended in this TSP.

J. Technical Memorandum #10: Implementing Ordinances

City of Millersburg Transportation System Plan

Technical Memorandum #10
(Task 6.3 Implementing Ordinances)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

September 2016

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Purpose

The Oregon Transportation Planning Rule (TPR) (Oregon Administrative Rule 660, Division 12,) requires cities and counties to prepare, adopt, and amend local Transportation System Plans "consistent with regional TSPs and adopted elements of the state TSP." It also requires that "each local government shall amend its land use regulations to implement the TSP" and make findings of compliance. This memorandum provides draft proposed amendments to the City of Millersburg Comprehensive Plan (January 1984; amended 2001) and the Land Use Development Code (LUDC—November 14, 2006; amended April 10, 2012) to implement the proposed policies and standards in the Millersburg TSP. The proposed amendments will be reviewed and considered for adoption in conjunction with the updated Millersburg Transportation System Plan (TSP). The amendments are needed to comply with the state transportation planning regulations and ensure consistency between the TSP and the Comprehensive Plan and LUDC. In addition to compliance and consistency, the proposed amendments are intended to protect the intended function of the transportation facilities and corridors, encourage alternate modes (transit, bicycling and walking).

This technical memorandum follows up on the regulatory gaps in compliance between the Comprehensive Plan and LUDC with the Oregon Transportation Plan (OTP-amended September 20, 2006) and the TPR, which are identified in Technical Memorandum #3: Regulatory Review.

Oregon Transportation Plan (OTP)

The Oregon Transportation Plan (OTP) is the state's multimodal transportation plan that assesses the needs through 2030. It is an element of the OTP. The OTP provides a framework for prioritizing transportation improvements to emphasize maintaining the assets in place, optimizing the existing system performance, creating sustainable funding, and investing in strategic capacity enhancements.

The OHP establishes policies and investment strategies for Oregon's state highway system over a 20-year period and refines the goals and policies found in the OTP. These policies link land use and transportation, set standards for highway performance and access management, and emphasize the relationship between state highways and the local road, bicycle, pedestrian, transit, rail, and air systems. The OHP identifies OR 164 - Jefferson Highway, which intersects Interstate 5 (I-5) at Exit 238 at the north end of Millersburg and travels east to Jefferson, as a designated District Highway.

The TSP is consistent with the pertinent OTP and OHP goals and policies, listed below, by integrating consideration of multimodal mobility and accessibility, efficiency, freight operations, safety, and economic and environmental sustainability into all of the TSP's goals, policies, and objectives.

Oregon Transportation Plan

Goal 1 – Mobility and Accessibility

- Policy 1.1 – Development of an Integrated Multimodal System.
- Policy 1.3 – Relationship of Interurban and Urban Mobility.

Goal 2 – Management of the System

- Policy 2.1 - Capacity and Operational Efficiency.
- Policy 2.2 - Management of Assets.

Goal 3 – Economic Vitality
- Policy 3.1 – An Integrated and Efficient Freight System.
- Policy 3.2 – Moving People to Support Economic Vitality.

Goal 4 – Sustainability
- Policy 4.1 – Environmentally Responsible Transportation System.
- Policy 4.3 – Creating Communities.

Goal 5 – Safety and Security
- Policy 5.1 – Safety and Security.
- Policy 5.2 – Security.

Goal 7 – Coordination, Communication and Cooperation.
- Policy 7.1 - A Coordinated Transportation System.
- Policy 7.3 – Public Involvement and Consultation.
- Policy 7.4 – Environmental Justice.

Oregon Highway Plan

Goal 1 – System Definition
- Policy 1A – State Highway Classification System
- Policy 1B – Land Use and Transportation
- Policy 1C – State Highway Freight System
- Police 1E – Lifeline Routes
- Policy 1F – Highway Mobility Standards
- Policy 1G – Major Improvements

Goal 2 – System Management
- Policy 2A – Partnerships.
- Policy 2B – Off-System Improvements.
- Policy 2C– Interjurisdictional Transfers
- Policy 2D– Public Involvement
- Policy 2E – Intelligent Transportation Systems
- Policy 2F – Traffic Safety
- Policy 2G – Rail and Highway Compatibility

Goal 3 – Access Management
- Policy 3A – Classification and Spacing Standards
- Policy 3C – Interchange Access Management Areas

Goal 4 – Travel Alternatives
- Policy 4A – Efficiency of Freight Movement
- Policy 4D – Transportation Demand Management

Mobility targets apply to land use decisions as a way to understand how development could impact the function of the transportation system. The Oregon Highway Plan (OHP) has established several policies for maintaining highway mobility including Policy 1F, which establishes maximum volume-to-capacity (v/c) ratio[1] targets for peak hour operating conditions for all state highways in Oregon. The OHP policy

[1] A volume-to-capacity (v/c) ratio compares traffic demand to an estimate of capacity, which is the amount of traffic that an intersection can serve during a fixed period of time. A v/c ratio less than 1.00 indicates that the volume is less than capacity. When the v/c ratio is closer to 0.00, traffic conditions are generally good with little congestion and low delays for most intersection movements. As the v/c ratio approaches 1.00, traffic becomes more congested and unstable with longer delays

also specifies that the v/c ratio targets be maintained for ODOT facilities through a 20-year horizon. The target for the I-5 ramps is a v/c ratio less than or equal to 0.85.

The TSP is consistent with the OHP mobility standards by establishing the following mobility targets based on LOS[2]:

- LOS D or better for signalized intersections (At the time this memorandum was written, Millersburg does not have any current or planned signalized intersections)
- LOS D or better for unsignalized intersections

Oregon Transportation Plan (OTP)

One-third of Oregon's total greenhouse gas (GHG) emissions are from vehicle exhaust. In 2007, the Oregon Legislature adopted House Bill 3507 establishing a statewide goal to reduce greenhouse gas emissions to 10 percent below 1990 levels by 2020 and to 75 percent below 1990 levels by 2050. The Legislature passed House Bill 2001 (2009) and Senate Bill 1059 (2010) to help meet these state GHG reduction goals, by establishing the Oregon Sustainable Transportation Initiative (OSTI) and directing the preparation of the Oregon Statewide Transportation Strategy: A 2050 vision for Greenhouse Gas Emissions Reduction (STS—March 20, 2013). The STS contains 18 strategies in six categories. The strategies relevant to the Millersburg TSP are:

Enhanced System and Operations Performance – Strategies in this category improve the efficiency of the transportation system and operations through technology, infrastructure investment, and operations management.

> Strategy 3 – Operations and Technology: Enhance fuel efficiency and system investments, and reduce emissions by fully optimizing the transportation system through operations and technology.
>
> Strategy 6 – Road System Growth: Design road expansions to be consistent with the objectives for reducing future GHG emissions by light duty vehicles.

Transportation Options – Strategies in this category increase opportunities for travelers and shippers to use transportation modes that are more energy efficient and produce fewer emissions.

> Strategy 7 – Transportation Demand Management: Support and implement technologies and programs that manage demand and make it easier for people to choose transportation options.
>
> Strategy 10 – Bicycle and Pedestrian Network Growth: Encourage local trips, totaling twenty miles or less round-trip, to shift from single-occupant vehicle (SOV) to bicycling, walking, or other zeroemission modes.

The TSP implements these strategies by identifying specific TDM strategies, multimodal street, bicycle, pedestrian, and transit system improvements for the City of Millersburg.

[2] Six level of service (LOS) standards have been established ranging from LOS A where there is little or no delay, to LOS F, where there is delay of more than 50 seconds at unsignalized intersections, or more than 80 seconds at signalized intersections.

ODOT developed the STS Short-Term Implementation Plan (February 2014) to implement the strategies in the STS. The seven programs in the Plan are intended for ODOT and MPO action, including Program #4: Strategic Assessments and Scenario Planning. ODOT and DLCD produced Scenario Planning Guidelines: Resources for Developing and Evaluating Alternative Land Use and Transportation Scenarios (April 2013). Although the Millersburg TSP development process did not use the Guidelines, the Solutions Evaluation chapter of the TSP used scenario-type planning to evaluate improvement strategies, priorities, and funding.

Transportation Planning Rule (TPR)

The TPR (OAR 660-012) implements Oregon's Statewide Planning Goal 12 (Transportation) and promotes the development of safe, convenient, and economic transportation systems that reduce reliance on automobile travel. TPR compliance issues include access management, protection of transportation facilities, support of multi-modal transportation, and agency coordination. Table 3 lists each TPR section and indicates which TSP component addresses it.

Table 1. Compliance with TPR Sections

TPR Section #	TPR Section Title	TSP Compliance
660-012-0000	Purpose	Incorporated throughout the TSP preparation process
660-012-0005	Definitions	Incorporated throughout the TSP preparation process
660-012-0010	Transportation Planning	Incorporated throughout the TSP preparation process
660-012-0015	Preparation and Coordination of Transportation System Plans	Incorporated throughout the TSP preparation process
660-012-0016	Coordination with Federally Required Regional Transportation Plans in Metropolitan Areas	Incorporated throughout the TSP preparation process
660-012-0020	Elements of Transportation System Plans	Incorporated throughout the TSP preparation process
660-012-0025	Complying with the Goals in Preparing Transportation System Plans; Refinement Plans	Plan Review Summary appendix and the Regulatory Review chapter
660-012-0030	Determination of Transportation Needs	Future Baseline Conditions and Needs chapter
660-012-0035	Evaluation and Selection of Transportation System Alternatives	Solutions Evaluation chapter
660-012-0040	Transportation Financing Program	Finance Program chapter
660-012-0045	Implementation of the Transportation System Plan	Included in this technical memorandum
660-012-0050	Transportation Project Development	Solutions Evaluation chapter
660-012-0055	Timing of Adoption and Update of Transportation System Plans; Exemptions	Incorporated throughout the TSP preparation process
660-012-0060	Plan and Land Use Regulation Amendments	Included in this technical memorandum
660-012-0065	Transportation Improvements on Rural Lands	N/A, City of Millersburg is incorporated
660-012-0070	Exceptions for Transportation Improvements on Rural Land	N/A, City of Millersburg is incorporated

This technical memorandum specifically addresses Section 660-012-0045, Implementation of the Transportation System Plan, and Section 660-012-0060, Plan and Land Use Regulation Amendments. Table 2 lists the provisions in these two sections and identifies either that the current adopted City of Millersburg regulations are in compliance, or which amendments are needed.

Table 2. Millersburg LUDC compliance with TPR Sections 660-012-0045 and -0060

Transportation Planning Rule 660-012-0045 Implementation of the Transportation System Plan	LUDC
(1) Each local government shall amend its land use regulations to implement the TSP. (a) The following transportation facilities, services and improvements need not be subject to land use regulations except as necessary to implement the TSP and, under ordinary circumstances do not have a significant impact on land use: (A) Operation, maintenance, and repair of existing transportation facilities identified in the TSP, such as road, bicycle, pedestrian, port, airport and rail facilities, and major regional pipelines and terminals; (B) Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards;	Added to permitted uses in each zoning district in Article 4, Zoning Districts.
(C) Uses permitted outright under ORS 215.213(1)(j)–(m) and 215.283(1)(h)–(k), consistent with the provisions of OAR 660-012-0065; and	These pertain to county rural farm land and therefore are not applicable.
(D) Changes in the frequency of transit, rail and airport services.	There are no public transit, rail, or airport services and therefore are not applicable.
(b) To the extent, if any, that a transportation facility, service or improvement concerns the application of a comprehensive plan provision or land use regulation, it may be allowed without further land use review if it is permitted outright or if it is subject to standards that do not require interpretation or the exercise of factual, policy or legal judgment;	Added to permitted uses in each zoning district in Article 4, Zoning Districts.
(c) In the event that a transportation facility, service or improvement is determined to have a significant impact on land use or to concern the application of a comprehensive plan or land use regulation and to be subject to standards that require interpretation or the exercise of factual, policy or legal judgment, the local government shall provide a review and approval process that is consistent with OAR 660-012-0050. To facilitate implementation of the TSP, each local government shall amend its land use regulations to provide for consolidated review of land use decisions required to permit a transportation project.	Section 5.122, Transportation Standards, addresses OAR 660-012-0050, which governs transportation project development. Two provisions are amended to clarify that transportation project development must be done in accordance with the TSP.

Transportation Planning Rule 660-012-0045 Implementation of the Transportation System Plan	LUDC
(2) Local governments shall adopt land use or subdivision ordinance regulations, consistent with applicable federal and state requirements, to protect transportation facilities, corridors and sites for their identified functions. Such regulations shall include: (a) Access control measures, for example, driveway and public road spacing, median control and signal spacing standards, which are consistent with the functional classification of roads and consistent with limiting development on rural lands to rural uses and densities;	Section 5.122, Transportation Standards includes access control. Recommend amendments to access spacing and access management to bring the LUDC Section 5.122 (5), Transportation Standards, Access Management into full compliance with the TPR.
(b) Standards to protect future operation of roads, transitways and major transit corridors;	New standards in the TSP and Section 5.122 and 5.123 meet this requirement.
(c) Measures to protect public use airports by controlling land uses within airport noise corridors and imaginary surfaces, and by limiting physical hazards to air navigation;	There is no public use airport and therefore this is not applicable.
(d) A process for coordinated review of future land use decisions affecting transportation facilities, corridors or sites;	Added notification to Article 3, Decision Process, Section 3.300 Notification.
(e) A process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities, corridors or sites;	Existing conditions of approval provisions are adequate.
(f) Regulations to provide notice to public agencies providing transportation facilities and services, MPOs, and ODOT of: (A) Land use applications that require public hearings; (B) Subdivision and partition applications; (C) Other applications which affect private access to roads; and (D) Other applications within airport noise corridors and imaginary surfaces which affect airport operations; and	Added notification to Article 3, Decision Process, Section 3.300 Notification.
(g) Regulations assuring that amendments to land use designations, densities, and design standards are consistent with the functions, capacities and performance standards of facilities identified in the TSP.	Text is added to Section 2.700, Amendments, (2) Decision Criteria, to address the potential effects of land use regulation amendments on transportation facilities.
(3) Local governments shall adopt land use or subdivision regulations for urban areas…. (a) Bicycle parking facilities as part of new multi-family residential developments of four units or more, new retail, office and institutional developments, and all transit transfer stations and park-and-ride lots;	Existing standards in Section 5.125 (4) Bicycle Parking, comply.
(b) On-site facilities shall be provided which accommodate safe and convenient pedestrian and bicycle access from within new subdivisions, multi-family developments, planned developments, shopping centers, and commercial districts…	Existing subdivision standards in Section 2.320-2.330 and Article 5, Development Standards, comply.
(4) To support transit in urban areas containing a population greater than 25,000, where the area is already served by a public transit system or where a determination has been made that a public transit system is feasible…	The population of Millersburg is under 25,000 and there is no public transit and therefore this is not applicable.

Transportation Planning Rule 660-012-0045 Implementation of the Transportation System Plan	LUDC
(5) In MPO areas, local governments shall adopt land use and subdivision regulations to reduce reliance on the automobile which: (a) Allow transit-oriented developments (TODs) on lands along transit routes…	There are no transit routes within the City of Millersburg. Although this is not directly applicable to the Millersburg TSP, the AAMPO regional transportation plan will address transit in the region.
(b) Implements a demand management program to meet the measurable standards set in the TSP in response to OAR 660-012-0035(4) …	The Solutions Evaluation chapter of the TSP contains TDM.
(c) Implements a parking plan which… (d) As an alternative to (c) above…	Existing LUDC parking standards comply.
(e) Require all major industrial, institutional, retail and office developments to provide either a transit stop on site or connection to a transit stop along a transit trunk route when the transit operator requires such an improvement.	There are no transit routes and therefore this is not applicable.
(6) In developing a bicycle and pedestrian circulation plan as required by OAR 660-012-0020(2)(d), local governments shall identify improvements to facilitate bicycle and pedestrian trips to meet local travel needs in developed areas….	The Solutions Evaluation chapter of the TSP contains multimodal, bicycle system, shared use path & trail, and pedestrian system circulation plans.
(7) Local governments shall establish standards for local streets and accessways that minimize pavement width and total right-of-way consistent with the operational needs of the facility….	The Transportation Standards chapter of the TSP contains standards.

City of Millersburg Comprehensive Plan (2001)

The TSP will replace the Transportation Element (Section 9.700) of the Comprehensive Plan. The original Transportation Element inventoried existing conditions and future needs. It provided two overall goals and policies for each mode: streets and highways, mass transit, bicycle and pedestrian ways, railroad, and air. The TSP contains goals, policies, and objectives that cover all modes, although they are not categorized by mode. The TSP, in addition to updating existing conditions and future baseline needs, also presents financing and standards for facilities.

The TSP includes an inventory of pipelines and also will replace the Pipeline Element. The Land Use and Urbanization elements contain outdated acreage of roadways within the City of Millersburg and the UGA (Table 5A: Existing Land Use 1980). However, since the acreage of the other land use types are also outdated as well and will not be updated at this time, the roadway acreage does not need to be amended. No other amendments to the comprehensive plan are proposed other than replacing the Transportation and Pipeline elements.

City of Millersburg Land Use Development Code (2012)

Recommended changes to the LUDC are based on a review of consistency with the TPR. Proposed amendment language is based, in part, on the Oregon Transportation Growth Management Model Development Code & User's Guide for Small Cities, Edition 3.1, Volume I – User's Guide ("Model Code—

November 2015). ODOT updated the Model Code in November 2015, after the last modification to OAR 660-012-0045 (August 2014) and OAR 660-012-0060 (January 2012).

Article 1 contains general provisions that are not directly relevant to transportation, including authority, interpretations, and enforcement. It also contains definitions. Several definitions need to be added and modified I order to be consistent with proposed amendments to other articles. Definitions are from the Model Code, Section 5.1.030, except “transportation facilities” and “transportation improvements.” The definitions for “access,” “access way,” and “easement” are sufficiently consistent that they do not need to be changed.

Article 2 amendments pertain to adding references to the new traffic impact study section, exempting public improvements from site plan review, and incorporating TPR 660-012-0060 regarding plan and zoning amendments.

Article 3 amendments are to add notification to ODOT and AAMPO.

The principal change **Article 4**, Zoning Districts, is to add transportation facilities and improvements as a use allowed outright, thus streamlining the permitting process, as required by the TPR.

The standards in **Article 5** need to be amended in order to be consistent with the proposed TSP standards. Article 5 contains the traffic impact analysis standards, procedures, and criteria, that also need to be amended.

A table with access spacing standards is proposed to be added to the access management section of Section 5.122, Transportation Standards. The proposed table includes recommended access management guidelines by roadway functional classification for all categories of city streets.

The Transportation Guidelines chapter of the TSP provides recommended street standards. As shown below, the table in LUDC Section 5.123 (4) should be replaced with the street design guidelines table in the Transportation Guidelines chapter. The proposed standards emphasize multimodal or “complete streets” that maximize safety and efficiency for all modes over a strict application of the cross-sections. The City is expected to continue to follow the adopted Albany Construction Specifications (ACS) for all public construction.

Article 6, Article 7, and Article 8 do not need amendments.

Text is presented in adoption-ready format; the draft amendments are numbered consistent within the structure of the Millersburg LUDC. New language that is proposed to be added is double underlined and proposed deletions are ~~struck through~~. In some cases, adopting proposed new text may require re-numbering or re-lettering of subsequent LUDC subsections.

ARTICLE 1 ADMINISTRATIVE PROVISIONS

SECTION 1.140 ASSOCIATED REGULATIONS

In addition to the regulations contained herein, the following additional regulations may apply to proposed developments within the City of Millersburg:

(1) The Millersburg Comprehensive Plan, including the Transportation System Plan.

Section 1.200 DEFINITIONS

ACCESS (definition as-is)

(a) **Alternate** The right to access a property by means other than the proposed approach or access connection. It may include an existing public right-of-way, another location on the subject street or highway, an easement across adjoining property, a different street, a service road, a local road, or an alley, and may be in the form of a single or joint approach.

(b) **Control** Where the right of access between a property abutting the highway and the highway has been acquired by a roadway authority, or eliminated by law, pursuant to access or approach spacing standards.

(c) **Easement** An easement conveyed for the purposed of providing vehicle, bicycle, and/or pedestrian access from a public street to a lot or parcel across intervening property under separate ownership from the parcel being provided access. **Cross access easement** is an easement providing vehicular access between two or more separate sites, so that the driver need not enter the public street system between sites.

(d) **Management** The systematic control of the location, spacing, design, and operation of driveways, median openings interchanges, and street connections to a roadway to minimize conflicts between turning and through vehicles, bicyclists, and pedestrians. The purpose of access management is to provide vehicular access to land development in a manner that preserves the safety and efficiency of the transportation system. Public facility measures to support access management include roadway design applications, such as median treatments and auxiliary lanes, and the appropriate spacing of traffic signals. Measures that may be included as conditions of approval for development decisions include, but are not limited to, 1) standards such as minimum spacing of driveways and onsite vehicle storage requirements; 2) mitigations related to site conditions such as right-in-right-out only approaches, medians, dedicated turn lanes, and shared driveways; and 3) provision for future opportunities for mitigation by land dedication or easement.

(e) **Management Plan** A plan adopted by the City, or jointly by the Oregon Transportation Commission (OTC) in coordination with the City, for managing access on a designated section of an arterial street or highway*[, or within the influence area of a highway interchange.]*

(f) **Point** A connection providing for the movement of vehicles between a lot or parcel and a public roadway.

(g) **Reasonable** Access that does not require excessive out-of-direction travel or pose a safety hazard.

(h) **Spacing / Intersection Spacing** The minimum required distance from an intersection of a public or private street to the nearest driveway or other access connection, measured from the closest edge of the pavement of the intersecting street to the closest edge of the pavement of the connection along the traveled way.

(i) **Way** A walkway or multi-use path connecting two rights-of-way to one another where no vehicle connection is made.

~~**ACCESS MANAGEMENT** Regulation of access to streets, roads, and highways from abutting property and public and private roads and driveways.~~

ADJACENT Abutting or located directly across a street right-of-way or easement.

BIKEWAY The general term for the four basic types of bikeways:
(d) **Multi-Use Paths** are separated from vehicular traffic. They are two-way pathways about 10 to 12 feet wide used by pedestrians, bicyclists and joggers.

CAPACITY Maximum holding or service ability, as used for transportation, utilities, parks, and other public facilities. See also, definition of "Occupancy" in applicable building codes.

