Agenda
Albany Area Metropolitan Planning Organization (AAMPO)
Policy Board

Date:	Wednesday, January 24, 2018
Time:	2:30 – 4:30 pm
Location:	Oregon Cascades West Council of Governments Upstairs Meeting Room, 1400 Queen Ave. SE, Albany
Contact:	Tarah Campi, Planner II, 541-924-8480

1. 2:30 Call to Order and Agenda Review **Chair Beyerl**

2. 2:35 Public Comment **Chair**

3. 2:40 Minutes of December 19th meeting (Attachment A) **Chair**
Action Requested: Approval of meeting minutes

4. 2:45 RTP Review (Attachment B, C, and D) **DKS Associates**
Action Requested: Review Document; Open Public Comment Period
This is a review of the draft *Regional Transportation Plan* (RTP) which will guide transportation priorities in the AAMPO area. After a 30-day public comment period, the final RTP is expected to be presented for adoption by the Policy Board in March 2018. The *Transit Development Plan*, which has been previously reviewed by the Policy Board, will be presented for Approval, rather than Adoption, also in March.

5. 3:15 Unified Planning Work Program (UPWP) (Attachment E) **Tarah Campi**
Action Requested: Review of Document
This is an initial review of AAMPO's FFY18-19 UPWP, which is slated for federal review in February 2018 and projected AAMPO adoption in spring 2018.

6. 3:30 AAMPO Staffing Update **Phil Warnock**
Also, update on State Transportation Improvement Fund (STIF), transit rulemaking
Action Requested: Information only

7. 3:45 Information Sharing **All**
Action Requested: Discussion only

8. 4:00 Adjourn **Chair**

The meeting location is accessible to persons with disabilities. Sign language, interpreter services or other accommodations can also be provided by contacting Emma Chavez at least 48 hours prior to the meeting. Emma can be reached at 541-967-8551 (TTY/TTD 711) or echavez@ocwcog.org.

ALBANY METROPOLITAN PLANNING ORGANIZATION
POLICY BOARD DRAFT MEETING MINUTES
Wednesday, December 19, 2017
2:30 – 4:30 pm
Oregon Cascades West Council of Governments
Upstairs Conference Room / 1400 Queen Ave. SE, Albany

Policy Board Members Attending: Don Miller, Dave Beyerl, Ray Kopczynski Roger Nyquist, and Gary Powell
Members Absent: Frannie Brindle, Annabelle Jaramillo, and Darrin Lane
Alternates Present: James Feldmann, Georgia Edwards, and Walt Perry
Staff Attending: Tarah Campi, and Emma Chavez

TOPIC	DISCUSSION	DECISION / CONCLUSION
I. Call to Order and Agenda Review		**The meeting was called to order at 2:32 pm by the Chair, Commissioner Roger Nyquist**
II. Public Comments		**There were no comments from the public.**
II. Minutes of October 25, 2017 meeting.		**Consensus from the Policy Board to approve the October 25, 2017 meeting minutes as written.**
IV. Title VI Plan and Audit Overview	AAMPO developed its Title VI Plan in 2014, and updated it in 2015. ODOT held an audit of AAMPO's Title VI Plan during the summer of 2017, and provided a finalized report in November. Members received a copy of the Title VI Plan, and the final report for review. Staff, Campi summarized that AAMPO met or exceeded in all areas except in demographic data collection addressing composition of the Policy Board and TAC. Campi advised that staff has begun outreach to member jurisdictions to begin work in that area. The next Title VI Plan update will be due at the end of 2018.	

V. Regional Transportation Plan (RTP) and Transportation Development Plan (TDP) Review	In the absence of DKS Associates, Campi provided a review of the RTP and TDP and requested a decision from the Board on the RTP Goal-update proposal from the TAC. Campi advised that the TAC has worked with the consultants and has completed their review of the TDP for the Albany area. At their December 12 meeting, the TAC discussed how the TDP should be approved or adopted by the Board. Their recommendation is for the TDP to be approved in March of 2018, without formal adoption, as it's a standalone document. The RTP is scheduled to be adopted in March 2018. Originally, the TDP was requested to be an appendix of the RTP. However, some TAC members felt there would be confusion with regard to future updates. Alternate Walt Perry questioned how the TDP addresses efficiencies to the Albany Transit System (ATS). Campi advised that the TDP addresses short, medium, and long term options, with prioritization being a Call-A-Ride service to small jurisdictions. Campi went on to review the RTP updates, noting that the TAC and RTP TAC have proposed scenarios for enhancing references to transit in the RTP document. They request that more robust references to transit could benefit the AAMPO region in regards to transit funding allocations from House Bill 2017. The TAC requested for the Policy Board to take action on either of the following two options: 1) Create a new Goal (Goal #11) specifically addressing transit, including serving low-income communities. If this option is chosen, staff will provide updated Goal language at the January Policy Board meeting after conferring with the TACs. 2) Include transit-related references throughout the *Policies and Actions* of the existing Goals After discussion, the Board met consensus to use both options.	**Consensus by the Policy Board to use Options 1, and 2 as presented to the Board.**
VI. Safety Performance Measures	MPO's are required to adopt performance measures, starting with Safety Measures due in March 2018. The TAC has discussed the Safety Measures and recommends that AAMPO adopt ODOT's Safety Measures.	**Consensus by the Board for AAMPO to adopt ODOT's Safety Measures as their own.**

	Councilor Ray Kopczynski questioned how crash fatalities would be reduced, or how the goals would be reached. Campi advised that the goals come from the federal Highway Safety Improvement Program (HSIP) and she will follow up report back to the Board.	
VII. Unified Planning Work Program (UPWP)	Campi advised that AAMPO's FFY18-19 UPWP is slated for federal review in February of 2018, with projected adoption in Spring of 2018. Staff has reached out to member jurisdictions for information that may need to be included in the document. Staff will keep the Board posted on this work	
VIII. Membership	Chair Nyquist advised that member jurisdiction offer membership nominations, which are collectively accepted by the MPO. There were no changed to membership. Additionally, a new Chair and Vice-Chair needs to be re-elected each calendar year. Chair Nyquist nominated Councilor Dave Beyerl as Chair, and Councilor Ray Kopczynski and Vice-Chair. Both members accepted and the Board me consensus.	**Consensus by the Policy Board for Councilor Beyerl to serve as Chair, and Councilor Kopczynski to serve as Vice-Chair.**
IX. Information Sharing	Members requested information on the hiring of a new AAMPO Coordinator. Campi advised that the position has been changed to a Transportation Section Manager position within the Community and Economic Development Department of the Oregon Cascades West Council of Governments. Hiring outreach will begin in early 2018. Councilor Kopczynski asked the group if there is anything AAMPO should do to support the transload facility application for Millersburg. Chair Nyquist advised that he thinks four applications were submitted on December 15th. He noted that although AAMPO did not submit a letter of support, Linn County, the City of Albany, and others had submitted a letter supporting the Millersburg site. Campi advised that the RTP draft was also edited to include a transload facility in the area with Millersburg as a potential location.	
X. Adjournment	Meeting adjourned at 3:10 pm.	

Attachment B

Albany Area Metropolitan Planning Organization

Regional Transportation Plan

Adopted by the AAMPO Policy Board on DATE

Prepared by:

Albany Area Metropolitan Planning Organization
Oregon Cascades West Council of Governments
1400 Queen Ave SE, Suite 205, Albany, OR 97322
www.ocwcog.org/AAMPO

DKS Associates in association with:
Nelson/Nygaard
CH2M
David Evans and Associates
Cogito

Adopting Resolution

Resolution Number 2018-1

FOR THE PURPOSE OF APPROVING THE ALBANY AREA REGIONAL TRANSPORTATION PLAN:

WHEREAS, the U.S. Department of Commerce, Bureau of Census has declared that the City of Albany, City of Millersburg, City of Tangent, City of Jefferson and adjoining areas of Linn, Benton, and Marion Counties form an Urbanized Area named the Albany Urbanized Area; and,

WHEREAS, the Albany Urbanized Area has been designated by the State of Oregon as the official Metropolitan Planning Organization (MPO) of the urbanized area; and,

WHEREAS, the US Department of Transportation and Oregon Department of Transportation (ODOT) have designated representatives of the said areas, together with a representative of ODOT, as the Albany Area Metropolitan Planning Organization (AAMPO) to carry out the Metropolitan Transportation Planning Process; and,

WHEREAS, the Regional Transportation Plan provides a financially constrained project list consistent with the projects and priorities identified in the Metropolitan Transportation Improvement Program (MTIP); and,

WHEREAS, the comments received at the committee meetings, Policy Board meetings, and through other forms of communication were considered; and

WHEREAS, the Regional Transportation Plan will serve as the federally required Metropolitan Transportation Plan (MTP) until a Regional Transportation System Plan (RTSP) is adopted to serve as both the MTP and RTSP for the AAMPO; and,

WHEREAS, a public hearing was held on XX date

NOW, THEREFORE, BE IT RESOLVED, that the AAMPO Policy Board adopts the Albany Area Regional Transportation Plan.

PASSED AND APPROVED THIS _____DAY OF ____, 2018, BY THE ALBANY AREA METROPOLITAN PLANNING ORGANIZATION.

SIGNED:

_____

DAVE BEYERL

Albany Area Metropolitan Planning Organization, Policy Board Chair

City of Jefferson, Council Member

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Acknowledgements

Policy Board

Don Miller	City of Millersburg
Ray Kopczynski	City of Albany
Dave Beyerl	City of Jefferson
Annabelle Jaramillo	Benton County
Roger Nyquist	Linn County
Frannie Brindle	Oregon Department of Transportation
Gary Powell	City of Tangent
Darrin Lane	Private Citizen

Regional Transportation Plan Technical Advisory Committee

James Feldmann	Oregon Department of Transportation
Chris Bailey	City of Albany
Laurel Byer	Benton County
Chuck Knoll	Linn County
Darrin Lane	Private Citizen
Lissa Davis	City of Jefferson
Georgia Edwards	City of Tangent
Laurie Starha	Benton County
Jim Stouder	Benton County
Lee Lazaro	Benton County Special Transportation Program
Ron Irish	City of Albany
Mark Volmert	Linn County Special Transportation Program
Barry Hoffman	City of Albany, Albany Transit Service
Carl Ang	Linn County Sheriff's Office
John Pascone	Albany-Millersburg Economic Development Corporation
Cody Meyer	Department of Land Conservation and Development
Jon Goldman	City of Albany
Ted Frazier	City of Albany, Call-A-Ride
Ken Bronson	Sweet Home Senior Center
Jean Palmateer	ODOT Public Transit Division
Steve Dickey	Salem-Keizer Area Public Transit
Edna Campau	City of Jefferson Resident
Ned Conroy	Federal Transit Administration Region 10
Nick Fortey	Federal Highway Administration
Mary Camarata	Oregon Department of Environmental Quality
Ed Moore	Oregon Department of Land Conservation and Development
Bill Holstrom	Oregon Department of Land Conservation and Development

Development of this document was possible with funding from the Federal Highway Administration, the Federal Transit Administration, the Oregon Department of Transportation, and the support and involvement of AAMPO jurisdictions and stakeholders.

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Albany Area MPO Title VI Notice

ALBANY AREA MPO TÍTULO VI COMUNICACIÓN

Title VI of the Civil Rights Act of 1964 states:

"No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

The Albany Area MPO is committed to complying with the requirements of Title VI in all of its programs and activities. Any person who believes she or he has been aggrieved by any unlawful discriminatory practice under Title VI may file a complaint with the Albany Area MPO. A complainant may also file a complaint directly with the Federal Transit Administration by addressing the complaint to the Office of Civil Rights, Attention: Title VI Program Coordinator, East Building, 5th Floor - TCR, 1200 New Jersey Ave., SE, Washington, DC 20590.

For more information about the Albany Area MPO's Title VI / Non-Discrimination Program, including procedures for filing a complaint, contact the AAMPO Coordinator at 541-924-8480; by e-mail to tcampi@ocwcog.org; or by visiting the Albany Area MPO administrative offices at: 1400 Queen Ave SE, Suite 205, Albany OR 97322.

If information is needed in another language, contact (541)-924-8405.

Si se necesita información en otro idioma de contacto 541-924-8405.

Copies of this document are available:

- At the Albany Area MPO website: www.ocwcog.org/transportation/aampo
- At the Oregon Cascades West Council of Governments administrative offices: 1400 Queen Ave SE, Suite 205, Albany, OR 97322

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C: Financially Constrained Scenario Evaluation
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Chapter 1: Introduction

The Albany Area MPO

Metropolitan Planning Organizations (MPOs) are transportation policy-making bodies established for urbanized areas with populations of 50,000 or more. MPOs are intended to establish a continuing, cooperative, and comprehensive planning process for the metropolitan area.

The Albany Area Metropolitan Planning Organization (AAMPO) was formed following the 2010 Census, which determined that the Albany Urbanized Area had surpassed 50,000 in population. AAMPO membership includes the cities of Albany, Jefferson, Millersburg, and Tangent as well as Linn County, Benton County, and the Oregon Department of Transportation.

AAMPO is governed by a Policy Board composed of elected representatives from member jurisdictions. A Technical Advisory Committee (TAC) composed of representatives from member jurisdictions – as well as ex-officio members from the Federal Highway Administration (FHWA), Federal Transit Administration (FTA), the Oregon Department of Land Conservation and Development (DLCD), and the Oregon Department of Environmental Quality (DEQ) – provides technical assistance and support. Staffing is provided through a contract with the Oregon Cascades West Council of Governments (OCWCOG).

Albany Area Planning Context

Geography

The AAMPO planning area is in Oregon's Willamette Valley, in fertile farmland between the Cascade Range and the Coast Range. AAMPO sits 70 miles south of Portland and 45 miles north of Eugene along the Interstate 5 corridor, at its junction with US Highway 20 and Oregon Highway 34. The Union Pacific and Burlington Northern Santa Fe railroads provide mainline connections in all directions and Amtrak offers passenger rail service north and south. A map of the AAMPO planning area is shown in Figure 1-1.

Land Use Patterns

Oregon land use planning regulations require each city to have an urban growth boundary in order to foster compact urban growth and preservation of agricultural and forest lands. This land use pattern creates stretches of rural land uses among AAMPO jurisdictions and between AAMPO and neighboring metropolitan areas. It also creates opportunities for parks, natural areas, and agricultural uses that support local economies.

The communities that make up AAMPO are diverse in size. The City of Albany is the largest city, with a population of 51,670 in 2015, and the most residential, industrial, and commercial development. The three smaller cities – Millersburg, Tangent, and Jefferson – all have fewer

than 3,500 residents. Despite their smaller size, each still has notable industrial development as well as some employment opportunities in government, manufacturing, and skilled trades. Many residents of the smaller cities commute to Albany, Salem, or elsewhere for employment.

The varying size, land use, and geography of the cities within AAMPO generates a contrasting urban and rural character in transportation facilities and users. For example, the majority of Albany has a more traditional urban character, which results in transportation issue priorities such as transit needs, congestion management, and safe crossings of busy roadways for pedestrians. Tangent, on the other hand, has a more-rural/farming community character that is at the edge of urban uses. This "edge" environment creates community concerns for safety as high-speed rural corridors connecting to the urban areas pass through the community and impact livability (as well as creating seasonal friction with slow-moving farm equipment on the roadway). To ensure that the unique needs of each city are reasonably balanced, the broad spectrum of transportation system needs and priorities created by these varying characteristics are important to consider in program development and funding allocations for AAMPO.

Economy

Key economic drivers in the AAMPO area have historically included agriculture and wood products manufacturing, although this has expanded to include rare metals manufacturing, finished building products, and food processing. AAMPOs location along the I-5 corridor has also made the area attractive for warehousing and transportation services.