CHANGE OF USE Change in the primary type of use on a site.

DEDICATION The designation of land by its owner for any public use as shown on a subdivision plat or deed. The term may also be used for dedications to a private homeowners' association.

DISCRETIONARY A permit action or decision that involves substantial judgment or discretion.

DRIVEWAY The area that provides vehicular access to a site from a street, or the area that provides vehicular circulation on a site.

(a) **Apron** The edge of a driveway where it meets a public right-of-way. Note: The design standards of the applicable roadway authority apply.

(b) **Approach** A driveway connection to a public street or highway where it meets a public right-of-way. Note: The design standards of the applicable roadway authority apply. See also, Oregon Administrative Rules 734, Division 51, for definitions specific to state highways.

(c) **Shared** When land uses on two or more lots or parcels share one driveway. An easement or tract (owned in common) must be created and recorded for this purpose.

INTERSECTION An at-grade connection of a public or private approach road to the highway.

LAND USE The activity or activities that occur on a piece of land. Activities may be individually identified as primary or accessory uses.

LAND USE DECISION A final decision or determination made by the City of *[name]* (or other agency with jurisdiction) that concerns the adoption, amendment, or application of the Statewide Planning Goals, the Comprehensive Plan, or any land use regulation (i.e., this Code) where the decision requires the interpretation or exercise of policy or legal judgment (ORS 197.015). Note: All decisions requiring Quasi-Judicial review by the City of *[name]* are Land Use Decisions. Decisions subject to Administrative review are considered Limited Land Use Decisions, pursuant to ORS 197.015.

LEVEL OF SERVICE ("LOS") A quantitative standard for transportation facilities describing operational conditions. See City of *[name]* Transportation System Plan.

PATHWAY A walkway, bikeway, or access way conforming to City standards and separated from the street right-of-way, that may or may not be within a public right-of-way.

PLANNED ROAD OR STREET A highway, road, street, or alley identified in an adopted corridor plan, comprehensive plan or transportation system plan in accordance with administrative procedures of OAR 660-012 and ORS Chapter 197, but that has not been constructed.

PLANTER STRIP A landscape area for street trees and other plantings within the public right-of-way, usually a continuous planter area between the street and a sidewalk.

POSTED SPEED The statutory speed established by ORS 811.105 or ORS 811.180, or the designated speed established by ORS 810.180.

PUBLIC ACCESS EASEMENT A public access easement is an easement granted to the public for vehicular and pedestrian access, or for non-motorized access.

PUBLIC IMPROVEMENTS Development of public infrastructure, as required by the City, a special district, or road authority, as applicable. See Chapter 3.6.

RIGHT-OF-WAY ~~A continuous strip of land between property lines allowing a right of passage usually containing a street, railroad or other passageway and utilities.~~ Real property or an interest in real property owned by a roadway authority for the purpose of constructing, operating, and maintaining public facilities.

ROADWAY ~~The portion of a street right-of-way developed for vehicular traffic.~~ The portion of a right-of-way that is improved for motor vehicle and bicycle travel, subject to applicable state motor vehicle licensing requirements. Roadway includes vehicle travel lanes and on-street parking areas. Roadway does not include area devoted to curbs, parking strips, or sidewalks.

ROAD/ROADWAY AUTHORITY The City or other agency (e. g., Oregon Department of Transportation, City of *[name]*, or *[name]* County) with jurisdiction over a road or street.

SHARED DRIVEWAY A driveway used to access two or more parcels.

SHARED PARKING Required parking facilities for two or more uses, structures, or lots or parcels, which are satisfied jointly with the same facilities. See Chapter 3.5.

SIDEWALK A paved walkway within a public street right-of-way that is generally located adjacent to and separated from the roadway by a curb*[, drainage facility (e.g., ditch or swale),]* or planter strip.

SPACING STANDARDS The minimum distance required between a proposed street or driveway connection, as applicable, and the center of the nearest existing street or driveway connection on the same side of the highway in both directions, as set forth by the standards of the applicable roadway authority. Spacing standards for state highways are contained in OAR 734-051-4020.

STREET OR ROAD ~~A public or private way that is created to provide ingress or egress for persons to one or more lots, parcels, areas or tracts of land and including the term "road," "highway," "lane," "drive" "avenue," "alley" or similar designations~~. A right-of-way that is intended for motor vehicle, pedestrian, or bicycle travel; or for motor vehicle, bicycle, or pedestrian access to abutting property. For the purposes of this Code, street does not include alleys and rail rights-of-way that do not also allow for motor vehicle access, or freeways and their ramps.

> **Street Stub** A temporary street ending where the street will be extended through adjacent property in the future, as those properties develop. Not a permanent street-end or dead-end street.
>
> **Through Street** A street that connects to other streets at both ends or is planned to do so in the future, pursuant to a comprehensive plan, transportation system plan, access management plan, or land use approval.

STREET CONNECTIVITY Expressed as the number of street and/or access way connections within a specific geographic area. Higher levels of connectivity provide for more direct transportation routes and better dispersion of traffic, resulting in less traffic on individual streets and potentially slower speeds through neighborhoods.

TRAFFIC IMPACT ANALYSIS A report prepared by a professional engineer that analyzes existing and future roadway conditions, and which may recommend transportation improvements and mitigation measures.

WALKWAY A sidewalk or path, including any access way, improved to City standards, or to other roadway authority standards, as applicable. See also, Access Way, Pathway, and Sidewalk.

TRANSPORTATION FACILITIES A physical facility used to move people and goods from one place to another (i.e., streets, sidewalks, pathways, bike lanes, transit stations, bus stops, etc.).
TRANSPORTATION IMPROVEMENTS Transportation facility improvements include, but are not limited to:

- Normal operation, maintenance, repair, and preservation activities associated with existing transportation facilities.
- Installation of culverts, pathways, medians, fencing, guardrails, lighting, and similar types of improvements within the existing right-of-way
- Projects specifically identified in the City's adopted Transportation System Plan
- Landscaping as part of a transportation facility.
- Measures necessary for the safety and protection of property or the public.
- Construction of a street or road as part of an approved subdivision or partition consistent with the City's adopted Transportation System Plan.
- Construction of a street or road as part of an approved subdivision or land partition approved in accordance with the applicable land division ordinance.

ARTICLE 2 APPLICATION PROCEDURES
SECTION 2.140 APPLICATION SITE PLAN

(19) The estimated number of generated trips per day from each mode of travel by type including employees, customers, shipping, receiving, etc. A Traffic Assessment may be

required as specified in **Section 5.122** (5) Access Management (f) and possibly a Traffic Impact Study may be required as specified in **Section 5.122 (~~5~~ 7).**
~~**Section 5.122** (5) Access Management (f) 6~~. Additional details ~~or a Traffic Impact Study,~~ may be required by the City if impacts warrant.

SECTION 2.320 SUBDIVISION OR PARTITION TENTATIVE PLAN

SECTION 2.325 PROPOSED PLAN INFORMATION

(9) Identification of all proposed public dedications including streets, pedestrian or bike ways, parks or open space areas in conformance with Article 5, Development Standards, and **Section 8.300**.~~.~~

SECTION 2.326 ACCOMPANYING STATEMENTS

(4) Identify all proposed public dedications including streets, pedestrian or bike ways, parks or open space areas in conformance with Article 5, Development Standards, and **Section 8.300**.

SECTION 2.327 SUPPLEMENTAL INFORMATION

(7) The estimated number of generated trips per day from each mode of travel by type. A Traffic Assessment may be required as specified in **Section 5.122** (5) Access Management (f) and possibly a Traffic Impact Study may be required as specified in **Section 5.122 (7)**. Additional details may be required by the City if impacts warrant.

SECTION 2.328 DECISION CRITERIA

A Subdivision or Partition Tentative Plan shall be approved by the Planning Commission. Approval shall be based upon compliance with the submittal requirements specified above and the following findings:

(6) That the proposed street plan is in conformance with the City Transportation system Plan and City standards and provides the most economic, safe and efficient circulation of traffic in relation to the existing City street system and does not have an adverse impact on pedestrian, bicycle and vehicular safety.

SECTION 2.400 SITE PLAN REVIEW

The purpose of the site plan review procedures is to correlate the general code requirements with the specific site conditions and proposed uses through a comprehensive review process to assure that developments are in conformance with the City's applicable land use regulations. A Site Plan Review is required for all new commercial or industrial developments and for existing commercial or industrial developments where a change of use intensifies on-site or off-site conditions. Public improvements required by City standards or as stipulated by a condition of land use approval (e.g., transportation facilities and improvements, parks, trails, utilities, and similar improvements), as determined by the City Planning Official, except where a condition of approval requires Site Design Review.

SECTION 2.700 AMENDMENTS

(2) **Decision Criteria.** All requests for an amendment to the text or map of this Code or the Comprehensive Plan may be permitted upon authorization by the City Council in accordance with following findings:

(e) The amendment will not have an adverse impact on transportation.
Proposals to amend the Comprehensive Plan or Zoning Map shall be reviewed to determine whether they significantly affect a transportation facility pursuant to Oregon Administrative Rule (OAR) 660-012-0060 (Transportation Planning Rule - TPR). Where the City, in consultation with the applicable roadway authority, finds that a proposed amendment would have a significant affect on a transportation facility, the City shall work with the roadway authority and applicant to modify the request or mitigate the impacts in accordance with the TPR and applicable law

SECTION 3.300 NOTIFICATION
(1) **Administrative** actions and interpretations authorized by this Code do not require notifications unless more than one property is involved, or unless the actions or interpretations affect private access to roads, then the Albany Area MPO and ODOT shall be notified.

(2) **Legislative** actions authorized by this Code require one or more public hearings and notification to the general public. In addition to Notice otherwise required by ORS 227.186, any means of notification that provides the general public and organizations believed to have an interest in the legislative issue with reasonable opportunity to be aware of the hearing on the issue is permitted and encouraged. The Albany Area MPO and ODOT shall be notified of any legislative action.

(3) **Limited Land Use** reviews or **Quasi-judicial** public hearings authorized by this Code require notification to the applicant and to owners of property within 100 feet of the property which is the subject of the notice as identified on the most recent property tax assessment roll where such property is located. Notice shall also be provided to public agencies known to be affected; including the Albany Area MPO and ODOT when a land use application requires a public hearing, is a subdivision or a partition, and/or affects private access to roads; and to any neighborhood or community organization recognized by the City whose boundaries include the site.

ARTICLE 4 ZONING DISTRICTS
SECTION 4.100 PRIMARY ZONES
SECTION 4.111 URBAN RESIDENTIAL ZONE - UR
(2) **Permitted Uses.** In an UR Zone, the following uses and their accessory uses are permitted subject to the standards, provisions and exceptions set forth in this Code:
(a) One single-family dwelling or manufactured dwelling in conformance with **Section 6.163**.
(b) Residential Accessory Structures in conformance with **Section 6.110**.
(c) Temporary Manufactured Dwelling Use in conformance with **Section 1.117 (f)** and **Section 6.164**.
(c) One Duplex per corner tax lot.
(d) **Transportation Facilities**
1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.
2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards

SECTION 4.112 RURAL RESIDENTIAL - URBAN CONVERSION - RR-2.5-UC
(2) **Permitted Uses.** In an RR-2.5-UC Zone, the following uses and their accessory uses are permitted subject to the standards, provisions and exceptions set forth in this Code.

(a) One single-family dwelling or manufactured dwelling in conformance with **Section 6.163**.
(b) Residential Accessory Structures in conformance with **Section 6.110**.
(c) One Temporary Manufactured Dwelling in conformance with **Section 6.164**.
<u>(d)</u> ~~(c)~~ Crop Cultivation and the raising of fowl, bees and domestic farm animals subject to the standards contained in **Section 6.410** except as limited by Item (3) Conditional Uses
<u>(e) **Transportation Facilities**</u>
<u>1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.</u>
<u>2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards</u>

SECTION 4.113 RURAL RESIDENTIAL - URBAN CONVERSION - RR-10-UC
(2) **Permitted Uses.** In an RR-10-UC Zone, the following uses and their accessory uses are permitted subject to the standards, provisions and exceptions set forth in this Code.
(a) One single-family dwelling or manufactured dwelling in conformance with **Section 6.163**.
(b) Residential Accessory Structures in conformance with **Section 6.110**.
(c) One Temporary Manufactured Dwelling in conformance with **Section 6.164**.
<u>(d)</u> ~~(c)~~ Crop Cultivation and the raising of fowl, bees and domestic farm animals subject to the standards contained in **Section 6.410** except as limited by Item (3) Conditional Uses.
<u>(e) **Transportation Facilities**</u>
<u>1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.</u>
<u>2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards</u>

SECTION 4.121 COMMUNITY COMMERCIAL ZONE - CC
(2) **Permitted Uses.** In a CC Zone, the following uses and their accessory uses are permitted subject to the Site Plan Review provisions of **Section 2.400** and the standards, provisions and exceptions set forth in this Code, provided all operations except off-street parking and temporary activities shall be conducted entirely within an enclosed building:
(a) Retail stores or shops.
(b) Personal or business service.
(c) Repair shops (See 3 (b) below).
(d) Eating or drinking establishments.
(e) Offices, business or professional.
(f) Financial institutions.
(g) Indoor commercial amusement or recreation establishments.
(h) Public or semi-public buildings and uses.
(i) Residential Care Facility for 15 or less people or 13 or more children compliance with State standards and requirements and **Section 6.140**.
(i) Conversion of residence to a permitted commercial use in accordance with **Section 6.314 (1)**.
(k) Attached residences to a commercial use in accordance with **Section 6.314 (2)**.
<u>(l) **Transportation Facilities**</u>
<u>1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.</u>

2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards

SECTION 4.131 LIMITED INDUSTRIAL-COMMERCIAL ZONE - LIC

(2) **Permitted Uses.** In an LIC Zone, the following uses and their accessory uses are permitted subject to the Site Plan Review provisions of **Section 2.400** and the standards, provisions and exceptions set forth in this Code.

(a) Interim farm use in accordance with **Section 6.410**.

(b) All uses permitted in the Community Commercial Zone.

(c) All manufacturing, warehousing, wholesaling, compounding, assembling, processing, storing, researching, or testing uses provided all operations except off-street parking and temporary activities shall be conducted entirely within an enclosed building unless approved by the Planning Commission. There shall be no emissions or nuisance characteristics discernible without instruments at the property line as identified in the Applicant's application.

(d) Automotive, truck, RV, equipment or other repair shops

(e) **Transportation Facilities**

1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.

2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards

SECTION 4.132 LIMITED INDUSTRIAL ZONE - LI

(2) **Permitted Uses.** In an LI Zone, the following uses and their Accessory uses are permitted subject to the Site Plan Review provisions of **Sections 2.400** and the standards, provisions and exceptions set forth in this Code.

(a) Interim farm use in accordance with **Section 6.410**.

(b) All manufacturing, warehousing, wholesaling, compounding, assembling, processing, storing, researching, or testing uses provided all operations except off-street parking and temporary activities shall be conducted entirely within an enclosed building unless approved by the Planning Commission. There shall be no emissions or nuisance characteristics discernible without instruments at the property line as identified in the Applicant's application.

(c) Automotive, truck, RV, equipment or other repair shops

(d) **Transportation Facilities**

1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.

2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards

SECTION 4.133 GENERAL INDUSTRIAL ZONE - GI

(2) **Permitted Uses.** In an GI Zone, the following uses and their accessory uses are permitted subject to the Site Plan Review provisions of **Section 2.400** and the standards, provisions and exceptions set forth in this Code.

(a) Interim farm use in accordance with **Section 6.410**.

(b) Industrial Buildings and Uses. All manufacturing, warehousing, wholesaling, compounding, assembling, processing, storing, researching, treating, or testing or any combination thereof of items, materials or goods is permitted subject to the conditions and standards of this Code.

(c) Activities possessing emissions or nuisance characteristics and activities requiring a county, state or federal permit shall require mitigation of impacts.

(d) Additions, accessory structures or equipment added to existing uses may be reviewed and permitted administratively by the City Administrator in lieu of the Site Plan Review procedures provided they do not constitute a new manufacturing or processing operation and provided they comply with all other requirements of this Code.

(e) **Transportation Facilities**

1. Operation, maintenance, and repair of existing transportation facilities identified in the City's Transportation System Plan.
2. Dedication of right-of-way, authorization of construction and the construction of facilities and improvements, where the improvements are consistent with clear and objective dimensional standards

SECTION 5.117 YARD SETBACK EXCEPTIONS

The following exceptions to the yard standards specified for each zone are required for any property in any zone under the following conditions:

(2) The placement of buildings and the establishment of yards shall conform the right-of-way widths for existing and proposed street alignments shown on the Millersburg Street Plan as follows:

TYPE OF STREET	RIGHT-OF-WAY WIDTHS
Local Access Streets	50 ~~52-~~60 feet
Existing and Future Local Access Streets	

SECTION 5.122 TRANSPORTATION STANDARDS

The City of Millersburg has adopted the **Albany Construction Specifications (ACS)** for all public construction. Each application to the City shall address the transportation needs and issues relative to that request in conformance with the provisions of this Section.

(1) **General Provisions**

(d) Development proposals shall address the transportation needs of the community by planning for improvements to existing and new transportation facilities to accommodate the vehicle, bicycle, and pedestrian needs of the community, as established in the Millersburg Transportation System Plan.

(e) Development proposals within the City shall comply with the Millersburg Street Plan contained in the Millersburg Comprehensive Plan, including the Millersburg Transportation System Plan.

(5) **Access Management**

~~(f) All new commercial or industrial uses, multi-family residential uses, subdivisions, and manufactured dwelling parks, including expansion of existing uses shall submit for City approval a Traffic Assessment, which shall include the following:~~

1. ~~Location of access points;~~
2. ~~Estimates of the amount of traffic that will utilize the above access points;~~

3. ~~Effect that the proposed development will have on traffic movement of both vehicles and pedestrians.~~
4. ~~The identification of all improvements that will be required to maintain adequate traffic flow.~~
5. ~~Access approval by the Linn County Road Department.~~
6. ~~Additional details or a Traffic Impact Study, may be required by the City if impacts warrant.~~

(k) Access Spacing

Functional Classification	**Posted Speed**	**Minimum Spacing between Driveways[1,2]**	**Minimum Spacing between Intersections[1,2]**
State Managed Arterial	35-45 mph	ODOT Standard	ODOT Standard
Arterial	35-45 mph	300 feet	600 feet
Collector	25-30 mph	50 feet	300 feet
Local Residential	25 mph	Access to each lot permitted	125 feet
Local Industrial	25 mph	Access to each lot permitted	300 feet

Notes:

1. Desirable design spacing; existing spacing will vary. Each parcel is permitted one driveway regardless of the minimum driveway spacing standard although shared access is encouraged.
2. Spacing standards are measured centerline to centerline.

(7) Traffic Impact Study

The purpose of this subsection is coordinate the review of land use applications with roadway authorities and to implement Section 660-012-0045(2)(e) of the state Transportation Planning Rule, which requires the City to adopt a process to apply conditions to development proposals in order to minimize impacts and protect transportation facilities. The following provisions also establish when a proposal must be reviewed for potential traffic impacts; when a Traffic Impact Analysis must be submitted with a development application in order to determine whether conditions are needed to minimize impacts to and protect transportation facilities; the required contents of a Traffic Impact Analysis; and who is qualified to prepare the analysis.

(a) When a Traffic Impact Analysis is Required. The City or other road authority with jurisdiction may require a Traffic Impact Analysis (TIA) as part of an application for development, a change in use, or a change in access. A TIA shall be required where a change of use or a development would involve one or more of the following:

1. A change in zoning or a plan amendment designation;
2. Operational or safety concerns documented in writing by a road authority;
3. An increase in site traffic volume generation by 300 Average Daily Trips (ADT) or more;
4. An increase in peak hour volume of a particular movement to and from a street or highway by 20 percent or more;
5. An increase in the use of adjacent streets by vehicles exceeding the 20,000 pound gross vehicle weights by 10 vehicles or more per day;
6. Existing or proposed approaches or access connections that do not meet minimum spacing or sight distance requirements or are located where vehicles entering or leaving the property are restricted, or such vehicles are likely to queue or hesitate at an approach or access connection, creating a safety hazard;
7. A change in internal traffic patterns that may cause safety concerns; or
8. A TIA required by ODOT pursuant to OAR 734-051.

(b) Traffic Impact Analysis Preparation. A professional engineer registered by the State of Oregon, in accordance with the requirements of the road authority, shall prepare the Traffic Impact Analysis.

SECTION 5.123 STREETS

(4) Minimum right-of-way and roadway widths. The width of streets and roadways in feet shall be adequate to fulfill city specifications as provided in **Article 8** of this Code and should not be less than the minimums shown in the following Table unless otherwise approved on a development plan.

~~Arterial, Collector & Local Street Design Table~~

~~Street Type~~	**~~ROW Width~~**	**~~Curb-to-Curb Width~~**	**~~Center Turn Lane Width~~**	**~~Travel Lanes/Width~~**	**~~Bike Lane Width Each Side~~**	**~~On-Street Parking Width and Location~~**	**~~Landscape Strip Width~~**	**~~Sidewalk Width~~**
~~Arterial~~	~~80~~	~~50~~	~~14~~	~~2/12~~	~~6~~	~~None~~	~~5~~	~~5~~
~~Arterial~~	~~60~~	~~36~~	~~NA~~	~~2/12~~	~~6~~	~~None~~	~~5~~	~~5~~
~~Collector w/Parking~~	~~60~~	~~50~~	~~NA~~	~~2/12~~	~~6~~	~~7' Each Side~~	~~None~~	~~5~~
~~Collector w/Landscape~~	~~60~~	~~36~~	~~NA~~	~~2/12~~	~~6~~	~~None~~	~~5~~	~~5~~
~~Local w/Parking on Both Sides~~	~~52~~	~~32~~	~~NA~~	~~2/12~~	~~NA~~	~~7' Each Side~~	~~4~~	~~5~~
~~Local Skinny St. Parking on One Side~~	~~40~~	~~29~~	~~NA~~	~~2/11~~	~~NA~~	~~7' Each Side~~	~~None~~	~~5~~

CITY OF MILLERSBURG CROSS-SECTION DESIGN GUIDELINES

Functional Classification	Right-of-Way[1]	Design Widths							
		Minimum Curb-To-Curb Paving[2]	Within Curb-To-Curb Area					Landscape Buffer (Both Sides)	Sidewalks (Both Sides)
			Motor Vehicle Travel Lane	Median and/or Center Turn Lane	Bike Lane (Both Sides)	On-Street Parking			
Arterial									
2 Lanes	60 ft	36 ft	12 ft	N/A	6 ft	N/A		5 ft	5 ft
2 Lanes + Center Turn	80 ft	50 ft	12 ft	14 ft	6 ft	N/A		5 ft	5 ft
Collector – Residential									
No parking	60 ft	36 ft	12 ft	N/A	6 ft	N/A		0-5 ft	5 ft
Parking both sides	60 ft	50 ft	12 ft		6 ft	7 ft		N/A	5 ft
Local – Residential									
Parking one side	50 ft	32 ft	Unstriped	N/A	N/A	Unstriped		4 ft	5 ft
Parking both sides	50 ft	36 ft	Unstriped			Unstriped		None or 4 ft	5 ft
Skinny[4,5]	50 ft	28 ft	Unstriped			Unstriped		5-6 ft	5-6 ft
Alley[5]	20–24 ft	18–20 ft	N/A			N/A		N/A	optional
Local – Industrial									
Parking both sides	60 ft	40 ft	Unstriped	N/A	N/A	Unstriped		Behind[6]	5-6 ft
Local – Commercial Service/Alley									
No Parking	30 ft	20 ft	Unstriped	N/A	N/A	N/A		N/A	4 ft[7]
Parking one side	40 ft	28 ft	Unstriped			Unstriped			
Trails and Shared-Use Path									
Collector With Shared-Use Path[3]	60 ft	36 ft	12 ft		6 ft	N/A		4.5 ft	5 ft one side, 10 ft multi-use path other side
Trails	10–20 ft	10–12 ft	N/A	N/A	N/A	N/A		2–7 ft	N/A

Notes:

1. Right-of-way may be wider than the suggested cross-section; this limits fences from abutting the sidewalk and allows for flexibility in cases of unforeseen growth or development.
2. Curbs are generally 6 inches wide.
3. Collector with Shared-Use Path includes sidewalk on one side of street and path on other side of street.
4. This standard is only applicable to residential streets under certain conditions and requires Planning Commission approval for the exception.
5. Not appropriate standards for commercial streets.
6. Street trees shall be located on the outside edges of the right-of-way.
7. Sidewalk required on one side only.

(5) Street Design Considerations for Subdivision, Partition, Site Plan Review, Conditional Use or Variance approval:

(d) The Planning Commission may approve 28-foot wide "Skinny Streets" in developments to reduce maintenance costs and provide a pedestrian friendly environment. The City Engineer shall determine the adequacy of proposed streets considering:

1. The street shall be adequate to serve the number of dwelling units
~~2. The street shall be limited in length and not provide through access.~~
2. The distance between cross streets shall be no more than 600 feet.
3. The street is a cul-de-sac not designed to provide future through-connection.
4. Expected parking demand can be met off-street.
5. The street is provided as an infill connecting street within an existing grid system or will be a short segment (no more than two blocks) fulfilling a similar secondary role in a proposed subdivision.
6. Dedication of a standard right-of-way—with reduced paving width when initially built— may be require so the City may increase capacity when needed.
7. The provision of additional parking on a one-to-one basis to compensate for loss of on-street parking may be required. Such parking may be located in mini-lots or some other alternative.

(9) Cul-de-sac: A cul-de-sac is prohibited except where topography or other natural or man-made features prohibit through connections. If a cul-de-sac is longer than 150 feet, it must be designed to provide adequate space for access and maneuverability of large and emergency vehicles. A cul-de-sac shall have a maximum length of 600 feet but may be longer when approved by the Planning Commission. A cul-de-sac shall terminate with a circular turn-around in conformance with the **ACS** and the Fire District requirements.

K. Technical Memorandum #11: Summary of Findings

City of Millersburg Transportation System Plan

Technical Memorandum #11
(Task 8.1 Summary of Findings)

Prepared for

City of Millersburg
4222 NE Old Salem Road
Albany, Oregon

Prepared by

David Evans and Associates, Inc.
2100 SW River Parkway
Portland, Oregon

December 2016

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Title VI and Environmental Justice

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations of February 11, 1994, requires agencies undertaking federal projects to identify low-income and minority populations; assess whether high and adverse human health or environmental impacts would result from the alternatives; and ensure participation of low-income and minority populations in the transportation decision making process.

Additional underserved populations are the "transportation disadvantaged." These persons are unable to transport themselves or to purchase transportation and are, therefore, dependent upon others to obtain access to health care, employment, education, shopping, social activities, or other life-sustaining activities. Projects receiving federal assistance must also evaluate impacts to these populations to comply with the Age Discrimination Act of 1975, Federal-Aid Highways Act, Rehabilitation Act of 1973 and Americans with Disabilities Act of 1990.

This memorandum summarizes the efforts to address Title VI and Environmental Justice (EJ) during the development of the Millersburg Transportation System Plan.

Identification

Summarized below are the low-income and minority populations within the planning area along with elements of the transportation infrastructure that serve the transportation disadvantaged.

Socioeconomic Data

The consultant team made special efforts to reach out to communities of color and to low-income, disabled, and other underrepresented groups. Implementation of the Public and Stakeholder Involvement Strategy (PSIS) *(Technical Memorandum #1)* meets the requirements and guidance found in the ODOT Title VI (1964 Civil Rights Act) Plan. Specifically, the Title VI Plan identifies measures to reach and solicit comments from disadvantaged populations within a community. The list of Title VI and EJ populations includes race/color/national origin, age, gender, disabilities (mental and physical), limited English proficiency, minority races, and low-income.

The consultant team performed demographic analysis using U.S. Census data (at the smallest scale possible, e.g., Census Tract or Block Group) and input from other ongoing plans in the region. Figure 1 illustrates the 2010 US Census tract and block boundaries for Millersburg, and Table 1 lists the detailed population profile of Millersburg reference areas.

Outreach and reporting protocols were developed and followed in order to meet Title VI and EJ Program requirements and directives, to ensure full and fair participation by all potentially affected community members in the decision-making process. Title VI and EJ analysis and documentation was consistent with the Region 2 ODOT Guidelines for Addressing Title VI/EJ in Transportation Planning.

Figure 1. City of Millersburg Census Block Group Boundaries

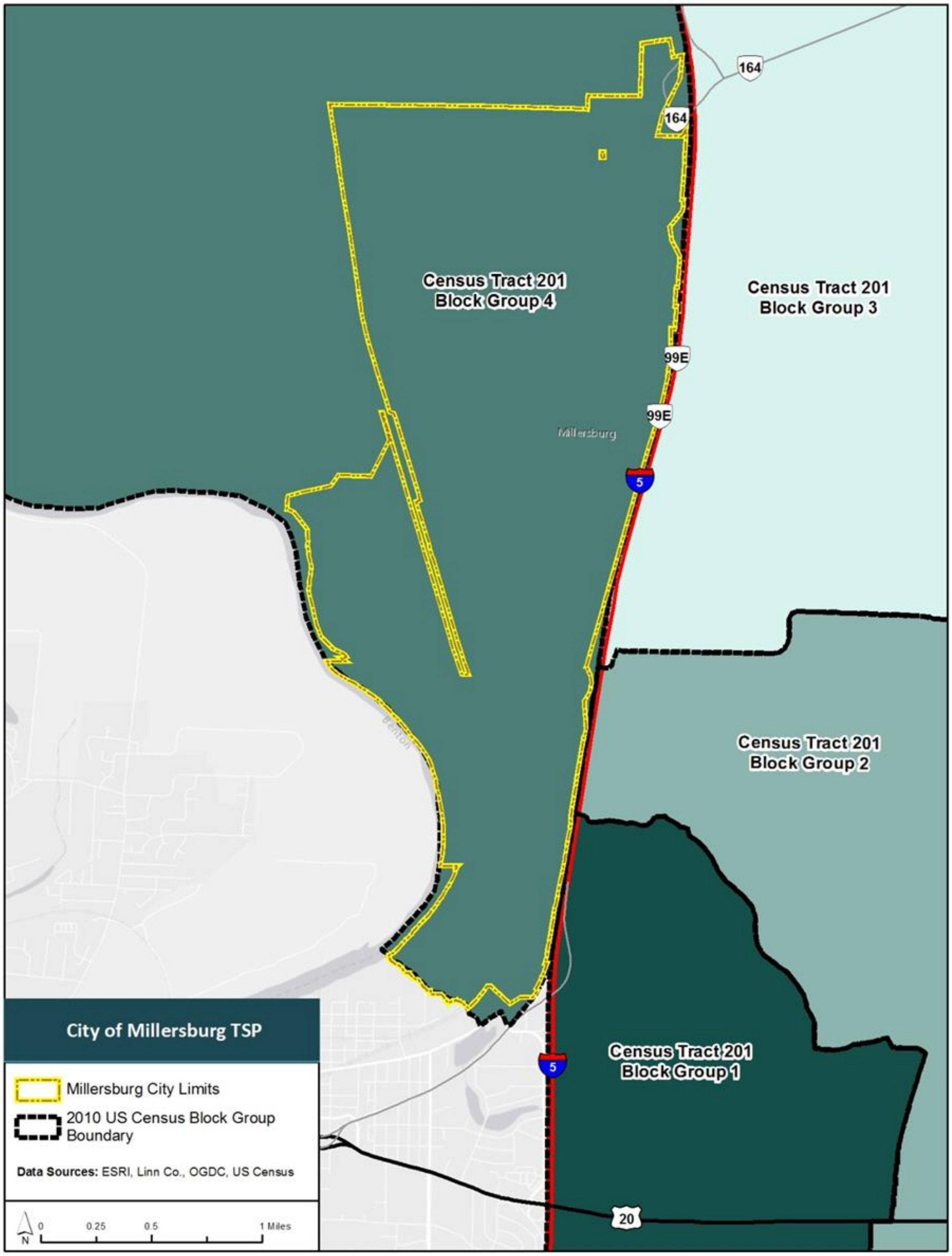


Table 1. Census Data for Millersburg Block Group and Reference Areas

	Millersburg	Reference Areas				
	Tract 201, Block Group (BG) 4	BG 3	BG 2	BG 1	Linn County	Oregon
Total Population[1]	1,738	928	1,617	4,841	116,672	3,831,074
Number of Households[1]	664	363	595	1,891	45,204	1,518,938
Male	878	476	823	2,424	57,578	1,896,002
Female	860	452	794	2,417	59,094	1,935,072
Minority (Nonwhite)[1]	172	59	128	500	15,093	825,226
Minority (nonwhite) (%)[1]	10%	6%	8%	10%	13%	22%
Hispanic or Latino (Population)[1]	161	52	103	381	9127	450062
Hispanic or Latino (%)[1]	9%	6%	6%	8%	8%	12%
White Alone[1]	90%	94%	97%	89.7%	90.6%	83.6%
Black or African American Alone[1]	0%	0%	0%	0.7%	0.5%	1.8%
American Indian or Alaskan Alone[1]	2%	2%	1%	1.5%	1.3%	1.4%
Asian Alone[1]	1%	1%	1%	1.3%	1%	3.7%
Native Hawaiian/Other Pacific Islander[1]	0%	0%	0%	0.1%	0.1%	0.3%
Some Other Race[1]	5%	2%	2%	3.4%	3.3%	5.3%
Two or More Races[1]	3%	3%	3%	3.4%	3.3%	3.8%
Median HH income[2]	$ 66,750	$ 49,650	$ 49,650	$ 57,500	$ 46,939	$ 50,229
Poverty Status (Population)	69	25	41	318	7044	223771
Poverty Status (%)	4%	3%	3%	7%	6%	6%
Median Age[1]	42.1	49.4	40.4	33.6	39.2	38.4
Senior pop (Age >65)	126	86	110	225	17991	533533
Persons with disability[2]	209	91	228	462	14326	406246
Non-Proficient Speaking English[2]	10	0	0	19	2559	225703

[1] 2010 US Census,
[2] 2009-13 American Community Survey

Transportation Infrastructure

The non-auto transportation (i.e., pedestrian, bicycle, and transit) infrastructure was reviewed as part of the system inventory to identify potential barriers in the system.

Bicycle and Pedestrian Inventory

The City of Millersburg bicycle and pedestrian system varies widely from neighborhood to neighborhood. Most of the newer subdivisions have complete sidewalk systems, while older neighborhoods lack adequate facilities. Generally, the arterial or collector roadways either have shoulder or striped bicycle lanes, but not both. Morningstar Road and Woods Road do not have any bicycle or pedestrian facilities, neither does Century Drive, however this roadway is outside City Limits but intersects with a study area intersection. Table 2 provides a summary of the bicycle and pedestrian facilities on arterial and collector roads within the City of Millersburg.

Table 2. Inventory of Bicycle and Pedestrian Facilities on Arterials and Collectors

Roadway Name	Functional Classification	Sidewalks	Bike Lanes	Street Lighting	Shoulder	On-Street Parking
Old Salem Rd NE	Minor Arterial	Yes[1]	No	Minimal	Yes	No
Millersburg Dr	Minor Arterial	Yes[2]	Yes[2]	Minimal	No	No
Morningstar Rd NE	Minor Arterial	No	No	At intersections	No	No
Conser Rd NE	Minor Arterial	Yes[3]	Yes	At intersections	No	No
Alexander Ln NE	Collector	Yes	Yes	At intersections	No	No
Woods Rd NE	Collector	No	No	No	No	No
Century Dr NE	Collector	No	No	No	No	No

Notes:
1. Old Salem Rd has sidewalks on the west side from the north City Limits to approximately 400 feet northwest of Nygren Rd
2. No sidewalk or bike lane west of Woods Rd
3. Sidewalks exist on both sides of Conser Rd extending approximately 500 feet west from Old Salem Road and on the north side from Old Salem Rd to approximately 140 feet west of Katelyn Way.

Most of the streets are two lanes with narrower cross sections and low traffic demand, however, higher posted speeds. As there are no schools within Millersburg, the major bicycle and pedestrian generators are the city parks (generally accessed via Alexander Lane) and, potentially, City Hall. Pedestrians would benefit from the aid of pedestrian-activated crossing devices or other marked crossings that do not currently exist within the City of Millersburg.

Transit Inventory

Millersburg does not currently have an established transit system; however, there are private on-demand services. Currently being prepared is a Transit Development Plan (TDP) for the Albany Area Metropolitan Planning Organization (AAMPO) in conjunction with the Regional Transportation Plan (RTP). The TDP will include considerations about the existing transit system, summary of future growth and regional travel, and prioritized projects to address existing and future transit needs. The TDP process will result in a separate plan that focuses on transit and interim documentation, but will share some of the same outreach and public events as the RTP process.

Willamette Valley Transport

Willamette Valley Transport provides wheelchair, stretcher and ambulatory transportation for those who need more assistance than can be provided by a basic taxi service.

Willamette Valley Transport has branches in Salem and Portland, and the Salem branch serves the Millersburg area. Prices vary depending on the distance and customer's needs.

Taxi Service

There are several privately operated taxi services available to the Millersburg area, operated out of the City of Albany. Most operators provide service 24 hours per day, seven days per week.

Passenger Rail Service

Passenger rail service is not available in Millersburg itself, however, there is an Amtrak station approximately four miles south in the City of Albany. Amtrak provides north-south rail passenger service through the Willamette Valley corridor via Amtrak Cascades (between Eugene, Oregon and Vancouver, British Columbia) and Amtrak Coast Starlight (between Los Angeles, California and Seattle, Washington) trains. The passenger rail service runs approximately six passenger trains per day on track owned by UP[1].

Transportation Barriers

Potential transportation barriers in the TSP include a lack of public transit service. The majority of the existing deficiencies can be associated to network connectivity (all modes) and sub-standard roadway facilities when compared to the City's development code. Table 3 summarizes the existing deficiencies.

Table 3. Summary of Existing Deficiencies

<table>
<tr><th>Deficiencies</th><th colspan="2">Location</th></tr>
<tr><td colspan="3">Geometry</td></tr>
<tr><td>Cross-Sections</td><td colspan="2">With the exception of Alexander Lane, all study area arterials and collectors have sub-standard cross-sections per functional classification; generally due to lack of bicycle facilities or paved curb-to-curb width.</td></tr>
<tr><td colspan="3">Pedestrian Facilities</td></tr>
<tr><td>Sidewalks</td><td><u>No Sidewalks:</u>
• Morningstar Road
• Woods Road
• Century Drive</td><td><u>Limited/Discontinuous Sidewalks:</u>
• Old Salem Road
• Millersburg Drive
• Conser Road</td></tr>
<tr><td>Bicycle Lanes</td><td><u>No Bicycle Lanes:</u>
• Old Salem Road
• Morningstar Road
• Woods Road
• Century Drive</td><td><u>Limited/Discontinuous Bicycle Lanes:</u>
• Millersburg Drive</td></tr>
<tr><td>Safe Routes to School</td><td colspan="2">Limited pedestrian connections and barriers (highways) between Millersburg and the closest elementary, middle and high school.</td></tr>
</table>

[1] Albany Area MPO Regional Transportation Plan Existing Transportation Conditions, October 14, 2015.

Deficiencies	Location
Pedestrian Ramps	• None of the intersections in Millersburg have marked cross-walks <u>Study intersections without pedestrian ramps:</u> • Morningstar Road at Millersburg Drive • Woods Road at Alexander Lane • Woods Road at Conser Road • Old Salem Road at Nygren Road • Old Salem Road at NE Old Salem Road • Old Salem Road at Century Drive • All I-5 ramp terminals
Transit	
Lack of Transit Facilities	There is no regular public transportation/transit available within the City of Millersburg
Standards	
Traffic Operations	The City does not currently have an operational/mobility standard
Safety	
Crash History	• Old Salem Road at Century Dr has a crash rate exceeding critical crash rate • 13 Fixed object collisions (46% of total crashes)

Other potential transportation barriers could include access to services such as health services, schools, and groceries for EJ populations in rural areas, language barriers, and barriers to public transit information access.

Since its inception in 1990, the Americans with Disabilities Act (ADA) has significantly changed design requirements for the construction of public space. Much of the pedestrian environment built prior to the ADA's inception does not adequately accommodate people with disabilities, as is the case for some areas of Millersburg. The City of Millersburg's approach is improve facilities through land development project requirements, capital street improvement projects, and capital projects that specifically retrofit outdated public pedestrian facilities. In recognition of this, the City's goals and objectives of the TSP also aim to create pedestrian environments that are functional and accessible to all people.

Public Outreach Summary

The public involvement process for the Millersburg TSP included a Project Management Team (PMT), Technical Advisory Committee (TAC), Planning Commission and City Council workshops, and general public outreach.

Advisory Committees

There were two advisory committees formed to provide input during the development of the TSP:

- Project Management Team (PMT)/TAC
- Planning Commission and City Council

Project Management Team

The PMT provided technical and policy guidance and served as the primary body making recommendations about the project. The committee was composed of staff from David Evans and Associates, the City of Millersburg, the Oregon Department of Transportation (ODOT), Linn County, DKS Associates, ODOT Transportation Planning Analysis Unit (TPAU), and the Department of Land Conservation and Development (DLCD).

The Technical Advisory Committee also provided technical and policy guidance for the project. The committee was composed of staff from the consulting firms (DKS & David Evans & Associates), the City of Millersburg, the Oregon Department of Transportation (ODOT), Linn County, and the Albany Area Metropolitan Planning Organization (AAMPO).

There were eleven PMT meetings held during development of the Millersburg TSP. Appendix A provides a collection of the meeting materials, including the agendas and summaries.

Planning Commission and City Council

There were five joint Planning Commission/City Council (PC/CC) meetings during development of the Millersburg TSP. Meetings took place on the following dates:

> December 8, 2015 – Topics: Introduction, Project Overview and Schedule, Work Completed, Goals and Objectives, and Questions
>
> February 9, 2016 – Topics: Inventory, Existing and Future Conditions, Next Steps
>
> May 10, 2016 – Topics: Working Documents and Discussion
>
> August 9, 2016 – Topics: Discuss Project List (hosted by Darrin Lane, no consultant staff present)
>
> October 11, 2016 – Topics: Draft TSP, Draft TM #10, and Discussion

Appendix A provides a collection of the meeting materials, including the agendas and summaries (with presentations).

General Public Outreach

General public outreach included web-accessible materials, two public open houses, and presentation before the planning commission.

Website

Posting of project documents (technical memoranda and reports) for public access was available via the City of Millersburg TSP website (http://www.millersburgtsp.com/). The documents will be available on the City's website after project completion.

Public Open Houses

The two public open houses acted as informational exchanges where staff and consultant present and explain project information and the public could provide input and comment on issues and concerns of importance to them. A public announcement was included with the water bill mailings and thus reached nearly all residents. Open House announcements were also included on the project website.

There were two public open houses held during development of the TSP on the following dates:

1. March 29, 2016 – Topics: Introduction, TSP Background & Purpose, Goals and Objectives, Existing Conditions
2. October 18, 2016 – Topics: TSP Background & Purpose, Funding & Implementation, Planning Process, Street, Bicycle and Pedestrian Modal Plans, Functional Classification, Street Design Guidelines

Appendix A provides meeting materials, including summaries and presentations.

Planning Commission/City Council – TSP Hearings

On September 1, 2016, the Planning Commission/City Council (PC/CC) received a draft TSP.

The draft TSP was presented before the PC/CC on October 11, 2016. Following the presentation, Planning Commissioners and the public asked questions and made comments. The presentation is available in Appendix A.

The public hearing occurred on December 13, 2016. There was a presentation summarizing the project process and TSP document. There were minor changes to the Draft TSP in response to comments. Suggestions were highlighted, and ultimately, the TSP was adopted by the City.

All public meetings were held at city hall, which is an ADA accessible facility.

Inclusion

Environmental, land use, and socioeconomic considerations are all part of the concept evaluation and selection of projects to be included in the TSP. A qualitative assessment on the impacts to resources, based on the data assembled for the environmental and land use reconnaissance, included identification of Title VI populations in the study area. The level of analysis of the study area is designed to identify those areas judged to have considerable potential for conflict.