The broader region has seen growth in the health care and education sectors, which has impacted regional travel patterns and enhanced the interconnectivity of the regional transportation system. Students, faculty, staff, and community members may travel from or through the AAMPO area to get to these regional destinations. The City of Lebanon, 15 miles east of Albany, has seen development of the Western University College of Osteopathic Medicine of the Pacific-Northwest, a Veterans Home, expanded Samaritan Health Services facilities, and the Linn-Benton Community College (LBCC) Alternative Transportation Technology Center. LBCC maintains its main campus in south Albany and additional campuses in Sweet Home and Corvallis. Oregon State University (OSU), located 11 miles west of Albany in Corvallis, has a significant impact on regional travel patterns. Many students, faculty, and staff live in the AAMPO area and commute into Corvallis each day along Highway 20 and Highway 34. In addition, a popular dual-enrollment program with LBCC increases daily travel between the LBCC main campus in South Albany and the OSU campus in central Corvallis.

Census data on commute patterns reflects this regional travelshed, showing that many Albany workers commute from the Corvallis-Philomath area, Salem-Keizer, or Lebanon[1].

[1] US Census Bureau, Center for Economic Studies

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Approximately a third of Albany residents work in Albany. Albany residents who work outside of Albany most often commute to the Corvallis-Philomath area, Salem-Keizer area, or Portland.

Demographics

From 2000 to 2013, the City of Albany's population grew by approximately 24 percent[2]. During that time, the population of youth grew by 26 percent while older adults decreased by almost 12 percent[3]. The number of people earning incomes below the poverty line in Albany grew by 109 percent[4]. Albany also became more diverse, with the number of people identifying as Hispanic/Latino growing by 159 percent[5] and the number of individuals with limited English proficiency growing by 62 percent. The Albany area has a higher percentage of low-income individuals and individuals with disabilities than Linn County and the state as a whole.

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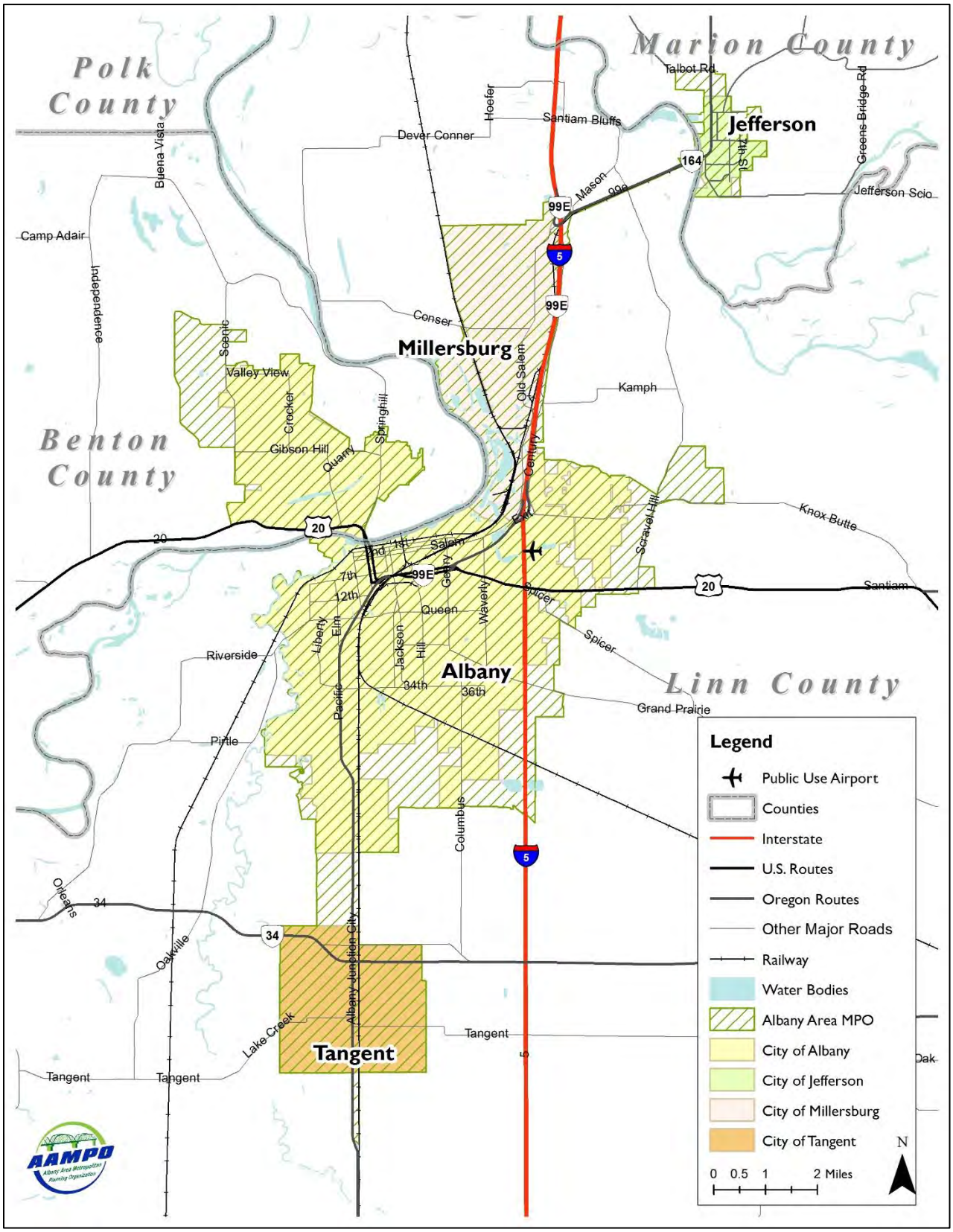
[2] US Census Bureau, American Community Survey, 2009-2013 5-Year Estimates: Table B01003

[3] US Census Bureau, 2000 US Census Summary File 1: Table P012; US Census Bureau, American Community Survey, 2009-2013 5-Year Estimates: Table B01001

[4] US Census Bureau, American Community Survey, 2009-2013 5-Year Estimates: Table C17003

[5] US Census Bureau, American Community Survey, 2009-2013 5-Year Estimates: Table B03002

Figure 1-1: AAMPO Area Map



Source: Oregon Cascades West Council of Governments

Chapter 2: Plan Overview

The Regional Transportation Plan (RTP) establishes a vision for the Albany Area transportation system over a 20-year period. The RTP builds upon policy direction and priorities identified in local planning documents to guide the development and management of the regional transportation system.

To develop a 20-year vision for the multi-modal regional transportation system, information was gathered about what exists today, projected transportation demands through 2040, and gaps in addressing both current and future demand. This information was provided in a series of technical memoranda that correspond closely with the chapters within this document and that are referenced throughout.

Regulatory Framework

All MPOs are required to develop a Regional Transportation Plan (RTP) that identifies transportation system needs and projects for implementation over a 20-year period using Federal, State and local funds (23 CFR 450). Oregon's Transportation Planning Rule (TPR) also directs MPOs to prepare Regional Transportation System Plans (RTSPs) which place a greater emphasis on coordination with land use planning.

Federal guidance states that an MPO's Regional Transportation Plan must:

1. Be consistent with federal transportation policies.
2. Consider a minimum 20-year forecast period.
3. Identify transportation facilities (including major roadways; transit, multimodal and intermodal facilities; and intermodal connectors) that function as an integrated metropolitan transportation system.
4. Emphasize facilities that serve important national and regional transportation functions.
5. Discuss potential environmental mitigation activities (and potential areas to carry them out), including activities with the greatest potential to restore and maintain the environmental functions affected by the plan.
6. Incorporate a financial plan that: (i) demonstrates how the plan can be implemented, (ii) indicates resources from public and private sources that are reasonably expected to be made available to carry out the plan, and (iii) recommends any additional financing strategies for needed projects and programs.
7. Incorporate operational and management strategies to improve the performance of existing transportation facilities to relieve vehicular congestion and maximize the safety and mobility of people and goods.

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8. Incorporate investment and other strategies to preserve the existing and projected future metropolitan transportation infrastructure and provide for multimodal capacity increases based on regional priorities and needs.
9. Incorporate transportation and transit enhancement activities.
10. Incorporate performance measures and targets and a report on system performance and condition.

The planning process should also consider following Eight Planning Factors:

1. Support economic vitality.
2. Increase transportation safety for motorized and non-motorized users.
3. Increase transportation security for motorized and non-motorized users.
4. Increase accessibility and mobility of people and freight.
5. Protect and enhance the environment, promote energy conservation, improve quality of life, and promote consistency between transportation improvements and state and local planned growth and economic development patterns.
6. Enhance the integration and connectivity of the transportation system across and between modes for both people and freight.
7. Promote efficient system management and operation.
8. Emphasize preservation of the existing transportation system.

The Planning Process

The RTP was developed in two phases. In the first phase, the MPO developed an RTP Framework that meets federal requirements and identifies a constrained 20-year project list. In the second phase, the MPO used ODOT's least-cost planning tool, *Mosaic*, to help refine regional priorities and develop the illustrative project list. During the second phase, the MPO also identified strategies to comply with Oregon Transportation Planning Rule (TPR) requirements and completed a Transit Development Plan (TDP).

The RTP Framework, and any other MPO planning documents, was formally approved by the MPO Policy Board. In the second phase, MPO member jurisdictions will be asked to review the RTP and to either make a finding of consistency with their local land use and transportation plans or adopt amendments to those local plans in order to establish consistency.

Public Involvement

Outreach to share the project recommendations and collect opinions focused on North Albany, Albany, Millersburg, Tangent, Jefferson, and Albany areas, and included direct outreach to Title VI populations, transit riders, and businesses. Outreach efforts included discussion of the

recommended 20-year project list as well as two aspirational scenarios (Congestion Management and Capacity Improvement) for further improvement to the transportation system that could be implemented should additional funding become available. Highlights include:

- **Tangent community members** recommended that the plan recognize the agricultural uses of their roads and remember farming activities when planning for future improvements.
- **Jefferson residents** value their schools, care about pedestrian safety and assisting the elderly in getting to appointments. Residents who commute from Jefferson to other areas would appreciate focusing on capacity issues.
- **North Albany residents** are experiencing concerns about traffic impacts of future development and some neighbors in North Albany felt strongly that a bridge would be helpful to ease congestion.
- **Millersburg City Council** generally supported the concept of Congestion Management and expressed concerns about the impacts of a bridge. Millersburg businesses felt their access on and off Interstate 5 works well, but congestion on US 20 and I5 was a major concern**.** Support for a bike lane or sidewalk on Old Salem Road was expressed.
- **Student leaders at Linn Benton Community College** shared that they are concerned about how students get to school (most drive, some take transit). Pedestrian safety was a key concern.
- **Latino leaders** supported the Congestion Management Scenario, especially expanded transit service.
- **Albany Bicycle and Pedestrian Committee** members and other Albany residents supported the Congestion Management Scenario and hoped to expand ridership and access to transit.
- **Helping Hands Homeless Shelter clients** said transit service is essential, and weekend and evening service would be very helpful. They also supported the Congestion Management scenario.
- **Transit riders** shared that they support expanding Commuter Service and are interested in taking transit to nearby cities; the expanded service timeframe of 5 am to 10 am and 2 pm to 7 pm worked best.

Plan Update and Amendment Process

At a minimum, the RTP must be reviewed and updated every five years. In general, plan updates give AAMPO the opportunity to review data, assumptions, and priorities in the plan and to make modifications or updates to ensure continued accuracy and relevance of the document. Amendments to the plan can be made between the five-year updates, although major amendment, such as the addition of a large project, may require a financial-constraint determination.

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Existing Plans and Regulations

Existing land use plans, transportation plans, and other regulatory documents providing guidance within the AAMPO area were reviewed in order to establish a context and foundation for the RTP. Forty-one documents were reviewed to identify existing transportation goals, policies, and objectives; highlight key criteria and standards; and flag any gaps to be addressed through the RTP planning process. Further information is available in *Technical Memoranda #2*.

The documents for review included:

- 6 Transportation System Plans
- 6 Comprehensive Plans
- 2 Capital Improvement Programs
- 4 Park and Recreation Plans
- 2 Public Transit Human Services Plans
- 2 transit agency plans
- 1 regional ITS plan
- 4 separate I-5 plans/studies
- 6 regulatory and/or policy documents, and
- The Oregon Freight Plan
- The Oregon Bicycle and Pedestrian Plan
- The Oregon Highway Plan
- The Oregon Public Transportation Plan
- The Oregon Transportation Plan
- The Oregon Transportation Options Plan
- The Oregon Aviation Plan
- The Albany Municipal Airport Master Plan
- The Albany Area MPO Interim Transportation Improvement Program
- The State Transportation Improvement Plan

Key Themes

Key themes that emerged from the document review include:

- Balancing financial resources with community livability and economic vitality

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- Providing for the safe, convenient, and efficient movement of people and goods within and through the AAMPO area
- Facilitating the flow of goods and services to strengthen the local and regional economy
- Using available resources effectively and responsibly
- Maintaining and preserving the existing transportation system
- Providing sufficient transportation capacity
- Improving safety
- Promoting transportation options
- Ensuring mobility for all citizens, and specifically the transportation disadvantaged

Gaps

Gaps that were identified include:

- **Plan Updates:** Numerous plans reviewed are currently, or soon will be, undergoing updates. This includes the Linn County TSP, Millersburg TSP, Benton County TSP, Marion County TSP, Linn County Coordinated Plan, Benton-Lincoln Coordinated Plan, Jefferson Comprehensive Plan, Albany Parks and Recreation Master Plan, and Albany Airport Master Plan. In addition, several plans are relatively old and the data, regulatory references, and findings from those plans may be out of date. These plans primarily include the Jefferson Comprehensive Plan, Benton County TSP, and Marion County TSP. The Tangent TSP and I-5 planning processes also include data that may be out-of-date.
- **Federal Regulatory Changes:** MAP-21 instituted a new emphasis on performance management for MPO planning processes that will need to be considered as the AAMPO RTP process builds off of Transportation System Plans, Capital Improvement Programs and other planning documents written prior to MAP-21. The Federal Functional Classification System as updated following the formation of the MPO should be used for the AAMPO RTP process.
- **Federal Funding Changes:** Federal funding programs, funding levels, and funding streams changed with the establishment of the MPO, particularly as related to transit capital, operations and planning funds. These changes should be considered when utilizing planning and programming documents related to public transportation. For example, Albany Transit Service began receiving 5307 urban transit funds in place of the rural 5311 transit funds and the target amount of 5310 senior and disabled public transportation fund was established for the urbanized area.
- **State Regulatory Changes:** Numerous updates were made to the State of Oregon guidance for transportation planning. These include: Transportation Planning Rule amendments in 2005 and 2012, including redefining mobility ‘standards’ as ‘targets’ and an allowance for alternative measures outside of v/c ratio; Access Management Rules (OAR 734-051) saw significant revisions in 2011, and the OHP saw related revisions in 2012; A requirement that

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Special Transportation Areas have a management plan when the STA is on a Statewide Highway.

- **New Requirements Associated with the MPO:** Oregon TPR establishes several additional requirements for MPOs. These include: a parking plan in MPO areas (OAR 660-012-045(5)(c)); establishment of VMT reduction targets or alternative measures for MPO areas; and, requirements that local jurisdictions provide notice to MPOs of development proposals in which they may have an interest.

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Chapter 3: Goals, Policies, and Objectives

The RTP goals and policies provide a foundation for transportation plans, projects and programs completed within the MPO planning area. Each goal and policy was developed by the MPO in concert with local plans, and Transportation System Plans in particular. As the local and regional circulation patterns are intertwined, continual coordination between local jurisdictions and the MPO is critical to achieving these regional goals.