The specific socioeconomic (Title VI) considerations in the evaluation included:

- Would the footprint of the concept expand into areas of minority and/or low-income populations?
  None of the projects included in the TSP involve significant expansion of the transportation infrastructure. Projects that may require additional right of way are located in areas with commercial or industrial zoning.
- Would the concept benefit or affect the transportation-disadvantaged population by changing the sidewalk or bicycle network?
  Within the transportation network considered for the TSP, Millersburg's bicycle and pedestrian system would benefit from many of the modernization projects identified under the multimodal street system improvements, as new sidewalks would be constructed.

One project would restripe faded bicycle lane stencils and extend the bicycle stencils for the length of a roadway. This would have minimal impacts to disadvantaged populations.

- Would the concept benefit or affect the transportation-disadvantaged population by changing access to transit?

  Because no transit system currently exists in the City of Millersburg, the TSP focuses on transit-supportive improvements. The Albany Area MPO Regional Transportation Plan (AAMPO RTP) and associated Transit Development Plan will identify projected transit service demand and potential coverage plans for the Metropolitan Planning Organization (MPO) area that includes Millersburg. The extension of public transit service from Albany to Millersburg could be provided by, and in coordination with, Millersburg's regional planning partners. The primary purpose of these improvements is to support regional planning efforts to extend public transit service to Millersburg.

- Would the concept benefit or affect the transportation-disadvantaged population by changing access to community resources, particularly those that serve minority and/or low-income populations?

  One project to construct a conceptual trail system that would connect neighborhoods to community gathering places (such as Millersburg Park, City Hall, and Simpson Park) is included in the TSP. This would have a significant positive impact on connectivity for everyone, including the disadvantaged population.

  One project to connect Conser Road to regional trails would provide increased access from Millersburg to Albany by bicycle and by foot. This project would greatly benefit connectivity for all, including the disadvantaged population.

Appendix A. Meeting and Open House Materials

MILLERSBURG TSP

Project Management Team (PMT) Meeting: Project Kick-off

Meeting #1

1:30 PM to 2:00 PM

October 15, 2015

Conference Call

AGENDA

Introductions (5 min)	Shelly Alexander, DEA
Project Overview (10 min) Overview of Process Expected project duration and general schedule Roles and responsibilities	Shelly Alexander, DEA Dan Fricke, ODOT
PMT Communications (10 min) • Select day/time for monthly PMT • TAC member selection • Basecamp access and protocol • Data transfer • Dates for upcoming meetings (PC/CC & TAC), add to Basecamp • Ongoing communications	Shelly Alexander, DEA
Other Items to Discuss (5 min)	All
Adjourn	

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #1 - OCTOBER 15, 2015

MEETING NOTES

INTRODUCTION

- Participants included:
  - Dan Fricke, ODOT
  - Don Driscoll, City of Millersburg
  - Janelle Booth, City Engineer/CH2M
  - Darrin Lane, Linn County
  - Shelly Alexander, DEA Project Consultant PM
  - Garth Appanaitis, DKS Prime Consultant PM
- Unable to participate
  - Barbara Castillo, City of Millersburg

PROJECT OVERVIEW

- Shelly presented the Project Flow Diagram (attached to the meeting invite). The tasks are listed to the left, the deliverables are listed in the middle, and the right includes the public involvement schedule and how it fits into the overall project process. We have an aggressive schedule and are starting behind. The consultant team is working to catch up by the end of the year. Please be on the lookout for draft deliverables to review.
- Shelly reminded the group that there will be no I-5 work included with the TSP preparation
- Schedule
  - Dan mentioned the schedule and the aggressive nature of the deadlines as presently laid out. 7-month is ambitious: there may be leniency. Dan's participating in a conference call that will discuss the possibility of extending the timeline and follow up with the group soon. He mentioned that he wants to "do it right" and make sure it is what the City needs
  - Don indicated that there is no rush on the City's end-they are flexible
  - Shelly inquired about the needed ODOT time for review prior to public involvement (PC/CC/Community Meetings).
- Roles/Responsibilities
  - Garth - Role is limited. Primarily coordination with other regional plans/TSPs and QA/QC with AAMPO and in general
  - Dan - ODOT PM, help City get what it needs
  - Darrin - coordination with Linn Co MPO, he is a local City Councilor, significant knowledge about the pavement management in the City
  - Don - Coordination with City and team, Comprehensive Plan knowledge, traffic analysis
  - Janelle - City Engineer (support) and review of technical information

PMT COMMUNICATION

- PMT monthly meetings

    - Monday afternoons are good the 2nd week of the month as long as there is no holidays on the 1st Monday.
    - Shelly to send recurring meeting/appointment
- TAC member selection
    - Dan and Don to work on this, need name, phone number and email address. Dan to send draft TAC member list to Don next week (~by 10/23). To Shelly in 1-2 weeks (~by 10/30)
    - Candidate ideas include: Barbara, Don, Janelle, Darrin, Dan, Shelly, and someone from planning commission
- Planning Commission/City Council meet the 2nd Tuesday of the month

OTHER ITEMS TO DISCUSS

- With regard to schedule another factor to consider is the ODOT review time prior to scheduling public meetings. Shelly will follow up with Dan.

ADJOURN

ACTION ITEMS:

1. **Dan** to follow up with PMT on the ability to extend the schedule
2. **Shelly** to send out meeting minutes
3. **Shelly** to send out proposed schedule with dates that accounts for PC/CC meeting schedule
4. **Shelly** to send out draft deliverables for review
5. **PMT** members to review draft materials
6. **Shelly** to send recurring meeting/appointment for 2nd Monday of month, unless holiday
7. **Dan** to send draft TAC member list to Don next week (~by 10/23).
8. **Dan/Don** to send TAC member list to Shelly in 1-2 weeks (~by 10/30)
9. **Shelly** to follow up with Dan regarding ODOT review time prior to public meetings/of deliverables overall.

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #2 - NOVEMBER 9, 2015

AGENDA

Roll Call (2 min) — Shelly Alexander, DEA

Draft Deliverables to-date (5 min) — Shelly Alexander, DEA

Website (by 11/6)

Templates (by 11/6)

TM #1: PSIS (by 11/11)

Schedule (10 min) — Dan Fricke, ODOT; Shelly Alexander, DEA

- DOT Extension opportunity
- Detailed schedule - ETA
- PC/CC meeting dates, how to get on agenda

TAC list status (5 min) — Don Driscoll, City of Millersburg

Goals and Objectives (TM #4) (20 min) — Shelly Alexander, DEA

- Existing Comp Plan (see meeting appointment update)
- Revisions
- TPR compliance
- Considerations

Transportation System Plan format (10 min) — Shelly Alexander, DEA

- Coburg
- Toledo
- Tangent
- Jefferson
- Lincoln City

Other Items to Discuss (5 min) — All

Adjourn

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #2 - NOVEMBER 9, 2015

MEETING NOTES

INTRODUCTION

- Participants included:
  - Dan Fricke, ODOT
  - Don Driscoll, City of Millersburg
  - Janelle Booth, City Engineer/CH2M
  - Darrin Lane, Linn County
  - Shelly Alexander, DEA Project Consultant PM
- Unable to participate
  - Barbara Castillo, City of Millersburg
  - Garth Appanaitis, DKS Prime Consultant PM

DRAFT DELIVERABLES

- Shelly confirmed access to Basecamp and receipt of the notification that the three (3) deliverables had been posted (draft website, memo/report/figure templates), and TM #1: PSIS). She requested that the PMT responds to the deliverable thread on Basecamp even if the response is "no comments". The PMT responded that they hadn't seen the draft website. **Shelly** to follow up/post link to draft website. PMT (Janelle and Darrin) had comments on TM #1 regarding the social media reference. **Shelly** to call Don for his comments on TM #1.

SCHEDULE

- Dan mentioned that we have some flexibility with the schedule and do not have to be finished by April 2016. An early- to mid-summer timeframe would be acceptable to finish the TSP; however, we'll need to be able to provide a draft list of regionally significant projects by mid-February.
- **Shelly** will coordinate with DKS to determine a due date for the draft regionally significant projects.
- **Shelly** will prepare a detailed schedule to send to the PMT for review in next 1-2 weeks.
- PMT discussed PC/CC meeting dates. The TSP will not be on the November agenda, though we'd like to get on the December agenda. The PMT discussed using the last 30 minutes of the Planning Commission (PC) meeting and the 30 minute break prior to the City Council (CC) meeting (total of 1 hour) to jointly meet with the 2 groups and discuss the project with the members. **Darrin** will call Barbara to give her a heads up. **Shelly** will follow up with Barbara to provide specifics. Darrin suggested it is open to public, but focus on PC/CC questions. Discussion topics: General overview and 1st deliverables-Technical Memos 1, 2, and 3.
- Next PC/CC meeting December 8, PMT would like to have a 1-hour slot from 6:30-7:30 as described in previous bullet
- January 12, 2016 PC/CC meeting agenda opportunities are dependent on community needs and should be coordinated with Barbara. **Shelly** will also inquire about Jan. 12 opportunities when discussing Dec 8 meeting with Barbara.

TAC List Status

- Dan sent a draft list:
  - Darrin Lane (Linn Co)
  - Barbara Castillo (Millersburg)
  - Don Driscoll (Millersburg)
  - Janelle Booth (Millersburg-Engineering)
  - Millersburg Planning Commission member (to be designated by the city)
  - Theresa Conley (Albany Area MPO)
  - Dan Fricke (ODOT)
  - Shelly Alexander (David Evans Associates, Inc.)
- PMT agreed that the list looked good and covered the needed participants
- Don will enlist 1 PC member during the PC/CC meetings 11/10

Goals and Objectives

- PMT was asked to review the existing comprehensive plan goals/policies (attached to meeting invite) and provide feedback (via Basecamp) regarding goals/policies they really want to keep or new community elements that are being discussed and should be included by 11/16.
- The input will feed into the draft TM #4-Goals and Objectives
- The PMT inquired about typical Goals and Objectives that are considered for TSPs. Shelly mentioned Cost Effectiveness, Safety, Connectivity, and Complete Streets. She then pointed the group to the 1st chapters of the sample TSPs discussed later in the PMT conference call (e.g., Coburg, Toledo) for a visual representation of what has been included elsewhere.
- Don noted that freight (especially trucks) should be accounted for in the goals/objectives/policy. The freight community is considered a stakeholder.

Transportation System Plans

- The group discussed the four sample TSP formats that Shelly uploaded to Basecamp.
- Darrin and Janelle really like the Coburg TSP example because it is simple, short and citizens can understand.
- In comparison to Toledo the perception is that Coburg is more user-friendly.
- Don likes the idea of a smaller, more user-friendly document
- Garth noted that when proceeding with a smaller document the supporting material is located elsewhere (likely and appendix or separate volume) and can occasionally be miss placed or not kept with the smaller document. His not was just to make sure that all PMT and City administrators understand that there are two documents that work in tandem.

Other Items to discuss

- Darrin and Janelle both mentioned that reminders are welcome when it comes close to a date that something is needed and input has not been received.

Adjourn

Action items:

10. **Shelly** to post draft website link
11. **Shelly** to call Don for his comments on TM #1
12. **Shelly** to coordinate with DKS to determine a due date for the draft regionally significant projects
13. **Shelly** to prepare a detailed schedule to send to the PMT for review
14. **Darrin** will call Barbara to give her a heads up
15. **Shelly** will follow up with Barbara to provide specifics

16. **Don** will enlist 1 PC member during the PC/CC meetings 11/10
17. **Shelly** will also inquire about Jan. 12 opportunities when discussing Dec 8 meeting with Barbara

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #1 - DECEMBER 8, 2015
6:00-7:00PM
AGENDA

Welcome and Introductions (5 min)	Dan Fricke, ODOT Shelly Alexander, DEA
Project Overview and Schedule (15 min) Purpose Process Public Involvement (TM #1) Other Area work	Shelly Alexander, DEA
Work Completed (20 min) Website (*web address*: millersburgtsp.com) Overview TM#1: Public Stakeholder Involvement Strategy Overview TM#2: Plan Review Overview TM#3: Regulatory Review PMT insight	Shelly Alexander, DEA Don Driscoll, City of Millersburg All
Goals and Objectives, TM #4 (15 min) Sample Goal/Objective Categories Existing Comp Plan transportation goal categories Current themes, goals, and/or policies to capture the community's vision for City transportation system?	Shelly Alexander, DEA Don Driscoll, City of Millersburg Janelle Booth, City Engineer
Questions? (5 min)	All
Adjourn	

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #1 - DECEMBER 8, 2015

6:00-7:00PM

MEETING NOTES

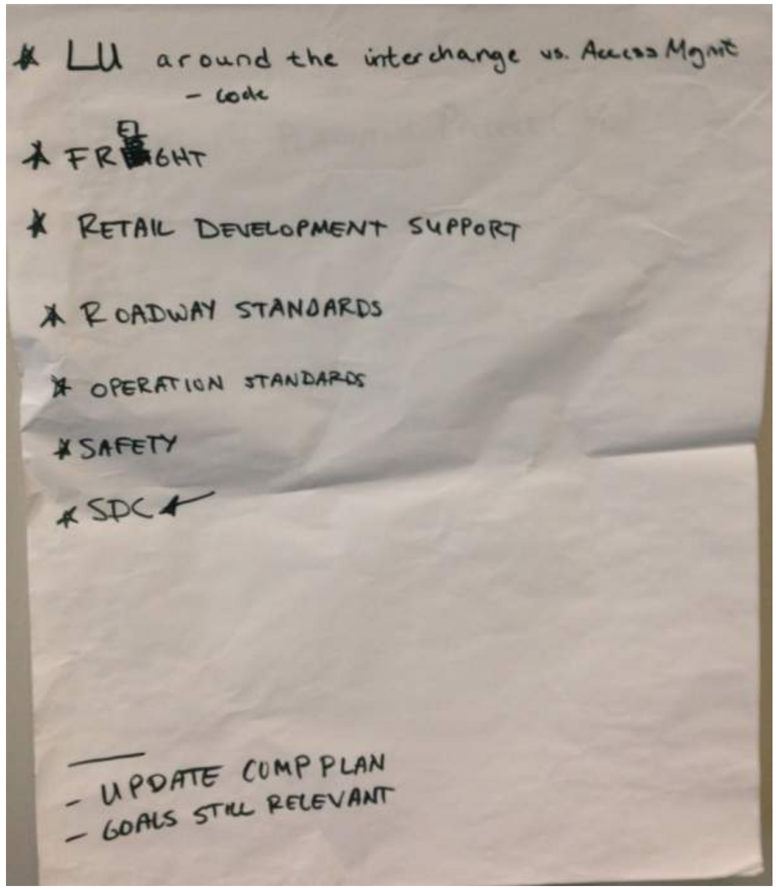
INVITEES:

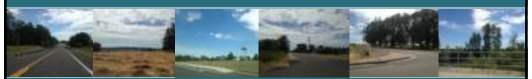
- City Councilors: Scott Cowan, Darrin Lane, Jim Lepin, Lisa Metz-Dittmer, Clayton Wood (Mayor)
- Planning Commission Members: Skylar Bailey, Barbara Castillo (City Administrator), Don Driscoll (City Planner), Pat Edwards, Connie Lepin, Dan Nixon, Anne Peltier, Ryan Penning, Ed Perlenfein, Dave Post, Forrest Reid (City Attorney), Steve Vogler
- Technical Advisory Committee Members: Shelly Alexander (David Evans and Associates, Inc. [Consultant] PM), Janelle Booth, Barbara Castillo, Theresa Conley (Albany Area MPO), Don Driscoll, Dan Fricke (ODOT PM), Darrin Lane (Linn Co),

WELCOME AND INTRODUCTIONS

Dan Fricke, ODOT Project Manager, started the meeting off

PROJECT OVERVIEW AND SCHEDULE
WORK COMPLETED
GOALS AND OBJECTIVES, TM #4
QUESTIONS?





City of Millersburg
Transportation System Plan

MillersburgTSP

Joint Session:
- **Planning Commission**
- **City Council**
- **Technical Advisory Committee**

Meeting #1 – December 8, 2015

DAVID EVANS AND ASSOCIATES INC.

Oregon Department of Transportation

Plan Agenda

1. Welcome and Introductions (5 min)
2. Project Overview (15 min)
3. Work Completed (20 min)
4. Goals and Objectives (10 min)
5. Questions (10 min.)

TSP Purpose

- Identify impacts of growth
- Develop/refine multimodal design guidelines
- Identify multimodal transportation planning needs for the 25-year planning horizon (2040)
- Identify transportation funding plan
- Identify policy and transportation implementing ordinance

TSP Planning Process

Tasks	Public Involvement
COMPLETED	
Public Involvement	PC, CC, TAC Meeting #1 (Dec)
Background Plans and Policy Review	PC, CC, TAC Meeting #2 (January)
FUTURE WORK	
System Gaps and Deficiencies	Public Meeting #1 (February)
Solutions Development and Evaluation	PC, CC, TAC Meeting #3 (April)
Draft Transportation System Plan and Implementing Code and Policy	PC, CC, TAC Meeting #4 (June)
	Public Meeting #2 (June)
Final TSP Report	Local Agency Meetings (City/ODOT Led)

Public Involvement Process

Technical Advisory Committee (TAC): *Provides technical and policy guidance and will serve as the primary body making recommendations about the project. Composed primarily of local jurisdiction and ODOT staff.*

Community Meetings/Public Open Houses: *Intended as informational exchanges where staff and consultant present and explain project information and the general public can provide input and comment on issues and concerns of importance to them.*

Millersburg TSP PMT

Joint Planning Commission/City Council (PC/CC): *Serve as liaisons to the community and offer recommendations to the TAC. Composed of official appointed and elected representatives of Millersburg, particularly on planning issues.*

Local Agency Meeting: *Provides additional opportunities for citizen and business input during the adoption process. (These will be led by local jurisdiction staff and ODOT.)*

TSP Planning Area

Work Completed-website

- Website: www.millersburgtsp.com
- Includes:
  - Description of the project
  - Schedule of events
  - Draft materials (technical memorandum, maps, graphics)
  - Area for public to provide comments

Public Stakeholder Involvement Strategy (TM #1)

- Guide stakeholder and public involvement
- Describes objectives and activities that the City, consultant team, and other agency staff will implement to ensure that interested parties have adequate opportunities to provide meaningful input to the TSP
- Committees (4): Composition, responsibilities
- Assessment of Title VI and Environmental Justice populations
- Status update

Plan Review (TM #2)

- Review of state, regional, and local transportation and land use regulations, plans, and policies as well as planned transportation improvement projects that are applicable to transportation planning in the City of Millersburg, Oregon
- Purpose: to build upon prior planning efforts, provide the planning context for the TSP, and ensure that the development of the Millersburg TSP is compatible and compliant with applicable regulations, plans, and policies
- Status update

Regulatory Review (TM #3)

- Reviews/Identifies regulatory gaps in the City Comprehensive Plan (January 1984) and Land Use Development Code (2006, amended 2002) that need to be updated to bring them into compliance with:
  - Statewide Planning Goal 12 (Transportation);
  - Transportation Planning Rule (TPR) (OAR 660-012);
  - Oregon Transportation Plan (OTP); and
  - Anticipated TSP policies.
- Updates along the way some additions for compliance with MPO RTP: parking plan, VMT (alternative mode shares: walk, bike, transit)
- Status update

Millersburg Comprehensive Plan Transportation Element (1984)

Goals:

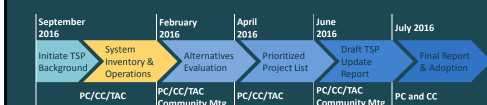
- To provide a transportation policy plan as a guide for a systematic network of traffic ways related to the patterns and needs of community activity.
- To ensure the development of a balanced transportation system for the safe, convenient and efficient movement of people and goods.

General Policies:

1. Seek to develop a balance d transportation system which includes all transportation modes appropriate for the City's needs.
2. Proposals shall be reviewed to determine whether they enhance or deter the overall growth policy of the Urban Growth Area.
3. Transportation proposals shall be reviewed to endure adverse social, economic, energy and environmental impacts and costs are minimized.
4. Cooperate with other units of government in planning and developing transportation facilities.
5. Future projects shall contribute to the emergence of a systematic circulation network.
6. Encourage multiple uses of transportation rights-of-way.

Next Steps

- Goals & Objectives, Existing and Future Conditions
  - Establish Goals & Objectives, Evaluation Criteria
  - Infrastructure Inventory
  - Existing Conditions
  - Future Baseline Conditions
- Next meeting (January 2016)
  - Review Goals and Objectives, Evaluation Criteria
  - Identify concerns with infrastructure and operation not already captured



MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #3 - DECEMBER 14, 2015

AGENDA

Roll Call (2 min)
Shelly Alexander, DEA

Draft Deliverables update (5 min)
Shelly Alexander, DEA

- TM #1: PSIS (v2 12/1), Don comments?
- TM #2: Draft Plan Review (11/9), comments from Dan
- TM #3: Draft Regulatory Review (11/25), no comments
- TM #4 held for PC/CC/TAC/PMT input
- TM #5 and 6 Existing and Future Baseline in process
- List/TOC for deliverables requested from Don

Schedule (10 min)
Shelly Alexander, DEA

- Submitted November 19, 2015, comments
- Upcoming PC/CC/TAC January 12

Planning Commission/City Council/TAC recap (15 min)

- Lessons learned, how to better use time

PMT

Goals and Objectives (TM #4) (10 min)

- Shelly will send samples: Albany MPO, Coburg, Toledo
- Send Draft TM#4 to PMT for review concurrent with samples?

Shelly Alexander, DEA

All

Other Items to Discuss (5 min)
All

Adjourn

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #3 - DECEMBER 14, 2015

MEETING NOTES

INTRODUCTION

- Participants included:
  - Darrin Lane, Linn County
  - Shelly Alexander, DEA Project Consultant PM
- Unable to participate
  - Barbara Castillo, City of Millersburg
  - Garth Appanaitis, DKS Prime Consultant PM
  - Dan Fricke, ODOT
  - Don Driscoll, City of Millersburg
  - Janelle Booth, City Engineer/CH2M

DRAFT DELIVERABLES

- Shelly relayed that Barbara is sending copies of TMs #1-3 to send to the PC/CC.
- Shelly provided an update on TM #4. It has been delayed as we wait for feedback from PMT, PC, and CC. Darrin suggested that sometimes no comment is OK, not a case of ignoring the need to review.
- Off-line Don suggested that we have a “key” of deliverables so people can make sure they have the most recent version. Additionally, he suggested that the deliverables include the name, revision #, and date. **Shelly** will work to get those features incorporated on future deliverables.