This chapter contains a hierarchy of four planning elements:

- **Goals:** Broad statements about the region's desired outcomes. A goal is an aspirational statement identifying a principal that will influence how decisions are made about transportation investments.
- **Policies:** Statements describing the approach that the MPO will use to guide the region toward each goal.
- **Potential actions:** Projects or regulatory measures that may be implemented to achieve the identified goals.
- **Objectives:** Measureable outcomes that indicates whether a policy is achieved. These objectives also address the performance-based planning requirements established in MAP-21.

Goal 1

Provide for a balanced and multi-modal regional transportation system that meets existing needs and prepares for future needs.

Policies

1.1. Improve the accessibility, connectivity, efficiency and viability of the transportation system for all users

1.2. Maximize efficiency of existing regional roadway system

1.3. Maintain acceptable roadway and intersection operations

1.4. Protect the ability of major arterials to serve regional traffic while maintaining local connectivity to community activity centers

1.5. Maintain and enhance transit service

1.6. Preserve and protect transportation corridors essential to regional economic vitality

1.7. Ensure that the benefits and impacts of the transportation system are socially equitable

1.8. Support improvements to the bus transit and passenger rail systems, which demonstrate positive community impacts

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1.9. Define priorities and incremental steps needed for investment of ODOT and Federal revenues to address safety and major capacity problems on the State and Interstate transportation system serving the AAMPO planning area

1.10. Maintain the condition of the highway system infrastructure

1.11. Plan for transportation improvements that are needed to support future growth, economic vitality, and transportation system needs, including transit and other non-single occupancy vehicle travel options for employment uses

1.12. Strengthen public transit programs and, where possible, utilize these programs to provide services to seniors, persons with disabilities, and low-income households

1.13. Provide a transportation system that serves a balance of transportation modes

Potential Action

- Add roadways, as identified in adopted plans, to increase regional connectivity
- Upgrade intersection capacity to meet future demand
- Implement or promote transportation options to meet future demand
- Provide wayside information dissemination on key regional routes
- Add video surveillance to improve incident detection and verification
- As transportation facilities are developed, incorporate design standards, landscaping and other amenities to encourage walking, bicycling, and transit opportunities
- Improve transit route schedule reliability while retaining coverage by extending frequencies to over 90 minutes in the short-term and adding weekday evening service
- Improve transit frequencies by implementing a 6-route system with buses every 60 minutes (30-minutes on some routes)
- Build a new transit maintenance facility to accommodate a larger transit system
- Construct transit-related facilities, including bus shelters

Objectives

- Reduce regional corridor travel times
- Reduce hours of congestion
- Reduce user travel costs
- Increase walking, bicycling and transit mode shares
- Increase travel reliability
- Increase transit frequency and reliability
- Reduce Vehicle Miles Traveled (VMT) per capita
- Maintain the transportation system in a state of good repair

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Goal 2

Enhance regional and intermodal connectivity for movement of all modes within the MPO as well as between the MPO and other areas.

Policies

2.1. Employ access management strategies to maintain existing highway functionality

2.2. Increase transportation options to community activity centers such as schools, parks, employment and shopping areas, and major transit stops

2.3. Enhance freight connectivity to industrial centers and freight terminals

2.4. Improve regional and local transportation system connectivity for non-motorized travel.

2.5. Strengthen regional partnerships to improve coordination, connectivity, accessibility, and efficiency of transit services

Potential Action

- Fill gaps in bicycling and pedestrian infrastructure on regional corridors
- Enhance pedestrian crossings near community activity centers
- Develop and apply spacing criteria for streets, bikeways and pedestrian access ways
- Enhance regional transit connectivity and improve coordination/partnerships with transit service providers within the AAMPO area, including updating system maps, branding, and marketing
- Improve connections with regional transit services at Albany Station and Linn-Benton Community College
- Coordinate schedules with the Linn Shuttle to provide frequent service along OR 99E from Linn-Benton Community College to Albany Station
- Develop a shared regional website for public transportation
- Explore coordinated changes to increase efficiency and the reach of the Linn-Benton Loop

Objectives

- Increase the percentage of the population within a maximum travel time between work and home
- Encourage the location of future industrial job centers near the freight network
- Improve transit frequency and coverage in high employment and dense residential areas
- Increase the total length of regional multi-use paths and bike boulevards
- Increase sidewalk coverage on regional corridors
- Reduce out-of-direction travel

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Goal 3

Increase the safety and security for all travel modes on the regional system.

Policies

3.1. Improve safety on the regional system at locations with existing safety issues

3.2. Ensure that consistent security policies are practiced for all regional air, freight, pipeline, and roadway systems to reduce the risk of outside tampering

3.3. Coordinate with emergency-response agencies to design and operate a transportation system that supports timely and safe response

3.4. Reduce vulnerability of the public, goods movement, and critical transportation infrastructure to crime, emergencies and natural hazards

3.5. Improve safety and security for multimodal system users to enhance comfort and viability of system use for pedestrians, bicyclists, and transit riders

Potential Action

- Select projects designed to improve safety at known accident prone locations
- Consider safety for all users when considering and developing transportation projects
- Work with other agencies to promote traffic safety education and awareness
- Place a higher priority on investments that address safety-related deficiencies at high crash locations
- Place a high priority on investments that address bridge maintenance needs for seismic event resiliency
- Improve system connectivity to enhance emergency response and natural disaster response travel route options
- Use All Roads Transportation Safety (ARTS) program to model system safety needs
- Identify bridge condition needs

Objectives

- Improve system resiliency for seismic and other natural events
- Reduce total fatal and injury crashes
- Reduce total property damage only accidents
- Reduce emergency response times
- Minimize conflicts along high-volume and high-speed corridors
- Reduce fatalities and injuries to pedestrians and bicyclists.

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Goal 4

Protect the natural and built environment.

Policies

4.1 Maintain acceptable roadway and intersection operations where feasible considering environmental, land use, and topographical factors

4.2 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

4.3 Reduce the regional carbon footprint by reducing stopped delay, trip lengths, and vehicle miles traveled

4.4 Increase multi-modal access to public parks and nature reserves to better expose the public to the benefits of environmental stewardship

4.5 Reduce single-auto trip dependence

Potential Action

- Implement transit system enhancements designed to shift trips from single-auto to transit
- Reduce environmental impacts through design for proper drainage and treatment
- Improve pollinator habitat by developing Integrated Vegetation Management (IVM) standards for roadside areas

Objectives

- Reduce total air contaminates and toxins created by the regional transportation system
- Reduce total impacts on life cycle CO2 caused by the transportation system
- Reduce transportation system related risks to the natural, built, and cultural resources

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Goal 5

Preserve the mobility of existing freight routes to ensure the efficient movement of goods throughout the region for existing freight movements and future opportunities.

Policies

5.1. Connect any existing system gaps between different freight modes

5.2. Promote efficient freight access to regional and state road, rail, airport and port infrastructure

5.3. Use judicious access management regulation to protect existing roadway freight routes

5.4. Provide freight system improvements that promote job growth and enhance employment opportunities

Potential Action

- Implement projects designed to enhance the safety of rail crossings
- Ensure projects on regional roadway freight corridors include geometric design considerations for large trucks, including addressing regional pinch-points
- Coordinate with external agencies to address the needs of critical freight connections outside the MPO that are needed to serve uses in the MPO
- Support implementation of an intermodal freight facility in Millersburg

Objectives

- Increase total number of jobs by enhancing freight mobility
- Reduce transportation costs by industry (business travel and freight)
- Increase in productivity by increasing connectivity
- Increase total value of exports and imports

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Goal 6

Demonstrate responsible stewardship of funds and resources.

Policies

6.1. Prioritize preservation of the existing system

6.2. Confirm that all funded projects meet high priority regional system needs

6.3. Maximize the cost effectiveness of transportation improvements

6.4. Encourage public/private partnerships

6.5. Leverage access to federal funding for large-scale regional transportation projects

6.6. Identify and secure realistic, equitable, and sustainable funding, including the use of local resources to leverage federal and state funding, for transit services, facilities, and equipment

6.7. Support interjurisdictional coordination to improve project delivery and leverage funding opportunities

6.8. Encourage coordination and partnerships among public agencies within the MPO that promotes opportunities for additional external funding for the region

6.9. Seek opportunities for additional funding sources

6.10. Support volunteer programs and state human service agencies that provide public transportation services

6.11. Provide reasonable and sustainable staff resources to support implementation of the Regional Transportation Plan

Potential Action

- Develop a fiscally constrained project list designed to meet the most critical transportation needs within the region
- Apply for federal grants for major regional projects
- Consider alternative methods to supplement road maintenance funding, such as local gas tax
- Work with federal and state partners to advocate for and support efforts to secure strategic and sustainable investments in transit infrastructure, including vehicles
- Install automatic vehicle locators and other on-board equipment on transit vehicles to improve efficiency and customer information

Objectives

- Minimize capital costs when possible
- Reduce system lifecycle costs through advance planning
- Increase total transportation revenue

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- Increase the share of lifecycle funds that are new or recycled
- Minimize the net impact on state and regional fiscal balance
- Retain funding allocations for maintaining the existing transportation system (such as pavement and bridge improvement projects)

Goal 7

Coordinate transportation and land use decision-making to foster collaboration and to encourage development patterns which increase transportation options, encourage physical activity, and decrease reliance on the automobile.

Policies

7.1. Work towards consistency among local and regional transportation and land use policies

7.2. Use transportation investments to foster compact and mixed-use employment and residential land development within the region consistent with local agencies vision of a balanced land use pattern

7.3. Assess regional travel impacts of all major land use decisions

7.4. Encourage region wide jobs and population growth while protecting character and connectivity of local communities

7.5. Encourage the integration of transit, bicycle, and, pedestrian facilities into site designs for community activity centers such as schools, parks, employment and shopping areas, and major transit stops to promote safe and efficient access to and through the site

7.6. Parking space requirements integrate land use and transportation options.

Potential Action

- Encourage incorporation of mixed employment and housing land use policies into Urban Growth Boundary updates
- Review minimum and maximum parking requirements
- Assess site plan review and traffic impact study requirements for on-site pedestrian and bicycle facilities

Objectives

- Achieve balanced growth in housing and employment
- Support population and employment density in city and neighborhood centers as defined in local Comprehensive Plans
- Increase relative land values
- Provide opportunities for rural locations that have less commercial options

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Goal 8

Provide for a transportation system with positive personal health impacts.

Policies

8.1. Identify and support beneficial public health impacts when planning and funding transportation projects

8.2. Support physical activity by maintaining existing recreational corridors and increasing recreational connectivity where feasible through opportunities including parks, open space, and greenways

8.3. Support active transportation options

8.4. Ensure that the transportation system provides adequate access to health services and resources

8.5. Reduce conflicts between transportation modes to create a transportation system that is safe and comfortable to navigate

Potential Action

- Increase multi-use path connections to parks
- Promote coordination among public transportation providers to improve efficiencies of service delivery
- Support Safe Routes to School programming

Objectives

- Improve health and wellness of the general population by increasing active transportation choices and access to care facilities
- Increase the quality of the travel environment
- Reduce transportation related noise impacts

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Goal 9

Provide for a diversified transportation system that ensures mobility for all.

Policies

9.1. Provide greater transportation options for those who are transportation disadvantaged

9.2. Ensure that those who are transportation disadvantaged have full access to the regional transit and active transportation systems

9.3. Maintain and improve accessibility of the public transportation/transit system

9.4. Improve accessibility of transportation facilities servicing community activity centers such as schools, parks, health care services, employment and shopping areas

9.5. Support transit and other non-single occupancy vehicle travel options so that users do not become reliant on a single mode of travel

Potential Action

- Develop projects to increase transit service to low income neighborhoods, including improving connections to regional transit services and improving coordination/partnerships with transit service providers within the AAMPO area
- Consider demand responsive transit service options

Objectives

- Distribute transportation system user benefits evenly across all population groups
- Reduce total particulate matter emissions evenly across all population groups
- Distribute health benefits of active transportation across all population groups

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Goal 10

Provide an open and balanced process for planning and developing the transportation system.

Policies

10.1. Foster a dialog and coordination between city, county and state entities within the MPO and regional partners including other Metropolitan Planning Organizations (MPOs) and Area Commissions on Transportation (ACTs).

10.2. Ensure that all affected jurisdictions have a say in major regional transportation decisions

10.3. Conduct outreach consistent with the AAMPO Public Participation Plan to acquire input in the planning process

10.4. Decisions will be consistent with applicable state and federal regulations

Potential Action

- Include regional participation in local planning projects by requiring notifications to potentially affected agencies in capital project or development review processes
- Create a process for on-going updates to local agency transportation system plans and the RTP to ensure consistency as plans are amended and to capture future opportunities

Objectives

- Provide guidance to enable local jurisdictions to create adopt goals and projects in concert with the overall regional goals and policies
- Foster plan support through transparent process.

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Goal 11

Provide a coordinated and integrated transit program to provide a safe, efficient, and affordable sustainable transportation option.

Policies

11.1. Maintain and enhance transit service

11.2. Maintain and improve accessibility of the public transportation/transit system

11.3. Support improvements to the bus transit and passenger rail systems, which demonstrate positive community impacts

11.4. Plan for transportation improvements that are needed to support future growth, economic vitality, and transportation system needs, including transit and other non-single occupancy vehicle travel options for employment uses

11.5. Support transit and other non-single occupancy vehicle travel options so that users do not become reliant on a single mode of travel

11.6. Encourage the integration of transit, bicycle, and, pedestrian facilities into site designs for community activity centers such as schools, parks, employment and shopping areas, and major transit stops to promote safe and efficient access to and through the site

11.7. Parking space requirements integrate land use and transportation options.

11.8. Improve accessibility of transportation facilities servicing community activity centers such as schools, parks, health care services, employment and shopping areas

11.9. Strengthen public transit programs and, where possible, utilize these programs to provide services to seniors, persons with disabilities, and low-income households

11.10. Ensure that those who are transportation disadvantaged have full access to the regional transit and active transportation systems

11.11. Improve safety and security for multimodal system users to enhance comfort and viability of system use for pedestrians, bicyclists, and transit riders

11.12. Strengthen regional partnerships to improve coordination, connectivity, accessibility, and efficiency of transit services

11.13. Identify and secure realistic, equitable, and sustainable funding, including the use of local resources to leverage federal and state funding, for transit services, facilities, and equipment

11.14. Support volunteer programs and state human service agencies that provide public transportation services

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Potential Action

- As transportation facilities are developed, incorporate design standards, landscaping and other amenities to encourage walking, bicycling, and transit opportunities
- Improve transit route schedule reliability, while retaining coverage, by extending frequencies to over 90 minutes in the short-term and adding weekday evening service
- Improve transit frequencies by implementing a 6-route system with buses every 60 minutes (30-minutes on some routes)
- Build a new transit maintenance facility to accommodate a larger transit system
- Construct transit-related facilities, including bus shelters
- Enhance regional transit connectivity and improve coordination/partnerships with transit service providers within the AAMPO area, including updating system maps, branding, and marketing
- Improve connections with regional transit services at Albany Station and Linn-Benton Community College
- Coordinate schedules with the Linn Shuttle to provide frequent service along OR 99E from Linn-Benton Community College to Albany Station
- Develop a shared regional website for public transportation
- Explore coordinated changes to increase efficiency and the reach of the Linn-Benton Loop
- Work with federal and state partners to advocate for, and support efforts to, secure strategic and sustainable investments in transit infrastructure, including vehicles
- Install automatic vehicle locators and other on-board equipment on transit vehicles to improve efficiency and customer information
- Review minimum and maximum parking requirements
- Develop projects to increase transit service to low income neighborhoods, including improving connections to regional transit services and improving coordination/partnerships with transit service providers within the AAMPO area
- Consider demand responsive transit service options

Objectives

- Increase transit frequency and reliability
- Reduce Vehicle Miles Traveled (VMT) per capita
- Increase walking, bicycling and transit mode shares
- Increase the percentage of the population within a maximum travel time between work and home
- Improve transit frequency and coverage in high employment and dense residential areas
- Reduce total air contaminates and toxins created by the regional transportation system
- Reduce total impacts on life cycle CO2 caused by the transportation system
- Increase the quality of the travel environment
- Distribute transportation system user benefits evenly across all population groups
- Reduce total particulate matter emissions evenly across all population groups

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Chapter 4: Existing Transportation System

The existing regional transportation system was assessed to identify current deficiencies and needs and to help identify needs through 2040. Each component of the multimodal system was reviewed: roadways, public transportation, pedestrian facilities, bicycle facilities, rail freight, air travel, waterways, intelligent transportation system infrastructure, transportation demand management, pipelines, and other transport facilities, as applicable.