SCHEDULE

- Submitted the draft project schedule on November 19. There have been no comments. **Shelly/DEA** will finalize the schedule and post soon.
- **Shelly** is coordinating January 12, 2016 PC/CC meeting schedule and agenda with Barbara.

PLANNING COMMISSION/CITY COUNCIL/TAC MEETING RECAP

- Lessons learned from the Dec 8 Joint meeting:
  - May have been helpful to arrive a little earlier to prep the participants
  - Darrin will talk to CC individually
  - Strategic Planning: Establishing community goals – led by Jim Lepin
- PC/CC/TAC comments – no comments is OK (per Darrin), comment deadline 12/24 per Dec 8 joint meeting
- Looking for CIP to send to DKS. **Darrin** is working on an update. He said there is a SDC system but it is not comprehensive. He’s in the process of updating that information. Only 2-3 roads in Millersburg that are eligible for MPO Federal funding.

GOALS AND OBJECTIVES

- Shelly has held off posting TM #4 any comments from PC/CC/TAC and to look at consistency with regional work.

OTHER ITEMS TO DISCUSS

- Darrin suggested caution with language in the plan (e.g., sustainability, roadway widening). For example, roadway widening is are for everyone freight, combines, mail, bicycles, pedestrians, etc.

Adjourn

Action items:

18. **Shelly** to finalize (and post) schedule
19. **Shelly**/DEA to incorporate deliverable name, revision #, and date to future deliverables.
20. **Shelly** is coordinating Jan 12 PC/CC meeting and agenda with Barbara.
21. **Remaining from last PMT:** **Shelly** to call Don for his comments on TM #1
22. **Remaining from last PMT:** **Don** will enlist 1 PC member during the PC/CC meeting for TAC

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #4 - JANUARY 11, 2016

AGENDA

Roll Call (2 min) — Shelly Alexander, DEA

Draft Deliverables update (5 min) — Shelly Alexander, DEA

- Draft TM #4 submitted for PMT review 1/8/16
- Draft TMs #5 and 6 Existing and Future Baseline-in process
- List/TOC for deliverables requested from Don-status update

Schedule (5 min) — Shelly Alexander, DEA

- Upcoming PC/CC/TAC January 12-postponed to February 9

Goals and Objectives (TM #4) (20 min)

- Shelly sent samples: Albany MPO, Coburg, Toledo
- Draft TM#4 to PMT-comments by 1/15 — PMT

Project List- regional significance, share with AAMPO work (5 min) — Shelly Alexander, DEA

- Still need description (extents and scope), status of bike/ped projects

Other Items to Discuss (5 min) — All

Adjourn

Attachments: Project List (TSP Streets.pdf)

City of Millersburg - Project List - Streets

Project List for TSP Update

Revised: 12/21/2015

Project Name	Project Cost
Woods Road Reconstruction Phase 1	$ 750,000
Woods Road Reconstruction Phase 2	$ 750,000
Zuhlke Extension East	$ 500,000
Zuhlke Extension West	$ 750,000
Conser Realignment	$ 1,750,000
Alexander Drive Crosswalk	$ 20,000
Old Salem Road Sidewalk and Bicycle Improvements	$ 375,000
Morning Star Road Reconstruction - Urban Conversion	$ 650,000
Interstate 5 Tank Farm Interchange	$ 45,000,000
Conser Sidewalk and Bicycle Improvements	$ 250,000
Total:	$ 50,795,000.00

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #4 - JANUARY 11, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
  - Dan Fricke, ODOT
  - Janelle Booth, City Engineer/CH2M
  - Shelly Alexander, DEA Project Consultant PM
- Unable to participate
  - Darrin Lane, Linn County
  - Barbara Castillo, City of Millersburg
  - Garth Appanaitis, DKS Prime Consultant PM
  - Don Driscoll, City of Millersburg

DRAFT DELIVERABLES

- Shelly relayed that Draft TM #4 (Goals and Objectives) was posted last Friday (1/8). This is an important deliverable to review as it will help us better understand where Millersburg wants to be in 20 years and help shape our evaluation process later on. Comments are need back by this Friday, 1/15.
- **Shelly** will send out some additional topics for consideration in TM #4: VMT, Complete Streets, and Vision Zero. These are newer concepts for consideration. This is a good opportunity to be proactive instead of reactive in a couple of years.
- Shelly provided an update on TMs #5 and 6, which is they are in progress. TM #5 (Existing Conditions) is the largest TM and has been drafted, and reviewed; we are currently confirming a couple of areas. This should be out this week. TM #6 (Future Baseline Conditions) will follow.

SCHEDULE

- **Shelly** is coordinating February 9, 2016 PC/CC meeting schedule and agenda with Barbara.

GOALS AND OBJECTIVES (TM #4)

- Shelly has posted TM #4 for PMT review. The draft considers consistency with the Comp Plan as well as with the regional work (AAMPO). **PMT members** please review and provide comment by 1/15.

PROJECT LIST – REGIONAL SIGNIFICANCE, SHARE WITH AAMPO WORK

- Darrin used the SDC list to prepare a list of regionally significant projects for inclusion in the AAMPO.
- Need to provide additional information (description and confirm area bike/ped projects) **– Janelle, Darrin, and Don**

OTHER ITEMS TO DISCUSS

- None

ADJOURN

ACTION ITEMS:

23. **Shelly** will send out some additional topics for consideration in TM #4: VMT, Complete Streets, and Vision Zero.
24. **Shelly** is coordinating Feb 9 PC/CC meeting and agenda with Barbara.
25. **PMT members** please review TM #4 and provide comment by 1/15.
26. **Janelle, Darrin, and Don** provide additional information (description and confirm area bike/ped projects) for project list by 1/18
27. **Remaining from last PMT:** **Shelly** to call Don for his comments on TM #1
28. **Remaining from last PMT:** **Don** will enlist 1 PC member during the PC/CC meeting for TAC

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #5 - FEBRUARY 8, 2016

AGENDA

Roll Call (2 min) — Shelly Alexander, DEA

Draft Deliverables update (5 min) — Shelly Alexander, DEA

- Draft TM #4 Goals and Objectives submitted for Joint PC/CC review 2/2/16
- Draft TM #5 Existing Conditions- submitted for Joint PC/CC review 2/2/16
- Draft TM # 6 Future Baseline- submitted for Joint PC/CC review 2/2/16
- Comment log generated, will add TMs 1-3 as well
- List/TOC for deliverables requested from Don-status update
- Website updated with TMs 1-6

Schedule (5 min) — Shelly Alexander, DEA

- Upcoming PC/CC/TAC February 9
- Upcoming Community Meeting – DISCUSS DATE Options

Project List (10 min) – Alternative Development Considerations beyond improvement list — Shelly Alexander, DEA

Other Items to Discuss (5 min)

Adjourn — All

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #5 - FEBRUARY 8, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
  - o Dan Fricke, ODOT
  - o Janelle Booth, City Engineer/CH2M
  - o Shelly Alexander, DEA Project Consultant PM
  - o Darrin Lane, Linn County
- Unable to participate
  - o Barbara Castillo, City of Millersburg
  - o Garth Appanaitis, DKS Prime Consultant PM
  - o Don Driscoll, City of Millersburg

DRAFT DELIVERABLES

- Shelly relayed that Draft TM #4 (Goals and Objectives) was posted last Friday (1/8). This is an important deliverable to review as it will help us better understand where Millersburg wants to be in 20 years and help shape our evaluation process later on. Comments are need back by this Friday, 1/15.
- **Shelly** will send out some additional topics for consideration in TM #4: VMT, Complete Streets, and Vision Zero. These are newer concepts for consideration. This is a good opportunity to be proactive instead of reactive in a couple of years.
- Shelly provided an update on TMs #5 and 6, which is they are in progress. TM #5 (Existing Conditions) is the largest TM and has been drafted, and reviewed; we are currently confirming a couple of areas. This should be out this week. TM #6 (Future Baseline Conditions) will follow.

SCHEDULE

- **Shelly** is coordinating February 9, 2016 PC/CC meeting schedule and agenda with Barbara.

GOALS AND OBJECTIVES (TM #4)

- Shelly has posted TM #4 for PMT review. The draft considers consistency with the Comp Plan as well as with the regional work (AAMPO). **PMT members** please review and provide comment by 1/15.

PROJECT LIST – REGIONAL SIGNIFICANCE, SHARE WITH AAMPO WORK

- Darrin used the SDC list to prepare a list of regionally significant projects for inclusion in the AAMPO.
- Need to provide additional information (description and confirm area bike/ped projects) **– Janelle, Darrin, and Don**

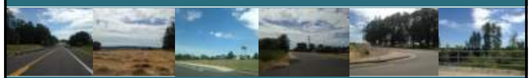
OTHER ITEMS TO DISCUSS

- None

ADJOURN

ACTION ITEMS:

29. **Shelly** will send out some additional topics for consideration in TM #4: VMT, Complete Streets, and Vision Zero.
30. **Shelly** is coordinating Feb 9 PC/CC meeting and agenda with Barbara.
31. **PMT members** please review TM #4 and provide comment by 1/15.
32. **Janelle, Darrin, and Don** provide additional information (description and confirm area bike/ped projects) for project list by 1/18
33. **Remaining from last PMT:** **Shelly** to call Don for his comments on TM #1
34. **Remaining from last PMT:** **Don** will enlist 1 PC member during the PC/CC meeting for TAC



City of Millersburg
Transportation System Plan

MillersburgTSP

Joint Session:
- Planning Commission
- City Council
- Technical Advisory Committee

Meeting #2 – February 9, 2016

Agenda

1. Project Overview
   - Purpose
   - Process
2. Work Completed
   - Goals and Objectives
   - Transportation System Inventory
   - Existing and Future Conditions
3. Next Steps

TSP Purpose

- Identify impacts of growth
- Develop/refine multimodal design guidelines
- Identify multimodal transportation planning needs for the 25-year planning horizon (2040)
- Identify transportation funding plan
- Identify policy and transportation implementing ordinance

Role of Stakeholders

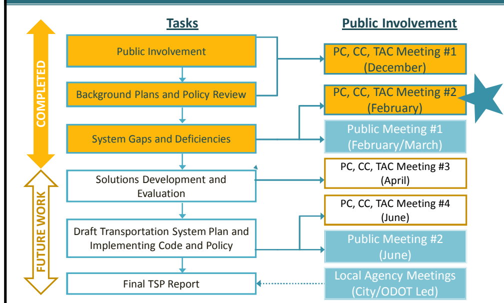
Technical Advisory Committee (TAC)

- *Provides technical and policy guidance and will serve as the primary body making recommendations about the project. Composed primarily of local jurisdiction and ODOT staff.*

Planning Commission / City Council

- *Provides stakeholder input and offers recommendations to the TAC.*

TSP Planning Process



TSP Planning Area

Millersburg Comprehensive Plan Transportation Element (1984)

Goals:

- To provide a transportation policy plan as a guide for a **systematic network** of traffic ways related to the **patterns and needs of community activity**.
- To ensure the development of a balanced transportation system for the **safe**, **convenient** and **efficient** movement of people and goods.

General Policies:

1. Seek to develop a balanced transportation system which **includes all transportation modes** appropriate for the City's needs.
2. Proposals shall be reviewed to determine whether they enhance or deter the overall **growth policy** of the Urban Growth Area.
3. Transportation proposals shall be reviewed to endure adverse social, economic, energy and environmental impacts and **costs are minimized**.
4. **Cooperate** with other units of government in planning and developing transportation facilities.
5. Future projects shall contribute to the emergence of a **systematic circulation network**.
6. **Encourage multiple uses** of transportation rights-of-way.

Proposed TSP Goals & Objectives

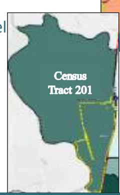
Goal 1	Increase the **safety and security** for all travel modes.
Goal 2	Enhance **connectivity** for all travel modes.
Goal 3	Promote **economic development** and preserve the mobility of existing freight routes to ensure the efficient movement of goods.
Goal 4	Provide for a balanced, **multimodal** transportation system that meets existing and future needs.
Goal 5	Plan and design a transportation system to enhance **livability** and support positive health impacts.
Goal 6	Demonstrate **responsible stewardship of funds and resources**.
Goal 7	Coordinate transportation and land use decision-making to foster development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.
Goal 8	Provide for a **diversified transportation system** that ensures mobility for all.
Goal 9	Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.

Existing Conditions – Inventory

- Purpose: Understand existing conditions, problems, and deficiencies for all travel modes
- Review of facilities
- Focus on major roadways based on functional classification:
  - Arterial *(serve as primary routes for travel between major urban activity centers and across portions of a city or region)*
  - Collector *(gather traffic from neighborhoods but also serve abutting lands and local access needs of neighborhoods)*

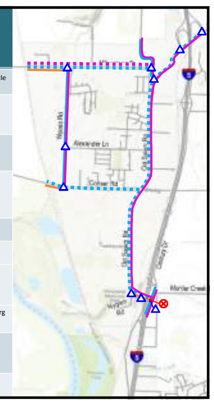
Existing & Future Conditions – Traffic Operations

- Based off of actual traffic counts (Year 2015)
- Future analysis (Year 2040)
  - 2040 analysis year consistent with region
  - Based on travel demand forecasting model: Corvallis, Albany, Lebanon Model (CALM)
    - Uses socioeconomic data (e.g., households and employment)
    - Transportation Analysis Zones (TAZ), City Limits and Census tracts have different boundaries, but still regionally consistent
  - Future roadway network based on funded improvements



Deficiencies

Cross-Sections	Sub-standard cross-sections per functional classification; generally due to lack of bicycle facilities or paved curb-to-curb width.	
Pavement Conditions (Fair or Better)	• Old Salem Road: East of Nygren Road • Millersburg Road: West of Woods Road • Conser Road: West of Woods Road	
Sidewalks	**No Sidewalks:** • Morningstar Road • Woods Road • Century Drive	**Limited/Discontinuous Sidewalks:** • Old Salem Road • Millersburg Drive • Conser Road
Bicycle Lanes	**No Bicycle Lanes:** • Old Salem Road • Morningstar Road • Woods Road • Century Drive	**Limited/Discontinuous Bicycle Lanes:** • Millersburg Drive
Safe Routes to School	Limited pedestrian connections and barriers (highways) between Millersburg and the closest elementary, middle and high school.	
Pedestrian Ramps	• None of the intersections in Millersburg have marked cross-walks Study intersections without pedestrian ramps: • Morningstar Rd at Millersburg Dr • Woods Rd at Alexander Ln • Woods Rd at Conser Rd • Old Salem Rd at Nygren Rd	• Old Salem Rd at NE Old Salem Rd • Old Salem Rd at Century Dr • All I-5 ramp terminals
Lack of Transit Facilities	There is no regular public transportation/transit available within the City of Millersburg	
Traffic Operations	• The City does not currently have an operational/mobility standard • Intersections expected to exceed capacity in 2040: - Old Salem Road at NE Old Salem Road - I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164)	
Crash History	• Old Salem Road at Century Dr has a crash rate exceeding critical crash rate • 13 Fixed object collisions (46% of total crashes)	



Next Steps

- Community Event #1 (February/March)
- Alternatives Evaluation
  - Improvements to address deficiencies
    - Continue to upgrade to urban standards
    - Improve sidewalk and bicycle system
  - Network extensions to serve future development
    - Key roadway connections within the existing Urban Growth Boundary
- Next PC/CC Meeting (April)
  - Review alternatives analysis
  - Identify recommended improvements

TSP Background → System Inventory & Operations → **Alternatives Evaluation** → Prioritized Project List → Draft TSP Report → Final Report & Adoption

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #6 – MARCH 14, 2016

AGENDA

Roll Call (2 min)

Shelly Alexander, DEA

Draft Deliverables update (15 min)

Shelly Alexander, DEA
Angela Rogge, DEA
PMT discussion

- Comment log generated for TMs 1-6, located on Basecamp
- List/TOC for deliverables requested from Don-sent
- Revised schedule
- **G&O recap, comments (TPAU, Strategic Plan)**

Schedule (5 min)

Shelly Alexander, DEA

- March 29th, 5-7 PM: Open House #1
- April 12: PMT receives copy of Tech Memos #8 & #9 for review
- April 19: PMT receives copy of Tech Memo #7 for review
- **April 26 deadline**: PMT comments due for Tech Memos 7,8 and 9 (allows consultant time to incorporate comments and send revised draft to PC/CC a week in advance of the May PC/CC Workshop #3)

Open House format (10 min)

Shelly Alexander, DEA
Angela Rogge, DEA
PMT discussion

- Map of Area Projects (RTP, Co TSP, City TSP, Strategic Plan
- TSP 101 – What is it? Why?
- Goals and Objectives
- Deficiency summary
- Big Map + Sticky notes to highlight areas of concern
- Small map with deficiencies highlighted as shown to PC/CC/TAC

Needs for upcoming deliverables (5 min)

Shelly Alexander, DEA
Angela Rogge, DEA

- Funding (City and State)

Next Steps (3 min)

Shelly Alexander, DEA

- TM #7: Alternative Development Considerations
- TM #8: Finance Program
- TM #9: Transportation Standards

Other Items to Discuss (5 min)	Shelly Alexander, DEA
Adjourn	Shelly Alexander, DEA All

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #6 – MARCH 14, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
  - Dan Fricke, ODOT
  - Angela Rogge, DEA Project Consultant Deputy PM
- Unable to participate
  - Shelly Alexander, DEA Project Consultant PM
  - Barbara Castillo, City of Millersburg
  - Garth Appanaitis, DKS Prime Consultant PM
  - Don Driscoll, City of Millersburg
  - Darrin Lane, Linn County
  - Janelle Booth, City Engineer/CH2M

DRAFT DELIVERABLES UPDATE

- Angela explained that the comment logs for the Tech Memos are available on Basecamp (or by request)
- Tech Memos 1-6 will be finalized after the March 29th Open House
  - Region 2 Traffic's additional comments (Dorothy Upton) will be addressed in the final deliverable
  - Regarding the population forecast from the CALM model, the population information will not be included in Tech Memo #6 as it is not critical to the traffic analysis and causes unnecessary confusion
- The revised schedule is available on Basecamp (or by request) and reflects shifting the schedule out a month due to the first Open House and to accommodate the City's request to coordinate with the Strategic Plan. **Important dates for the PMT**:
  - March 29th, 5-7 PM: Open House #1
  - April 12: PMT receives copy of Tech Memos #8 & #9 for review
  - April 19: PMT receives copy of Tech Memo #7 for review
  - **April 26 deadline**: PMT comments due for Tech Memos 7, 8 and 9 (allows consultant time to incorporate comments and send revised draft to PC/CC a week in advance of the May PC/CC Workshop #3)
- Angela and Dan reviewed the Goals & Objectives and how they align with the City's draft goals from the Strategic Plan; generally the TSP and Strategic Plan are in alignment with the exception of two goals:
  - (M40a) Bridge spanning the Willamette River to more directly connect Millersburg with Route 99W – **DEA's comment is that this project would be outside the scope of the TSP, but supports the study of this project at a regional level.**
  - (39) A community providing public transportation from nearby cities, i.e., Jefferson and Albany – **DEA's comment is that the TSP goals supports an intent to work towards establishing public transportation in coordination with Millersburg's regional planning partners.**

Schedule

- Discussed previously in update of Draft Deliverables

Open House Format

- Angela and Dan discussed the potential attendance of the Open House and would expect to at minimum see Planning Commission and City Council members attend
- **Barbara** is coordinating outreach for the Open House and **Angela** will post an announcement on the Millersburg TSP website (millersburgtsp.com)
- Format:
    - **Shelly** will guide visitors through the background of the TSP, other regional projects and the Goals and Objectives
    - **Angela** will facilitate a brainstorming station to solicit feedback from the community on where they see opportunities for improving the transportation system (bike/ped, vehicular, safety, etc.) This station will utilize a large plotted map of the city and a smaller map will be available that displays where the Consultant team identified deficiencies.

Needs for Upcoming Deliverables

- The next deliverable will be Tech Memo #8: Finance Program
    - **Angela** will contact Terry Cole (ODOT) regarding future funding forecast
    - **Angela** will contact **Barbara** to discuss Millersburg's funding history:
        - How have State Highway Funds been used? (Capital Improvements vs. Maintenance/Preservations)
        - Have any recent roadway improvements involved state transportation grant support?
        - Does the city have a history of using bonds as a funding mechanism for transportation projects?
        - What was the level of local funding support/matching to the three recent SDC improvements (Millersburg Dr, Alexander Ln, Knox Butte)?

Other Items to Discuss

- None

Adjourn

Action items:

35. **Shelly** will send out draft Open House materials for review 3/22/16
36. **Angela** will contact Terry Cole and **Barbara** regarding information needed for Tech Memo #8

MillersburgTSP
Transportation System Plan

OPEN HOUSE

TUESDAY, MARCH 29, 2016

5:00 PM – 7:00 PM

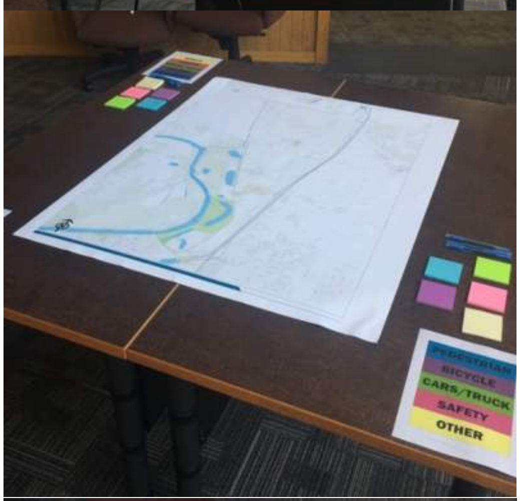
CITY HALL

LEARN MORE ABOUT THE MILLERSBURG TRANSPORTATION SYSTEM PLAN AND LET THE PROJECT TEAM KNOW YOUR IDEAS!

MILLERSBURG TSP

OPEN HOUSE #1 – MARCH 29, 2016

EVENT NOTES



ATTENDANCE: 13 persons (7 members of the community and 6 project team members), per sign-in sheet

FORMAT:

- **Shelly** guided visitors through the background of the TSP, other regional projects and the Goals and Objectives
- **Angela** facilitated a brainstorming station to solicit feedback from the community on where they see opportunities for improving the transportation system (bike/ped, vehicular, safety, etc.)