The full assessment of existing transportation system is available in Technical Memoranda #4 Existing Transportation Conditions and #5 Existing Transit Conditions. Technical Memorandum #6 Environmental Considerations includes a review of environmental, cultural and historical resources in the MPO area that may be impacted by the transportation system.

Traffic Safety

Crash data for the most recent five years available (2009-2013) on all roadways within the AAMPO area were obtained from ODOT. There were 3,022 reported vehicle crashes within the AAMPO area during the five-year span shown in Figure 4-2, yielding an average of over 605 crashes per year. Of the 3,022 vehicle crashes, there were 18 fatalities, 61 incapacitating injuries, 423 non-incapacitating injuries, 961 possible injuries and 1,559 property-damage-only crashes. An incapacitating injury prevents the injured person from executing activities the person was capable of prior to the crash (e.g. walking, driving) while a non-incapacitating injury has visible evidence of an injury without any impact on executing activities (e.g. bruise, minor bleeding). Possible injuries are characterized by a complaint of pain but no visible evidence.

ODOT maintains a Safety Priority Index System (SPIS) to identify potential safety problems on state highways. The SPIS network screening process aims to identify sites with higher crash histories that have promise as sites for potential safety improvements. Each highway segments is broken into one-tenth of a mile sites and sites are ranked in terms of safety cost effectiveness. Each year ODOT develops a list of SPIS sites in the top 10%. AAMPO area SPIS Sites, also shown in Figure 4-1, further flag areas of potential concern.

In addition, crashes reported by the Albany Police Department between January 1, 2014 and August 13, 2015 were collected. During this time, there were a total of 778 crashes. Broken down by severity there were two fatalities, 193 non-fatal injury crashes and 583 property-damage-only crashes. The fatalities and non-fatal injury crashes are identified in Figure 4-2. Both fatal crashes occurred in Albany, Oregon. One fatal crash occurred at the intersection of OR 99E/Belmont Avenue and the other fatal crashes occurred at the intersection of US 20/Clay Street. US 20/Clay Street is identified by the ODOT All Roads Transportation Safety Program, described below, as a crash hot-spot. There are several driveways (i.e. conflict points) near this location to provide access to Heritage Plaza Shopping Center.

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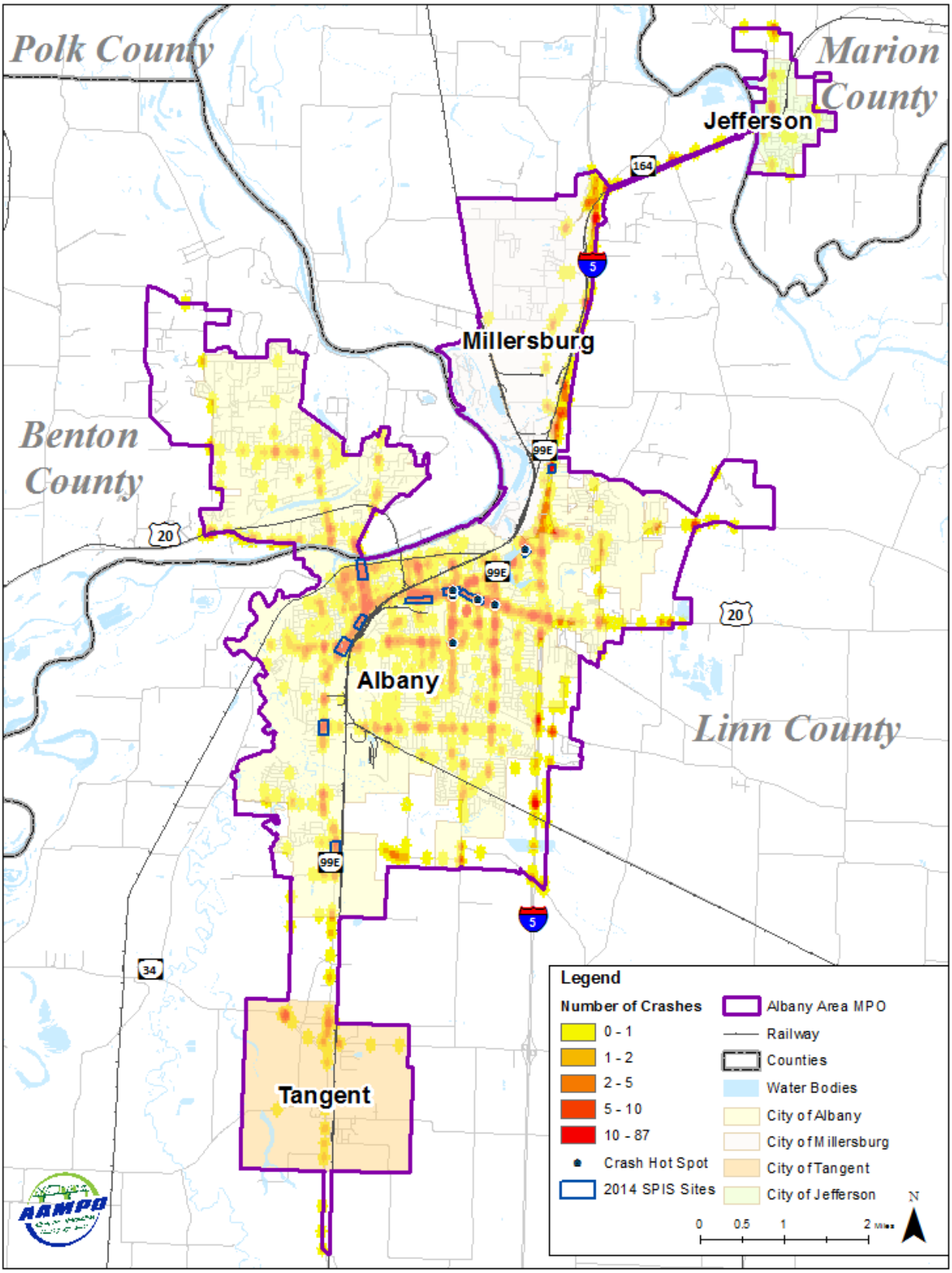
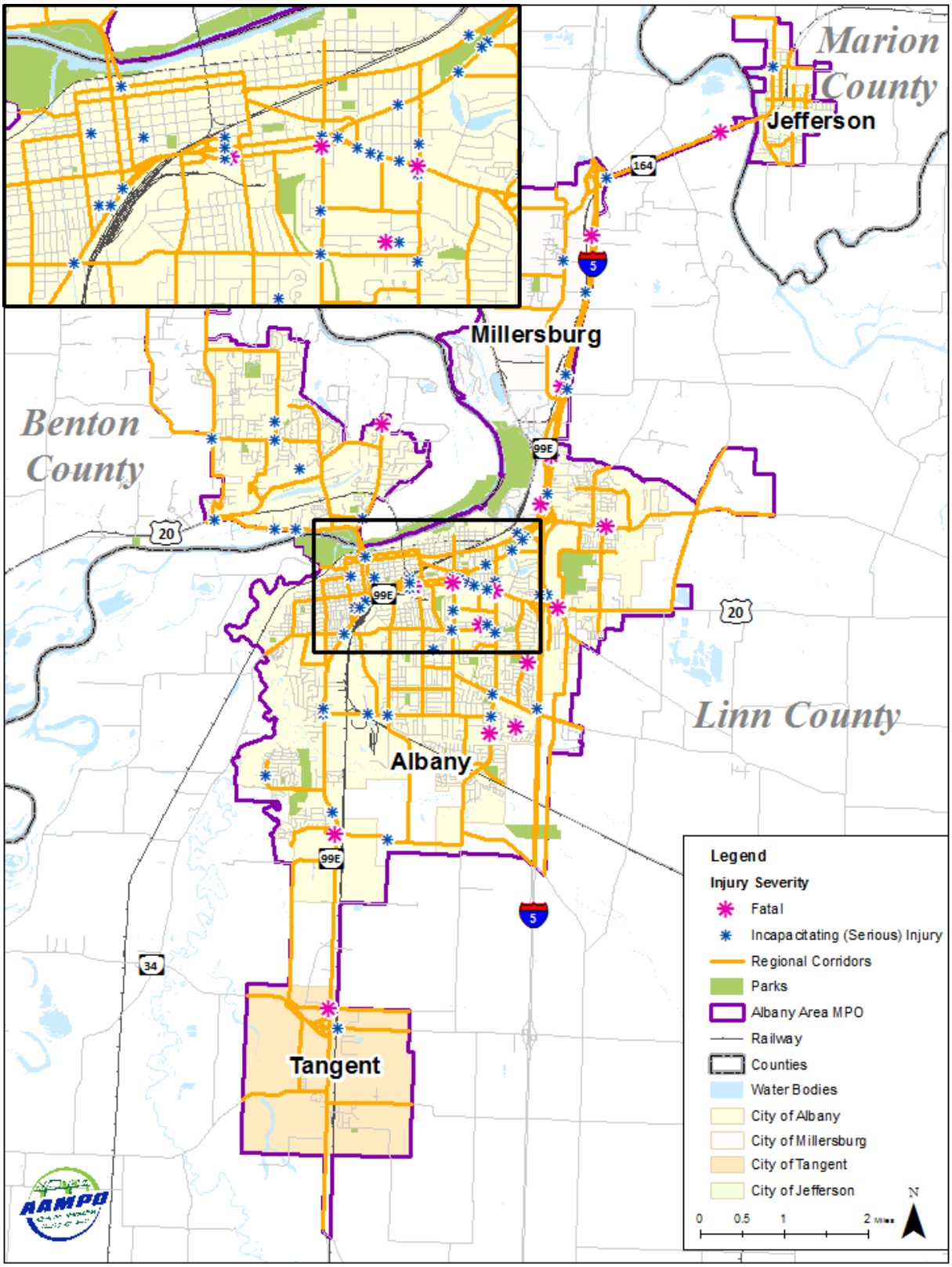
Figure 4-1: AAMPO Vehicle Crashes and Hot-Spots (2009-2013) and 2014 SPIS Sites