FINDINGS:

- Several people took the handout with them that showed how the draft Strategic Plan aligned with the TSP goals
- Generally, most of the feedback focused on improving/preserving pedestrian connectivity and the character of the community
- **Safety:**
  - Speeds of southbound right-turning vehicles from Century Dr onto Old Salem Road are a concern
  - Sight distance concern for sedan-like vehicles turning onto Old Salem Road between Western Way and Clearwater Dr
  - Provide clarity on speed limit on Conser Rd and Woods Rd
- **Bicycle/Pedestrian:**
  - Would like wider shoulder/place to walk on Woods Rd
  - Would like to be able to access Simpson Park (property west of RR and south of Conser Rd
  - Connectivity with trails/multiuse path within the neighborhoods south of Alexander Ln and north of Conser Rd
- **Vehicular:**
  - Account for new developments in north part of town
  - Is there a way to mitigate traffic passing through Millersburg when I-5 gets congested?
  - Update map with new street names
  - Would additional turn storage be beneficial at Nygren/Old Salem Rd
- **Other**
  - City Gateway treatments?
  - Improve aesthetics along Old Salem Rd

Deficiencies

Cross-Sections	Sub-standard cross-sections per functional classification; generally due to lack of bicycle facilities or paved curb-to-curb width.	
Pavement Conditions (Fair or Better)	• Old Salem Road: East of Nygren Road • Millersburg Road: West of Woods Road • Conser Road: West of Woods Road	
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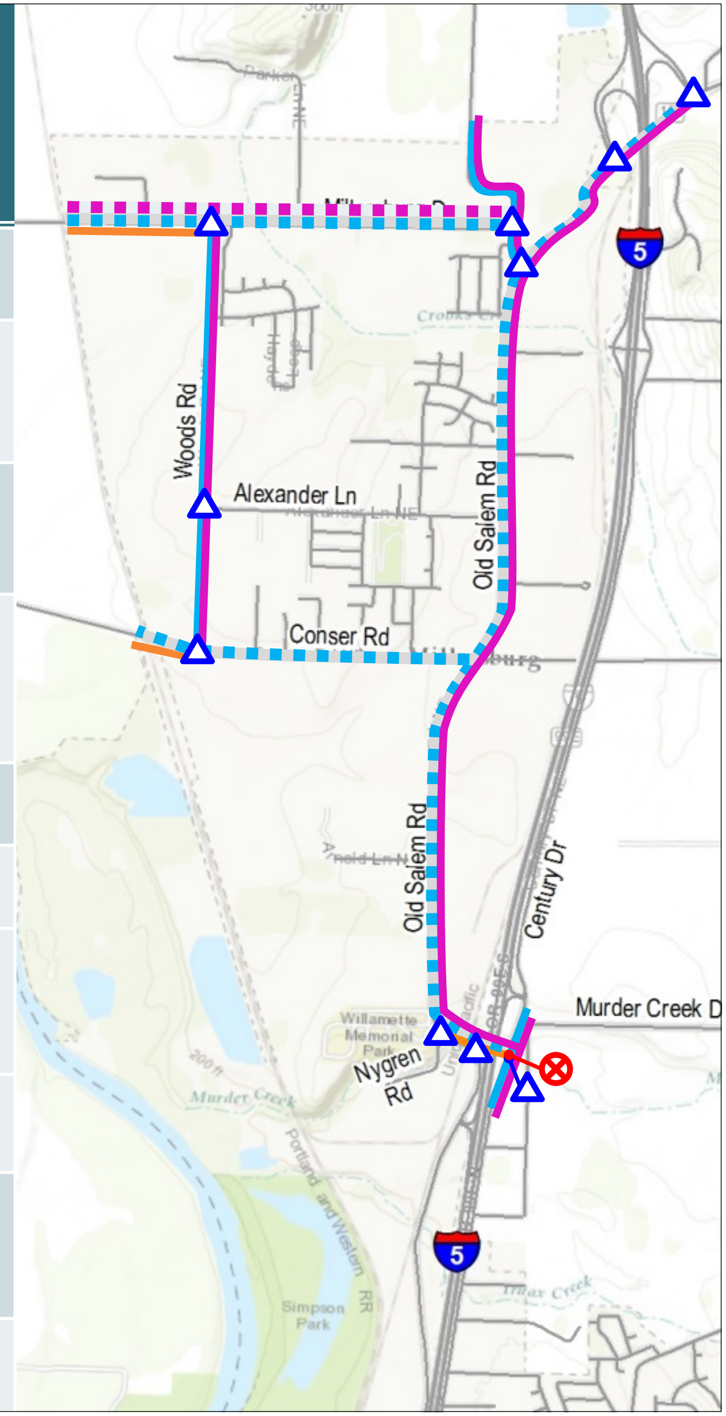
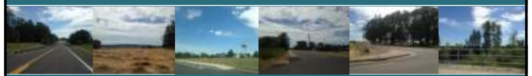


City of Millersburg

Transportation System Plan

Welcome to the Open House!



Millersburg TSP

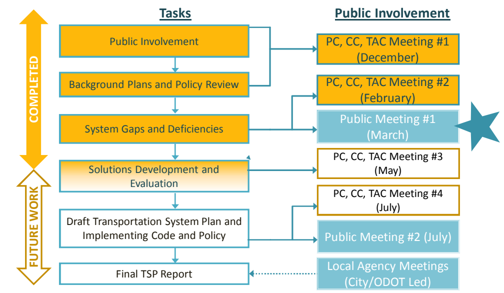
DAVID EVANS AND ASSOCIATES INC.

Oregon Department of Transportation

TSP Purpose

- Identify impacts of growth
- Develop/refine multimodal design guidelines
- Identify multimodal transportation planning needs for the 25-year planning horizon (2040)
- Identify transportation funding plan
- Identify policy and transportation implementing ordinance

TSP Planning Process



TSP Planning Area

Millersburg Comprehensive Plan Transportation Element (1984)

Goals:

- To provide a transportation policy plan as a guide for a **systematic network** of traffic ways related to the **patterns and needs of community activity**.
- To ensure the development of a balanced transportation system for the **safe**, **convenient** and **efficient** movement of people and goods.

General Policies:

1. Seek to develop a balanced transportation system which **includes all transportation modes** appropriate for the City's needs.
2. Proposals shall be reviewed to determine whether they enhance or deter the overall **growth policy** of the Urban Growth Area.
3. Transportation proposals shall be reviewed to endure adverse social, economic, energy and environmental impacts and **costs are minimized**.
4. **Cooperate** with other units of government in planning and developing transportation facilities.
5. Future projects shall contribute to the emergence of a **systematic circulation network**.
6. **Encourage multiple uses** of transportation rights-of-way.

Proposed TSP Goals & Objectives

Goal 1	Increase the **safety and security** for all travel modes.
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Goal 6	Demonstrate **responsible stewardship of funds and resources**.
Goal 7	Coordinate transportation and land use decision-making to foster development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.
Goal 8	Provide for a **diversified transportation system** that ensures mobility for all.
Goal 9	Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.

TSP Coordination in the Linn County Area

Coordinate with Linn TSP. Roll up into AAMPO RTP.

Millersburg TSP

Millersburg Transportation System Plan

- **Purpose**: A 20-year Transportation System Plan for the City of Millersburg in compliance with Oregon Transportation Planning Rule (OAR 660-012). The TSP will guide development and management of local and regional roadways and the local multimodal transportation system.
- **Relation to other plans:** The goals and priorities identified will 'roll up into' the AAMPO RTP. Coordination will occur with the Linn County TSP
- **Key Contacts:** Don Driscoll (dond@archasso.com), Darrin Lane (dlane@co.linn.or.us), Shelly Alexander (sma@deainc.com), Garth Appanaitis (gaa@dksassociates.com)

Coordinate with Millersburg TSP. Roll up into AAMPO RTP.

Linn County TSP

Linn County Transportation System Plan

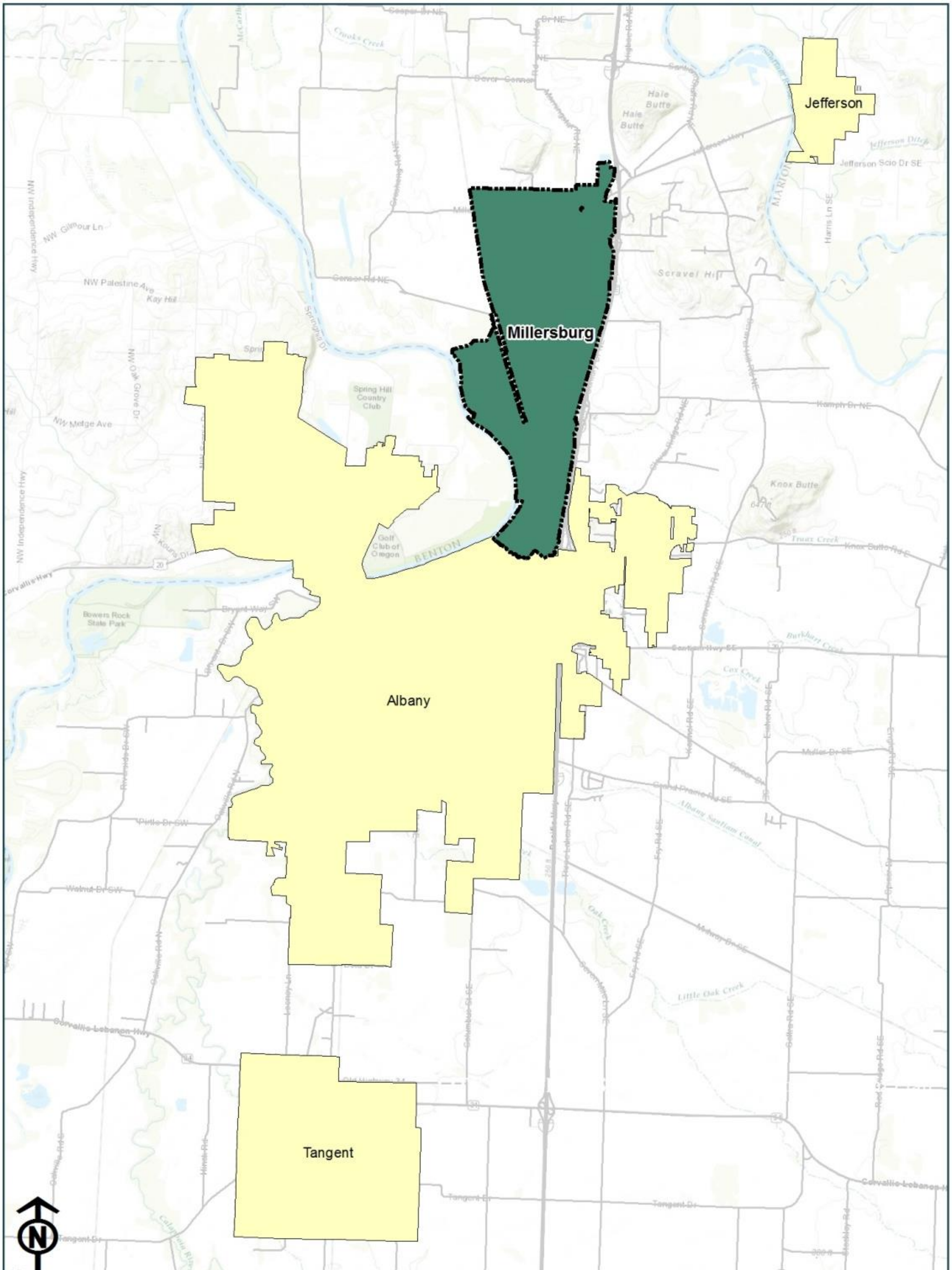
- **Purpose:** A 20-yearTransportation System Plan for Linn County, coordinated with cities' TSPs and in compliance with Oregon Transportation Planning Rule (OAR 660-012). The Linn County TSP will guide development of roadways and multimodal facilities throughout Linn County that are outside of urban growth boundaries or in areas where city and county facilities abut.
- **Relation to other plans**: The goals and priorities identified in the Linn TSP will 'roll up into' the AAMPO RTP. Coordination will occur with the Millersburg TSP
- **Key Contacts**: Chuck Knoll (cknoll@co.linn.or.us), Carl Springer (cds@dksassociates.com), Julie Sosnovske (jxs@dksassociates.com)

Build off of local TSPs to establish a regional vision

Albany Area RTP

Albany Area Regional Transportation Plan

- **Purpose:** The Albany Area RTP will meet federal and state requirements for regional transportation planning for the AAMPO area, inlcuding Albany, Millersburg, Tangent, Jefferson and adjacent areas of Linn, Benton, and Marion Counties.
- **Relation to other plans:** The AAMPO RTP addresses regional needs, focusing on arterial and collector roadways, the public transportation system, and bicycle and pedestrian connections throughout the MPO. The RTP will build off of local plans to create a regional vision.
- **Key Contacts:** Theresa Conley (tconley@ocwcog.org), Chris Maciejewski (csm@dksassociates.com), Garth Appanaitis (gaa@dksassociates.com), Julie Fischer (julie@cogitopartners.com)



Jefferson
Millersburg
Albany
Tangent
N

MillersburgTSP
Transportation System Plan

Millersburg TSP

Public Open House

March 29, 2016

Millersburg City Hall

SIGN IN SHEET

	Name	Phone #	Email
1	Donna Harrington	541-290-8529	donnamae1014@gmail.com
2	Jim Lepin	541-926-8841	jrlepin@gmail.com
3	Ron Anderson	541-760-4267	andersonrb@comcast.net
4	Gary & Deb Keehn	541-979-7978	we3keehns@gmail.com
5	Theresa Conley	924 4548	tconley@ocwcog.org
6	Barbara Castillo	541-928-4523	bcastillo@cityofmillersburg.org
7	Clayton Wood	541-928-4523	
8	Darrin Lane	541-979-4324	dlane@cityofmillersburg.org
9	DAN NIXON	541-619-2334	
	DAN FRICKE		ODOT

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #7 – APRIL 11, 2016

AGENDA

Roll Call (2 min)

Shelly Alexander, DEA

Draft Deliverables update (5 min)

Shelly Alexander, DEA
PMT discussion

- TM 8 (Draft) Finance Program– will send this week
- TM 9 (Draft) Transportation Standards– will send this week
- TM 7 (Draft) Solutions Evaluations– next week
- Draft TSP Outline –late next week, <u>postpone to May 6</u>

Schedule (5 min)

Shelly Alexander, DEA
PMT discussion

- April 12: PMT receives copy of Tech Memos #8 & #9 for review
- April 19: PMT receives copy of Tech Memo #7 for review
- **April 26 deadline**: PMT comments due for Tech Memos 7,8 and 9 (allows consultant time to incorporate comments and send revised draft to PC/CC a week in advance of the May PC/CC Workshop #3)
- April 20 (May 6?): PMT receives copy of TSP outline
- May 10: CC/PC and TAC meeting

March 29 Open House Recap (5 min)

Shelly Alexander, DEA
PMT discussion

- Summary posted last week, attached

Needs for upcoming deliverables (5 min)

Shelly Alexander, DEA
Dan Fricke

- Funding (State)

Next Steps (3 min)

Shelly Alexander, DEA

- TM #7: Alternative Development Considerations
- TM #8: Finance Program
- TM #9: Transportation Standard
- Draft TSP outline

Other Items to Discuss (5 min)

All

- Coordination with other area plans

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #7 – MARCH 11, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
    - Dan Fricke, ODOT
    - Barbara Castillo, City of Millersburg
    - Darrin Lane, Linn County
    - Janelle Booth, City Engineer/CH2M
    - Shelly Alexander, DEA Project Consultant PM
- Unable to participate
    - Angela Rogge, DEA Project Consultant Deputy PM
    - Garth Appanaitis, DKS Prime Consultant PM
    - Don Driscoll, City of Millersburg

DRAFT DELIVERABLES UPDATE

- Shelly mentioned that we are waiting on the State Forecast data to plug into TM 8 and asked the PMT if it would prefer to wait until the data arrived and the document was complete or have it delivered tomorrow with a hole
    - State funding information currently request
    - PMT direction: deliver TM 8 without State forecast
- Shelly mentioned concern about review fatigue and suggested moving the Draft TSP outline to May 6, as it not time critical for the Joint CC/PC & TAC meeting on May 10

SCHEDULE

- Work trips, none known of that would hinder response
    - Darrin will miss May 10 CC/PC & TAC meeting
    - Otherwise, everyone believes they have time to review the drafts and provide comments by the requested time
- Draft TSP Outline discussed previously in update of Draft Deliverables, move to May 6 (instead of April 20 to avoid review fatigue)
- Concerns with May 10 PC/CC&TAC meeting (already 2 items on the agenda)
    - **Shelly** to call Barbara
    - **Shelly** to check schedule to see window around May 10, otherwise June 14 is next meeting (SMA to wrap up by end of week 4/15)

MARCH 29 OPEN HOUSE RECAP

- Open House summary posted last week, also attached to today's meeting agenda
- Shelly mentioned that typically attendance is proportional to the size of the community. The attendance for the Millersburg Open House was as good, in some cases better, than larger communities

- Darrin was a little disappointed by the turnout. He'd like to see 100 people, but thinks that may be unrealistic
- Barbara indicated that she is encouraged to hear that the turnout in Millersburg was good compared to larger communities. She felt like the people "had a say" in the meeting and therefore were invested in the process
- Dan was pleasantly surprised with the Open House turnout. He felt it was better than earlier meetings. Overall the turnout for, and format of, the meeting was generally good

NEEDS FOR UPCOMING DELIVERABLES

- DEA has a request into ODOT for the State funding forecast information

NEXT STEPS

- None, continuing to work on deliverables and prepare for the Joint CC/PC & TAC meeting May 10

OTHER ITEMS TO DISCUSS

- Shelly asked about coordination with other area plans
    - Transit coordination: Dan mentioned that the Albany Area MPO RTP is currently working on a transit element that may be desirable to include in the Millersburg TSP process. He'll share more as the process evolves.
- Barbara had a question regarding invoice approval. Dan shared that it is part of the procurement process to share the invoice with the City since the TSP is a City document
- Shelly shared that earlier she had floated the idea of Complete Streets and Vision Zero for consideration by the PMT. In pulling samples to send as well as receiving feedback from the Joint CC/PC & TAC meeting in February and the Open House in March these two concepts are not well aligned with the community goals. As a result, the PMT is no longer tracking Complete Streets or Vision Zero for the Millersburg TSP process.

ADJOURN

ACTION ITEMS:

37. **Shelly** to call Barbara regarding May 10 Joint Session
38. **Shelly** to check schedule to see window around May 10, otherwise June 14 is next meeting (SMA to wrap up by end of week 4/15)

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #3 – MAY 10, 2016

AGENDA

Project Overview • Purpose/Process • Where are we now? What is left to do?	Angela Rogge, DEA Brief
Working Documents • TM 8 (Draft) Finance Program • TM 9 (Draft) Transportation Standards • TM 7 (Draft) Solutions Evaluations	Angela Rogge, DEA Andrew Mortensen, DEA 15-30 Minutes
Discussion • Transportation Guidelines • City funding direction – capital and maintenance • Multimodal Improvement Options	All

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL

WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #3 – MAY 10, 2016

MEETING NOTES

Council/Planning Commission **Feedback** and **Comments**

Franchise fees, will they be renewed and how have they been used?

- **Yes, they will be renewed in 2017**
- **Franchise Fees have been placed in the General Fund, not regularly specified to transportation, but some $500,000 was used to help fund the Old Salem Road improvements.**

Millersburg Gateway Improvements

- **Is the Draft Plan different than the current city entry signs?**
  - *Response: Yes, upgrades to the gateways including multimodal enhancements and improved lighting.*

Conser Road Bike Lane Improvement Option

- **Full street reconstruction is required**
  - *Response: acknowledged.*

Shared-use Paths/Trails (Greenway)

- **High water during winter**
  - *Response: acknowledged, thought is to examine soft trail and potential boardwalk design elements within greenway.*

Pavement Preservation Management Plan

- **City recently completed inventory / evaluation of pavement…next step is to prioritize and prepare a Pavement Management Plan**
- **Council and Planning Commission will need to think about annual funding for street maintenance/preservation – acknowledging draft TSP funding input - don't see a major funding issue, but Management Plan will likely not be completed until sometime in 2017**

Draft Transportation Design Guides

- **Cross-sections seem reasonable, ROW totals should match**

Old Salem Road Shared-Use Path Options

- **No need to include either improvement options in Draft TSP, assume No Action option**

City CIP / Project Prioritization Process ? (general question)

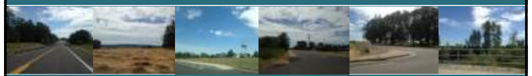
- **CIP was recently revised in February, no real formal process/method**
- **Woods Road appears to be City's next CIP project priority**

TSP as a part of City Comp Plan (general question)

- **How much of TSP is incorporated into Comp Plan?**
    - *Response: All of it, subject to format, may be an Executive Summary with direct reference to TSP document, but project priorities are not embedded*

GENERAL COMMENT(S)

- **Council and Planning Commission need more time to review TSP draft material, process is inadequate for sufficient review and input**
- **"We as a City need to do more work on the street project list – it's a complex issue"**



City of Millersburg
Transportation System Plan

MillersburgTSP

Joint Session:
- **Planning Commission**
- **City Council**
- **Technical Advisory Committee**

Meeting #3 – May 10, 2016

DAVID EVANS AND ASSOCIATES INC.

Oregon Department of Transportation

Agenda

1. Project Overview
   - Purpose/Process
   - Where are we now and what is left to do?
2. Working Documents
   - Finance Program
   - Transportation Guidelines
   - Solutions Evaluation
3. **Discussion – feedback requested on**
   - Transportation Guidelines
   - City funding direction – capital and maintenance
   - Multimodal Improvement Options

TSP Purpose

- Identify impacts of growth
- Develop/refine multimodal design guidelines
- Identify multimodal transportation planning needs for the 25-year planning horizon (2040)
- Identify transportation funding plan
- Identify policy and transportation implementing ordinance

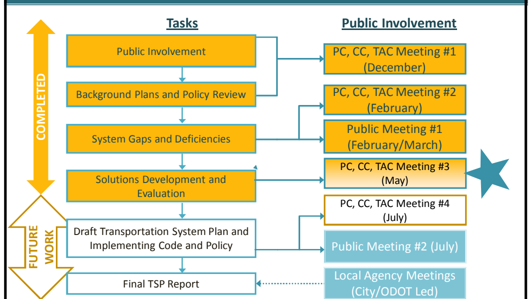
Technical Advisory Committee (TAC)

- *Provides technical and policy guidance and will serve as the primary body making recommendations about the project. Composed primarily of local jurisdiction and ODOT staff.*

Planning Commission / City Council

- *Provides stakeholder input and offers recommendations to the TAC.*

TSP Planning Process

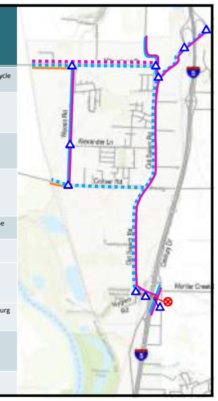


Proposed TSP Goals & Objectives

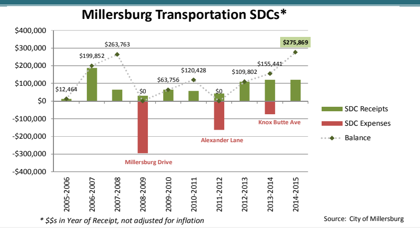
Goal 1	Increase the **safety and security** for all travel modes.
Goal 2	Enhance **connectivity** for all travel modes.
Goal 3	Promote **economic development** and preserve the mobility of existing freight routes to ensure the efficient movement of goods.
Goal 4	Provide for a balanced, **multimodal** transportation system that meets existing and future needs.
Goal 5	Plan and design a transportation system to enhance **livability** and support positive health impacts.
Goal 6	Demonstrate **responsible stewardship of funds and resources**.
Goal 7	Coordinate transportation and land use decision-making to foster development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.
Goal 8	Provide for a **diversified transportation system** that ensures mobility for all.
Goal 9	Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.

Deficiencies

Cross-Sections	Sub-standard cross-sections per functional classification; generally due to lack of bicycle facilities or paved curb-to-curb width.	
Pavement Conditions (Fair or Better)	• Old Salem Road: East of Nygren Road • Millersburg Road: West of Woods Road • Conser Road: West of Woods Road	
Sidewalks	**No Sidewalks:** • Morningstar Road • Woods Road • Century Drive	**Limited/Discontinuous Sidewalks:** • Old Salem Road • Millersburg Drive • Conser Road
Bicycle Lanes	**No Bicycle Lanes:** • Old Salem Road • Morningstar Road • Woods Road • Century Drive	**Limited/Discontinuous Bicycle Lanes:** • Millersburg Drive
Safe Routes to School	Limited pedestrian connections and barriers (highways) between Millersburg and the closest elementary, middle and high school.	
Pedestrian Ramps	• None of the intersections in Millersburg have marked cross-walks Study intersections without pedestrian ramps: • Morningstar Rd at Millersburg Dr • Woods Rd at Alexander Ln • Woods Rd at Conser Rd • Old Salem Rd at Nygren Rd	• Old Salem Rd at NE Old Salem Rd • Old Salem Rd at Century Dr • All I-5 ramp terminals
Lack of Transit Facilities	There is no regular public transportation/transit available within the City of Millersburg	
Traffic Operations	• The City does not currently have an operational/mobility standard • Intersections expected to exceed capacity in 2040: - Old Salem Road at NE Old Salem Road - I-5 Exit 238 Northbound Ramps at Jefferson Highway (OR 164)	
Crash History	• Old Salem Road at Century Dr has a crash rate exceeding critical crash rate • 13 Fixed object collisions (46% of total crashes)	

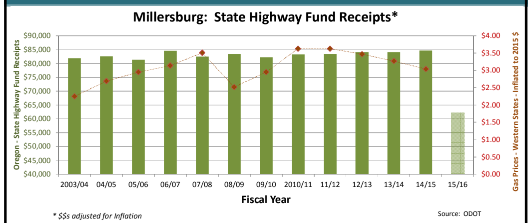


Finance Program: Millersburg SDC's



- **Since 2005, Millersburg has collected approximately $808,000** in transportation SDC revenues and **obligated approximately $532,000** towards three major street improvement projects: Millersburg Drive, Alexander Lane and Knox Butte Avenue.
- As of the later part of 2015, the City's transportation **SDC balance is approximately $276,000.**

Finance Program: State Highway Fund



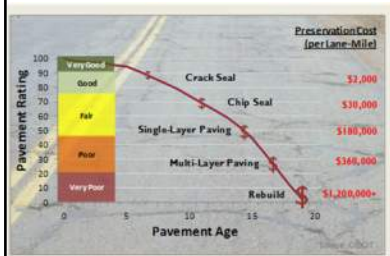
Assuming a continued trend in population growth, lower gas tax revenue, increased vehicle fuel economy and other factors, Millersburg should expect an average annual receipt of slightly more than **$83,000 in State Highway Fund allocations.**

Finance Program: Franchise Fees

Key Questions for City:

1) **What has the City used its Fee revenue for?** (How much towards transportation capital and/or maintenance, if any ?)
2) **Will the Pacific Power fee expire in 2017?**

Finance Program: Consider City Street Pavement Preservation Costs



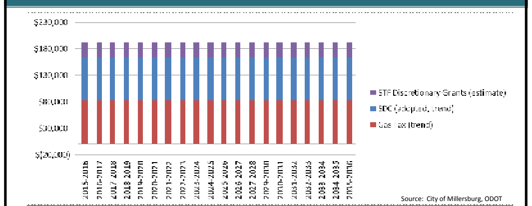
Millersburg Arterial/Collector Lane Miles

~ 20
* $15,000
= $300,000

20-Year Pavement Preservation Cost

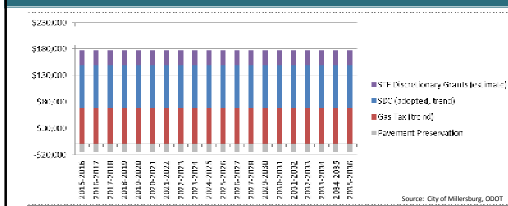
Rough Estimate

Finance Program: Baseline Forecast



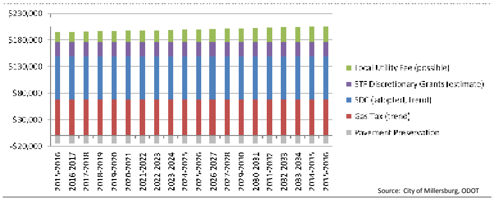
- Assuming continued trend in Millersburg's **SDC receipts** and **gas tax revenues** and regular receipts from **Oregon's discretionary grant program (STF)**, Millersburg's transportation **revenue may exceed $200,000 annually** (2015 dollars)
- Total revenue dedicated to ***capital improvement project*** programs only

Finance Program: Forecast Option A



- Assuming
  - ✓ **$15,000 annual allocation of gas tax revenues to new Street Pavement Preservation Fund**
- ✓ Total revenue dedicated to ***capital improvement project*** **and pavement preservation (maintenance)** programs

Finance Program: Forecast Option B



- Assuming
  - ✓ **$15,000 annual allocation of gas tax revenues to new Street Pavement Preservation Fund, and**
  - ✓ **Possible, New Local (street) utility fee**
- ✓ Total revenue dedicated to ***capital improvement project*** **and pavement preservation (maintenance)** programs

Existing Transportation Guidelines

Street Type	ROW Width	Curb-to-Curb Width	Center Turn Lane Width	Travel Lanes/Width	Bike Lane Width Each Side	On-Street Parking Width and Location	Landscape Strip Width	Sidewalk Width
Arterial	80’	50’	14’	2/12	6’	None	5’	5’
Future Arterial	60’	36’	NA	2/12	6’	None	5’	5’
Collector with Parking	60’	50’	NA	2/12	6’	7’ Each Side	None	5’
Collector with Landscape	60’	36’	NA	2/12	6’	None	5’	5’
Local w/ Parking on Both Sides	52’	32’	NA	2/12	NA	7’ Each Side	4’	5’
Local Skinny St. Parking on One Side	40’	29’	NA	2/11	NA	7’ Each Side	None	5’

Transportation Guidelines

- Same as current Land Use Code (Future Arterial and Arterial) – Does not add up to ROW width
- Same as current Land Use Code (No Parking and Parking both sides)
- **NEW**
- Focuses on providing enough traveled way but does not restrict widths with striping
- Reduces ROW from 52’ to 50’
- Paved width ranges between 28’ – 36’ (current range is 29’ – 32’)
- Adds Cul-de-sac and Alley cross-section options
- Adds Industrial cross section but ROW guidelines already exist in current code
- **NEW** Local Commercial Service/Alley
- **NEW** Trails

Functional Classification	Minimum Design Widths: Right-of-Way	Minimum Curb-To-Curb Paving	Within Curb-To-Curb Area: Motor Vehicle Travel Lane	Median and/or Center Turn Lane	Bike Lane (Both Sides)	On-Street Parking	Landscape Buffer (Both Sides)	Sidewalks (Both Sides)
Arterial								
2 Lanes	60 ft	36 ft	12 ft	N/A	6 ft	N/A	5 ft	5 ft
3 Lanes	80 ft	50 ft	12 ft	14 ft	6 ft	N/A	5 ft	5 ft
Collector – Residential								
No parking	60 ft	36 ft	12 ft	N/A	6 ft	None	5 ft	5 ft
Parking both sides	60 ft	50 ft	12 ft		6 ft	7 ft	N/A	5 ft
Multi-Use Path	60 ft	36 ft	11 ft		N/A	7 ft	4.5 ft	5 ft one side, 10 ft multiuse path one side
Local – Residential								
Parking one side	50 ft	32 ft	Unstriped	N/A	Sharrows	Unstriped	4 ft	5 ft
Parking both sides	50 ft	36 ft	Unstriped		Sharrows	Unstriped	0 or 4 ft	5 ft
Skinny	50 ft	28 ft	Unstriped		Sharrows	Unstriped	5-6 ft	5-6 ft
Cul-de-sac Radius	50 ft	40 ft	Unstriped		N/A	Unstriped	None	5 ft
Alley	20–24	18–20	N/A		N/A	N/A	N/A	optional
Local – Industrial								
Parking both sides	60 ft	40 ft	Unstriped	N/A	N/A	Unstriped	Behind[5]	5-6 ft
Local – Commercial Service/Alley								
No Parking	30 ft	20 ft	Unstriped	N/A	N/A	N/A	N/A	4 ft[6]
Parking one side	40 ft	28 ft	Unstriped			Unstriped		
Trails								
Trails	10–20 ft	10–12 ft	N/A	N/A	N/A	N/A	2–7’	N/A

Multi-Modal Street Improvements

ID	Improvement	Description	Priority
S1	Zuhlke Ln extension	Extend Zuhlke Lane to Woods Rd and Old Salem Rd	TBD
S2	Millersburg gateway treatments	Provide gateway treatments at northern and southern end of Millersburg (Old Salem Rd)	TBD
S3	Reconstruct Old Salem Rd	Reconstruct Old Salem Road to arterial cross-section (bike lanes, curb, gutter, sidewalk)	TBD
S4	New local streets	The TSP will map the general location of new street connectivity within future development areas	TBD
S5	Grade separated RR crossing on Conser Rd	Provide safe, multi-modal access across Union Pacific Railroad	TBD
S6	Reconstruct Millersburg Dr	Reconstruct Millersburg Dr west of Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk) with development	TBD
S7	Reconstruct Morningstar Rd	Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	TBD

Bicycle System Improvements

ID	Improvement	Description	Priority
B1	Old Salem Road Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Old Salem Road from the North City Limit to South City Limit and within existing ROW (see PMT meeting hand-out describing options)	TBD
B2	East-West Shared-Use Paths	Construct a local pathway system connecting neighborhoods to Millersburg Park and City Hall	TBD
B3	Woods Road Shared-Use Path	Construct a 10-12 foot wide bicycle and pedestrian path parallel to Woods Rd and within existing ROW	TBD
B4	Old Salem Road Shoulder Lanes (interim project)	Construct continuous bicycle access on Old Salem Rd from north to south City limits. Widen shoulder at locations where shoulder is less than 2 feet.	TBD
B5	Conser Rd Bicycle Lanes	Extend bicycle lanes on Conser Rd to west City limits	TBD

Conceptual Shared-Use Path and Trail Network

Old Salem Road Pathway Options

Existing

Option 1

✓ No-Build

Option 2

✓ Access - Opposite side of Old Salem from majority of Millersburg Residents
✓ Multiple Industrial Driveway crossings
✓ Cost: $0.8 - $0.9 million

Option 3

✓ Access – Same side of Old Salem from majority of Millersburg Residents
✓ Requires re-construction of Old Salem Road
✓ Cost: $4.0 – $6.0 million

Pedestrian System Improvements

ID	Improvement	Description	Priority
P1	Millersburg Park-City Hall Shared-Use Path	Construct shared-use path between Millersburg Park and City Hall, providing important inter-neighborhood connectivity	TBD
P2	Millersburg Greenway	Construct a greenway trail within the Crooks Creek riparian corridor, linking Millersburg Park and north Millersburg neighborhoods	TBD
P3	"Four Lakes" Trail	Complete Feasibility Plan and construct "Four Lakes" Trail - from Conser Road along the Willamette River to Simpson Park and south to Bowman Park and Dave Clark Trail (Albany). Coordinated with Conser Road/UPPRR Crossing Improvement (Table 3, Project S5)	TBD
P4	Curb Ramp Replace Curb Ramps	Upgrade existing street intersection curb ramps to meet ADA design requirements	TBD
P5	Conser Road Sidewalks	Extend the north side sidewalk west to city limits. Extend south side sidewalk west to city limits as development occurs.	TBD
P6	Old Salem Road Sidewalks	Construct new sidewalks along west side of Old Salem Road, north of Nygren Road	TBD

Misc. Improvements

ID	Improvement	Description	Benefit	Priority
T1	Transit Stop	Identify general location of future transit stop(s) and amenities	Increase travel options to Millersburg residents	TBD

ID	Improvement	Description	Benefits	Priority
TSM1	Speed Warning System on Century Drive	Install a speed warning system on Century Drive	Vehicular safety	TBD
TSM2	Install speed limit signs on Woods Rd and Conser Rd	Conduct a speed study to identify appropriate speed limit posting and properly sign the roadways	Multi-modal safety	TBD

ID	Improvement	Description	Benefits	Priority
M1	City-wide Pavement Management Plan	Conduct a comprehensive inventory and evaluation of street pavement conditions and develop Pavement Management Plan	Preserve and maintain City infrastructure and economic development	TBD

Next Steps

- Prioritization of Improvements
  - Affirm City working policy - funding allocation to Capital and Maintenance
  - Finalize list of improvements
    - Financially Constrained
    - Aspirational
  - Develop planning level cost opinions for Financially Constrained list
  - Finalize Tech Memo #7 (Solutions Evaluation)
- Prepare Draft TSP
- Draft Tech Memo #10: Implementing Ordinances
- Next PC/CC Meeting #4 and Open House #2 (July)
  - Review draft TSP

DISCUSSION

- Funding:
  - What level of funding commitment will the City dedicate to both its Capital and Maintenance programs?
  - Will the city renew its Franchise Fees and at what level will they be dedicated to transportation?
- Transportation Guidelines:
  - Do you want to revise the Street Design Guidelines?
  - Which Old Salem Road pathway option do you prefer ?
- Project Prioritization:
  - How have projects been developed/prioritized in the past?
  - Are there any listed improvement options you'd like to see added?
  - Are there any listed improvement options that conflict with the

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #8– JUNE 16, 2016

AGENDA

Roll Call (2 min)

DEA

Draft Deliverables update (5 min)

DEA
PMT discussion

- TM 8 (Draft) Finance Program, methodology confusion resolved
- TM 9 (Draft) Transportation Standards
- TM 7 (Draft) Solutions Evaluations
- Draft TSP Outline
- Draft TSP
- TM #10 (Draft) Implementing Ordinances
- Final TSP

Schedule (5 min)

DEA
PMT discussion

- Project List to PMT for review – June
- Project List to Joint Session ~July, 2-3 weeks before August meeting
- Finalize TMs 7, 8, 9 – August after Joint Session
- Send Draft TSP Outline to PMT - July
- Draft TSP – to PMT in August, present to Joint Session in September
- Draft TSP - Receive PMT comments – end of August, TBD
- Draft TM #10-Implementing Ordinances – to PMT in August, present to Joint Session in September
- Draft TM #10 - Receive PMT comments – end of August, TBD
- No Joint Session Attendance until September, then again in October

May 10 Joint Session Recap (5 min)

DEA
PMT discussion

Needs for upcoming deliverables (5 min)

DEA
PMT discussion

- Quick PMT review of Recommended project list
- Input on the TSP Outline-is the layout easy to use

Next Steps (3 min)

DEA

- Finalize TMs #7, #8, #9
- Draft TSP outline
- Draft TM #10
- Joint Session September
- Joint Session October

Other Items to Discuss (5 min)

All

- Coordination with other area plans
- Strategic Plan updates?

Adjourn

DEA
All

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #9 – JULY 11, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
  - Dan Fricke, ODOT
  - Darrin Lane, Linn County
  - Janelle Booth, City Engineer/CH2M
  - Shelly Alexander, DEA Project Consultant PM
  - Angela Rogge, DEA Project Consultant Deputy PM
- Unable to participate
  - Barbara Castillo, City of Millersburg
  - Garth Appanaitis, DKS Prime Consultant PM
  - Don Driscoll, City of Millersburg

PROJECT WEBSITE – RENEWAL OPTIONS

- Shelly mentioned that the millersburgtsp.com website is set to expire in October, 2016. Cost to renew another year would be ~$120.
- Darrin suggested we revisit the website renewal in September – if it makes sense, the expense of hosting the millersburgtsp.com domain for another year does not seem unreasonable.
- **Question for Barbara: Who is responsible for updating content on Millersburg website?** DEA will want to coordinate with the City as the TSP comes closer to completion; the final document and appendices should be available on Millersburg's website eventually.

AUGUST JOINT MEETING

- Darrin has said he should be able to assist at the joint PC/CC meeting in August
- DEA anticipates asking for specific feedback/comments from the PC/CC when the project list is sent out
- DEA will work with Darrin in advance of meeting to identify desired outcomes
  - Are there any major concerns with how the projects are divided into Financially Constrained and Aspirations?
  - What level of investment per year is Millersburg willing to put toward pavement preservation?

DRAFT PRIORITIZED PROJECT LIST

- Shelly let the group know that Janelle Booth and Theresa Conley have provided comments
- Darrin provided verbal comments that he agreed with Janelle's suggestions (especially shifting the Millersburg Road improvement project to financially constrained)
- Angela pointed out that in order to shift the project to financially constrained, another project would likely need to be shifted from the financially constrained list to the "aspirational" list
  - Conser Road realignment is meant to be in conjunction with the new I-5 interchange project, which is considered very aspirational – thus, this project was shifted from the financially constrained list to the aspirational list

Next Steps

- DEA will incorporate PMT comments to project list and send to Barbara by 7/15/16 for distribution to the PC/CC
- Begin drafting Tech Memo #10 (Implementing Ordinances). Will include language on intersection performance and updates to the street guidelines to make them consistent with suggestions in Tech Memo #9 (Transportation Guidelines).

Adjourn

Action items:

39. **DEA (Angela)** will incorporate PMT comments to project list and send to Barbara by 7/15/16 for distribution to the PC/CC
40. **Barbara** to distribute revised project list to PC/CC
41. **DEA** to provide PC/CC meeting goals/agenda to Darrin by 7/29/16

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #10 – SEPTEMBER 12, 2016

MEETING AGENDA

1. Roll Call

2. Millersburg TSP Website – Renewed

3. Draft Tech Memo #10: Implementing Ordinances v1 for PMT
    a. Adoption process for TSP vs. TM #10
    b. Traffic Impact Statement language/triggers
    c. Does the City want to add a section to Article 5 (Development Standards), or subsection to Section 5.122 Transportation Standards, that specifically outlines the processes, standards, and criteria for permitting and reviewing transportation development projects?

4. Quick check-in on Draft TSP (PMT comments due 9/16/16)

5. Schedule
    a. Planning Commission/City Council meetings
    b. Open House
    c. DLCD notification
    d. TSP Adoption Process

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #10 – SEPTEMBER 12, 2016

MEETING NOTES

INTRODUCTION

- Participants included:
    - Dan Fricke, ODOT
    - Janelle Booth, City Engineer/CH2M
    - Barbara Castillo, City of Millersburg
    - Shelly Alexander, DEA Project Consultant PM
- Unable to participate
    - Don Driscoll, City of Millersburg
    - Darrin Lane, Linn County
    - Garth Appanaitis, DKS Prime Consultant PM
    - Angela Rogge, DEA Project Consultant Deputy PM

PROJECT WEBSITE – RENEWED

- Website has been renewed until October 2017

DRAFT TECH MEMO #10: IMPLEMENTING ORDINANCES V1 FOR PMT

- Adoption process for TSP vs. TM #10
    - *Confirmed with group that TSP and TM 10 are separate tracks*
- Traffic Impact Statement language/triggers
    - *Still reviewing*
    - *Janelle: At first glance, the triggers seem reasonable and no additional section to Article 5 is likely needed*
- Does the City want to add a section to Article 5 (Development Standards), or subsection to Section 5.122 Transportation Standards, that specifically outlines the processes, standards, and criteria for permitting and reviewing transportation development projects?
    - *Still reviewing*
    - *Janelle: At first glance, the triggers seem reasonable and no additional section to Article 5 is likely needed*

QUICK CHECK-IN ON DRAFT TSP

- *Barbara sent to the PC/CC members, she has not received any comments yet. Her first impression is that it looks good so far/no issues (still reviewing)*
- *Dan provided a comment to add an aspirational project to the list (DEA will add project without a cost estimate , consistent with other project listings)*

- *Janelle is 1/3 through her review and has only minor comments*
- *It is suggested that any comments received from the PMT be shared via track changes for the PC/CC joint session in Oct.*

SCHEDULE

- Planning Commission/City Council meetings
- Open House
- DLCD notification
- TSP Adoption Process
    - *DEA will be presenting the DRAFT TSP at the 10/11 joint session*
    - *Group discussed doing a joint session for the public hearing process. Barbara was going to look at the ordinances to see if this approach will work. DEA to follow up with Barbara to discuss dates (this was done via conference call on 9/22/16).*
    - *Barbara mentioned that multiple seats for the council will be up for election with the new term starting the first of the year. The group discussed finishing the TSP process (completing the final public hearing) prior to the first of the year for efficiency.*
    - *DEA followed up with Barbara on 9/22/16 and set the following schedule of upcoming events/meetings*
        - *Oct 11 (6:30-7:30) – Joint session PC/CC/TAC to discuss the draft TSP and draft TM 10*
        - *Oct 18 (4:30-6:30) - Open House #2 (Barbara will do the announcements, DEA provided templates, flier options)*
        - *Dec 13 (6:30-7:30) – Public Hearing with joint PC/CC, City will need to notify DLCD 35 days in advance*

ADJOURN

ACTION ITEMS:

1. DEA to contact Barbara to discuss date options for upcoming meetings. (Complete 9/22)
2. DEA to send Barbara sample fliers for advertising the open house. (Complete 9/22)
3. Barbara to advertise Open House (
4. Barbara to send out DLCD notice by 11/8/2016

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #11 – OCTOBER 10, 2016

MEETING AGENDA

1. Roll Call

2. Draft TSP/TM #10 comment status

3. Upcoming meetings

4. Other area project coordination

5. Adjourn

MILLERSBURG TSP

PROJECT MANAGEMENT TEAM

MEETING #11 – OCTOBER 10, 2016

MEETING NOTES

42. Roll Call

- Participants included:
    a. Dan Fricke, ODOT
    b. Darrin Lane, Linn County
    c. Janelle Booth, City Engineer/CH2M
    d. Barbara Castillo, City of Millersburg
    e. Shelly Alexander, DEA Project Consultant PM
- Unable to participate
    a. Don Driscoll, City of Millersburg
    b. Garth Appanaitis, DKS Prime Consultant PM
    c. Angela Rogge, DEA Project Consultant Deputy PM

43. Draft TSP/TM #10 comment status
    a. TSP:
        i. No comments from Barbara, Darrin, none from PC/CC
        ii. Janelle, Dan and Theresa sent comments
    b. TM 10
        i. No comments from Barbara, Darrin, none from PC/CC
        ii. Janelle, Dan and Theresa sent comments
    c. (TSP) Darrin would like to see some Millersburg specific pictures along with the graphics (e.g., the current cross-section of the financially constrained roadways-Zulke, etc.)
    d. (TM 10) Darrin suggested moving forward with TM 10 as is. He plans to pull the code changes (strikethrough text) and send to Forrest (City Attorney). Forrest (and Don?) will prepare a clean copy of the code language and have it ready to present to the PC/CC meeting in November. Darrin will present the code information at the November meeting.
    e. (TM 10) Once passed, the goal is for the final presentation at the December meeting for approval with the TSP.
    f. (TM 10) Goal: to have both the code and the TSP wrapped up by the end of the year.
    g. (general) Darrin asked about the Implementation procedure. *Presenting at the TSP at the 10/11 Joint Session, Ordinance track (described in 2d, above), and approval of both the TSP and Ordinance information.*

44. Upcoming meetings

a. Joint Session 10/11/16
    i. Missing 2 PC and 2 CC members
    ii. Barbara will not be there, LeeAnn will be the contact
    iii. Barbara will have ~20 copies of Draft TSP and TM 10 available for meeting attendees
b. Open House 10/18/16
    i. DEA to arrive ~3:30-4, Open House 4:30-6:30
c. 12/13/16: Present for approval to joint PC/CC (TSP and Implementing Ordinances)

45. Other area project coordination
    a. Linn County TSP making slow progress. Currently wrapped up stakeholder interviews
46. Adjourn

<u>Action Items:</u>

- **DEA** to provide guidance for DLCD notification
- **Darrin/Barbara** to provide ordinance information to Forrest/Don for a "clean copy" to present in November

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL

WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #4 – OCTOBER 11, 2016

AGENDA

Project Overview	Shelly Alexander, DEA
• Purpose/Process (What? Why? How?) • Where are we now? What is left to do?	Brief
Draft TSP	Shelly Alexander, DEA
• Implementation • Modal Plans	20 Minutes
Draft Tech Memo #10	Shelly Alexander, DEA
• Multimodal Street Design Guidelines • Policy (Potential Code Amendments)	10 Minutes
Discussion	Shelly Alexander, DEA
• Questions?	PC/CC Group 10-20 Minutes

MILLERSBURG TSP

JOINT PLANNING COMMISSION/CITY COUNCIL WORKSHOP AND TECHNICAL ADVISORY COMMITTEE

MEETING #4 – OCTOBER 11, 2016

MEETING SUMMARY

<u>Meeting followed the structure of the slideshow.</u>

Slide #1: Title Slide: no comments

Slide #2: What is a TSP?

- Identifies opportunities & keeps them from getting lost/forgotten
- What is the city's projected growth over the next 20 years?
    - *Response: Millersburg has an estimated population of ~3000 (20-years in the future)*

Slide #3: Why have a TSP?: no comments

Slide #4: How will improvements be funded and implemented?

- City council reminded everyone that the "funded" project list includes the projects that are projected to be funded within the next 20 years, not meaning that those projects are currently funded to be constructed today.

Slide #5: Coordination with Area Plans

- Request was made that the Albany TSP be added to the list of plans that were screened and coordinated with.

Slide #6: Implementation: no comments

Slide #7: TSP Planning Process: no comments

Slide #8: Draft Plan Organization

- Reminder: the TM10 & TSP can be adopted separately if needed.

Slide #9: Street Modal Plan

- How is this list of projects determined? Who decide the importance of each project, whether it is listed as financially constrained or aspirational?
    - *Response: DEA collected potential projects from the city, from concerned citizens, and from some observation/analysis of current & forecasted conditions. The projects are brought before the City Council, Planning Commission, and Technical Advisory Committee to decide on an order of importance*
- Some concerns were expressed when some area projects were not seen.

- *Response: Aspirational projects are in the plan, but not listed in the presentation. Also, several suggested projects have been bumped up to the regional process (currently underway) because they have impacts extents larger than the city limits.*

Slide #10: Bicycle Modal Plan: no comments
Slide #11: Pedestrian Modal Plan: no comments

Slide #12: Conceptual Shared Use Path & Trail Network: no comments

Slide #13: Other Travel Modes

- City Council added: Transit system is being considered by Millersburg in collaboration with other nearby and interested municipalities, such as Jefferson, Lebanon, Albany, etc. They do not currently know what it would look like IF service was started in the future.

Slide #14: Functional Classification Plan

- Is this map current? Or a forecast of what the area will look like in the future?
    - *Response: This is a* current *map of the functional classifications of each roadway within the city limits.*
- Why do the streets of Millersburg need these classifications if the projected growth of the city within the next 20 years would not cause any major changes to street traffic & functionality of the system?
    - *Response: The TSP explains the Millersburg system in a common language that is understood by other nearby organizations and municipalities (AAMPO RTP/TDP, Albany TSP, Linn County TSP, etc.) that may need to collaborate with Millersburg on future projects. Also, future development interest is unpredictable. When future development occurs, these classifications and the street design guidelines will guide the infrastructure needs.*

Slide #15: Multimodal Street Design Guidelines

- Note: these are guidelines that might not be possible to meet at times, but the city uses them as a starting point with design. There may be exceptions to these standards, but special approval is needed.

Slide #16: Multimodal Policy: no comments

Millersburg TSP

Transportation System Plan

OPEN HOUSE

TUESDAY, OCTOBER 18, 2016

4:30 PM – 6:30 PM

CITY HALL

JOIN US FOR A REVIEW OF THE DRAFT TRANSPORTATION SYSTEM PLAN: THE CITY'S GUIDE FOR IMPROVEMENTS TO ROADS, SIDEWALKS, CROSSINGS, TRAILS, AND OTHER TRANSPORTATION FACILITIES OVER THE NEXT 20 YEARS.

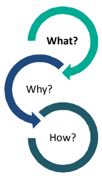
City of Millersburg

Transportation System Plan

Millersburg TSP
Transportation System Plan

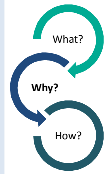
What is a TSP?

- Planning document intended to serve as a blueprint to guide transportation decisions as development occurs in a City
- Provides a long-term blueprint for all modes of travel
- Contains goals, objectives, projects, & implementation guidelines to provide mobility for all users
- Examines existing conditions and looks ahead 20 years to accommodate planned growth



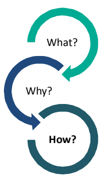
Why have a TSP?

- Guide the maintenance, development, and implementation of the transportation system
- Implement plans and regulations of regional government, State of Oregon
- **TSP will be the transportation element of the Millersburg Comprehensive Plan**
  - **Details on subpolicies**
  - **Implementation strategies**



How will improvements be funded and implemented?

- Funding Sources
  - System development charge (SDC) receipts
  - Gas tax revenues
  - Receipts from Oregon's discretionary funds program
- TSP will be adopted by Millersburg through a hearing process
- The document provides a menu of potential improvements, but is not a mandate



Coordination with Area Plans

Screening of existing and ongoing plans included:

- Projects from Other Planning Documents (Ongoing):
  - Linn County Transportation System Plan
  - Albany Area MPO Regional Transportation Plan (AAMPO RTP/TDP)
- Projects in Capital Plans:
  - 2015-2018 Oregon (Final) Statewide Transportation Improvement Program (STIP)
  - Millersburg Streets Capital Improvement Program (CIP)

Implementation

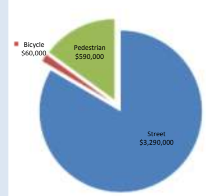
TSP is a menu of projects

- Select projects as funding sources become available **OR** selected as adjacent improvements are made
- Bundling projects could save on total project cost

20-year Funding Outlook

- Approximately $4.47 million in transportation revenue (2016 dollars)
- Financially constrained projects (those with available funding sources) cost approximately $3.94 million
- Approximate funds available for pavement maintenance/other: $530,000

Financially Constrained Project Costs By Mode



TSP Planning Process

Fall 2015	December 2015	February 2016	March 2016	May 2016	August 2016	October 2016
Initiate TSP Update	System Inventory & Operations	Alternatives Evaluation & Revised Alternatives		Prioritized Project List	Draft TSP Update Report	Final Report & Adoption
	PC/CC #1	PC/CC #2	Open House #1	PC/CC #3		PC/CC #4 Open House #2

We are here

- Next Steps
  - Incorporate Comments from PC/CC #5
  - Open House #2 (10/18/16)
  - Adoption Ready Report
  - Begin Local Agency Adoption Process: PC/CC Hearing (12/13/16)

MILLERSBURG TSP

Draft Plan Organization

VOLUME 1

- EXECUTIVE SUMMARY
- 1. Introduction
- 2. Design Guidelines and Multimodal Policy
- 3. Modal Plans
- 4. Implementation

VOLUME 2
- Technical material
- Detailed process documentation
- Summary of public outreach

Street Modal Plan

Financially Constrained Improvements	
S6	**Reconstruct Millersburg Dr:** Reconstruct Millersburg Dr west of Woods Rd to city limits; upgrade to arterial cross-section (bike lanes, curb, gutter, sidewalk) with development
S7	**Reconstruct Morningstar Rd:** Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)
S8	**Reconstruct Woods Rd:** Two Phases: Reconstruct Woods Rd to arterial cross section (bike lanes, curb, gutter, sidewalk) – *Would preclude need for Improvement B3* Phase I: North of Alexander Ln Phase II: South of Alexander Ln

Bicycle Modal Plan

Financially Constrained Improvements	
B4	**Old Salem Rd Shoulder Lanes (interim project):** Construct continuous bicycle access on Old Salem Rd from north to south city limits by widening shoulder at locations where shoulder is less than 2 feet
B5	**Conser Rd Bicycle Lanes:** Extend bicycle lanes on Conser Rd to west city limits (paint only)

Pedestrian Modal Plan

Financially Constrained Improvements	
P1	**Millersburg Park-City Hall Shared-Use Path:** Construct shared-use path between Millersburg Park and City Hall, providing important inter-neighborhood connectivity
P5	**Conser Rd Sidewalks:** Extend the north side sidewalk west to city limits; extend south side sidewalk west to city limits as development occurs
P6	**Old Salem Rd Sidewalks:** Construct new sidewalks along west side of Old Salem Rd, north of Nygren Rd
P7	**Alexander Dr Pedestrian Crossing:** Provide an RRFB and ADA ramp pedestrian crossing across Alexander Dr near city park

Conceptual Shared Use Path & Trail Network

Intended only to indicate the concept and to serve as starting points for planning

- **Neighborhood Shared-Use Paths**
  - Provide access for nonmotorized users
- **Millersburg Greenway Trail**
  - Greenway trail within the Crooks Creek riparian corridor, linking Millersburg Park and north Millersburg neighborhoods
  - Could be a soft, seasonal trail or a network of boardwalks and shared-use paths (due to wetlands)
- **The "Four Lakes" Trail**
  - Conceptual plan for a regional trail connection from Conser Road along the Willamette River to Simpson Park and south to Bowman Park and Dave Clark Trail (in the City of Albany).
  - Initial step would be to develop a feasibility plan in conjunction with regional partners
  - Trail would need to be seasonal due to its path through floodplains and wetlands

MILLERSBURG TSP

Other Travel Modes

Transit:
- No transit system in place
- The AAMPO RTP/TDP will identify projected transit service demand and potential coverage plans for the Metropolitan Planning Organization (MPO)

Air: Nearby Albany Municipal Airport

Pipeline: No changes to the pipeline system are planned

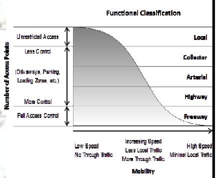
Water: No designated navigable waterways

Rail

Freight:
- UP track serves 25 trains/day
- PNWR track serves 10 trains/day
- Nearby Albany/Millersburg Rail Yards (2014 "ConnectOregon II" project to improve switching operations)

Passenger: Amtrak station located in Albany provides service from Los Angeles, CA to Seattle, WA

Functional Classification Plan



No classification changes were made

MILLERSBURG TSP

Multimodal Street Design Guidelines

Arterials

Collectors

Residential/Local

- Apply to new development
- City upgrades will strive for standard but will design the upgrade within obtainable ROW

MILLERSBURG TSP

Multimodal Policy

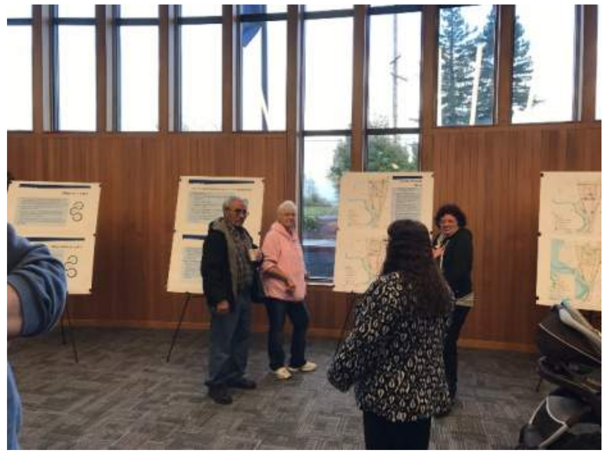
Suggested Code Amendments (These can be adopted separately from the TSP)
- Recommended changes to the LUDC are based on a review of consistency with the TPR

Article 1	• General provisions that are not directly relevant to transportation, including authority, interpretations, and enforcement • Several definitions need to be added and modified I order to be consistent with proposed amendments to other articles
Article 2	• References the new traffic impact study section • Exempting public improvements from site plan review • Incorporating TPR 660-012-0060 regarding plan and zoning amendments
Article 3	Add notification to ODOT and AAMPO
Article 4	Adds transportation facilities and improvements as a use allowed outright, thus streamlining the permitting process, as required by the TPR
Article 5	• Standards need to be amended in order to be consistent with the proposed TSP standards • Table with access spacing standards is proposed to be added to the access management section of Section 5.122, Transportation Standards • The table in LUDC Section 5.123 (4) should be replaced with the street design guidelines table in the Transportation Guidelines chapter
Article 6	No amendments
Article 7	No amendments
Article 8	No amendments

MILLERSBURG TSP

OPEN HOUSE #2 – OCTOBER 18, 2016

EVENT NOTES



MillersburgTSP
Transportation System Plan

Millersburg TSP

Public Open House

October 18, 2016

Millersburg City Hall

SIGN IN SHEET

Name	Phone #	Email
Pat Boonar		patbodnar@comcast.net
Cyndi Newman		cnewman@curtainvans.co
Ana + Juan DeLeon	541-928-0805	3235 Knox Butte Av NE.
Benji Coto	541-801-9670	3240 Knox Butte Ave NE
Juan D DeLeon		
Marvin D. Nafziger	541-9266645	marv.judy@msn.com
Michael Newman	541-926-4468	mkyrep@comcast.net
Bill & Pam McLagan	541 231 4326	wdmacs0@juno.com
Larrie & Carol Rocken		
Jesse & Lou Lowther		

REFER TO AAMPO

COMMENTS

NEED SAFE CROSSING OF SALEM RD
NEAR ~~KAT~~ MILLERSBURG SIGN,
TRAILER PARK & POKER (MILL STATION)
BLACK DIAMOND CARD ROOM to PARK

→ CONCERN ABOUT BLIND SPOT,
HIGH SPEEDS & ON/OFF RAMP

→ NO SIDEWALK TO SAFE X-ING

COMMENTS

- near 54th / Clearwater / Old Salmon

sight distance issue.

* come from north.

* ~~bushes~~ fences

THERE IS A SEVERE SIGHT PROBLEM WHEN ENTERING OLD SALEM ROAD FROM CLEARWATER. SIMILAR PROBLEM ON 54TH AND ALEXANDER Rd – ENTRY TO OLD SALEM ROAD

COMMENTS

w/a change/ ATI exposure

COMMENTS

Potential ponds that would need to be fenced off if the regional trail system were to become a reality.

outfluence of Talking waters

COMMENTS

Signage for local streets (Knox Butte Ave) to warn trucks/trailers That they can't go thru/can't turn AROUND

MILLERSBURG TSP

JOINT SESSION – ADOPTION HEARING

PLANNING COMMISSION AND CITY COUNCIL

MEETING #6 – DECEMBER 13, 2016

AGENDA

Intro/Summary of Project	Shelly Alexander, DEA
• Summary of public involvement	Brief
Adoption Ready TSP	Angela Rogge, DEA
• Review modifications since October 11, 2016 (minor formatting/grammatical changes)	10 Minutes
• Modal Plans	
Tech Memo #10 (Implementing Ordinances)	Shelly Alexander, DEA
• Next steps	5 Minutes
Discussion	0-15 Minutes
• Next steps/Questions	
Adoption	Planning Commission
• TSP	5-15 Minutes
• Ordinances	

MILLERSBURG TSP

City of Millersburg

Transportation System Plan

MillersburgTSP
Transportation System Plan

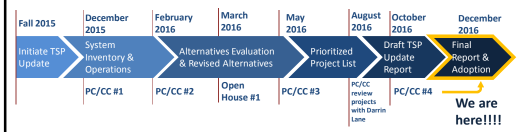
MILLERSBURG TSP

AGENDA

- Summary of Project
- Review of Documents
  - Adoption Ready TSP
  - Implementing Ordinances
- Discussion (If needed)
- Adoption of Plan
- Adoption of Ordinances

MILLERSBURG TSP

TSP Planning Process

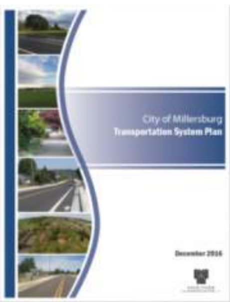


- **September 1, 2016:** Millersburg Planning Commission and City Council provided a draft TSP
- **October 11, 2016:** Consultant Team presents Draft TSP at joint meeting
- **October 18, 2016:** Public comments were collected during an open house
- The Department of Land Conservation and Development was notified 35-days prior to the first evidentiary hearing (ORS 197.610, OAR Chapter 660, Division 18).

MILLERSBURG TSP

Plan Organization

VOLUME 1



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S10	**Future local connection to I-5 Interchange:** Add a new connection from Old Salem Rd (south of Conser) to a new, fully directional interchange (to replace existing Murder Creek and Viewcrest Interchanges)

Bicycle Modal Plan

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MILLERSBURG TSP

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Passenger: Amtrak station located in Albany provides service from Los Angeles, CA to Seattle, WA

MILLERSBURG TSP

MINOR CHANGES SINCE OCTOBER

Some changes were made to the Draft TSP in response to comments about formatting, graphics and alignment with ODOT plans.

- Addition of site photos per Darrin Lane’s request
- 1 New Aspirational Project: Local road connection (exact location TBD) to future ODOT interchange (dependent on interchange being built first)
- Added text to funding section: STP funds may also be available from the AAMPO if the project has regional significance.
- Included project numbers for the Millersburg Greenway and Four Lakes Trails in the text
- Added in planning-level cost opinions for Aspirational (unfunded) projects
- Corrected formatting/reference errors

MILLERSBURG TSP

Move to Adopt the Millersburg TSP

- The Millersburg Transportation System Plan (TSP) is intended to be adopted as the transportation element of the City’s Comprehensive Plan, replacing the 1984 language.
- The TSP will replace the Transportation Element (Section 9.700) of the Comprehensive Plan. The TSP also includes an inventory of pipelines and will replace the Pipeline Element. **No other amendments to the comprehensive plan are proposed other than replacing the Transportation and Pipeline elements.**

MILLERSBURG TSP

Move to Adopt the Ordinances

- In alignment with TSP document, the Consultant created an *Implementing Ordinances Memorandum* that provides draft proposed amendments to the Land Use Development Code (LUDC—November 14, 2006; amended April 10, 2012) to implement the proposed policies and standards outlined in the Millersburg TSP. These ordinances support what is presented in the Millersburg TSP and **may be adopted separately from the Plan itself;** they will need to be adopted soon to comply with TPR.

MILLERSBURG TSP

Multimodal Policy

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MILLERSBURG TSP

THANK YOU!!!

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MillersburgTSP

Transportation System Plan