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Figure 4-2: AAMPO Vehicle Fatal and Serious Injury Crashes (2009 -2013)



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

The individual crash types at study intersections were examined to see if any patterns would emerge and to identify problem areas in need of mitigation. Table 4-1 breaks down the crash types and severities experienced at the study intersections, along with critical crash rates and observed crash rates.

To evaluate the intersection, the observed crash rate, which describes the frequency of crashes per million entering vehicles (MEV), is compared with the critical crash rate, which is unique to each intersection and is a factor of crash rates at similar sites within the study area, traffic volume, and a 95th percentile confidence level[6]. Intersections with an observed crash rate greater than the critical crash rate warrant further review. Four study intersections, highlighted in Table 4-1 and described below, were found to have crash rates higher than their critical crash rate.

Table 4-1: Albany Area MPO Crash Rates at the Study Intersection (2009-2013)

Study Intersection	Crash Type				Crash Severity			Total	Critical Crash Rate[A] (per MEV[B])	Observed Crash Rate (per MEV*)
	Rear	Angle	Turn	Other	PDO	Injury	Fatal			
Jefferson Hwy (OR 164)/North Avenue	4	0	1	1	2	4	0	6	0.64	0.39
Jefferson Hwy (OR 164)/Main Street	6	1	6	1	3	11	0	14	0.76	0.66
Jefferson Hwy (OR 164)/Scravel Hill Road	1	3	2	2	5	3	0	8	0.63	0.48
Jefferson Hwy (OR 164)/I-5 NB Ramps	2	0	4	1	2	5	0	7	0.65	0.47
Jefferson Hwy (OR 164)/I-5 SB Ramps	1	0	2	3	3	3	0	6	0.71	0.58
Century Drive/I-5 NB Ramps	0	0	2	3	3	2	0	5	0.90	1.00
Old Salem Road/I-5 SB Ramps	1	0	1	5	5	2	0	7	0.65	0.47
Pacific Highway (OR 99E)/Albany	16	2	12	8	22	16	0	38	0.64	0.61

[6] *Analysis Procedures Manual Version 2*, Oregon Department of Transportation, June 2015.

Study Intersection	Crash Type				Crash Severity			Total	Critical Crash Rate[A] (per MEV[B])	Observed Crash Rate (per MEV*)
	Rear	Angle	Turn	Other	PDO	Injury	Fatal			
Avenue & Airport Road										
Century Drive&I-5 NB Off Ramp/Knox Butte Road	3	3	4	2	5	7	0	12	0.55	0.37
Clover Ridge Road/Knox Butte Road	0	0	0	0	0	0	0	0	0.59	0.00
Scravel Hill Road/Knox Butte Road	1	6	1	1	1	8	0	9	0.74	**0.99**
Scravel Hill Road/Santiam Highway (US 20)	3	1	0	4	4	4	0	8	0.61	0.42
Fescue Street/Santiam Highway (US 20)	18	0	5	2	15	10	0	25	0.66	0.48
Airport Road/Santiam Highway (US 20)	16	4	5	0	11	14	0	25	0.65	0.43
Waverly Drive/Santiam Highway (US 20)	36	5	15	5	31	29	1	61	0.64	**0.96**
Waverly Drive/ Pacific Highway (OR 99E)	23	5	3	3	16	18	0	34	0.65	0.61
Queen Avenue/ Pacific Highway (OR 99E)	33	4	8	1	25	21	0	46	0.64	**0.70**
Waverly Drive/34th Avenue	7	0	4	0	6	5	0	11	0.71	0.35
Pacific Highway (OR 99E)/53rd Avenue	3	0	1	1	3	2	0	5	0.69	0.13

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Study Intersection	Crash Type				Crash Severity			Total	Critical Crash Rate[A] (per MEV[B])	Observed Crash Rate (per MEV*)
	Rear	Angle	Turn	Other	PDO	Injury	Fatal			
Three Lakes Road/Seven Mile Lane	1	0	0	1	1	1	0	2	0.83	0.32
Ellsworth Street (US 20)/1st Avenue	11	1	3	2	9	8	0	17	0.69	0.47
Ellsworth Street (US 20)/2nd Avenue	2	3	1	2	4	4	0	8	0.68	0.20
Lyons Street (US 20)/1st Avenue	5	12	1	3	15	6	0	21	0.68	0.53
Lyons Street (US 20)/2nd Avenue	7	7	1	3	9	9	0	18	0.69	0.47
Springhill Drive/ Albany-Corvallis Highway (US 20)	14	0	1	3	8	10	0	18	0.63	0.26
North Albany Road/ Albany-Corvallis Highway (US 20)	11	0	1	0	5	7	0	12	0.66	0.24
Scenic Drive/Albany-Corvallis Highway (US 20)	0	0	3	2	2	3	0	5	0.53	0.13
Scenic Drive/Gibson Hill Road	0	0	1	1	1	1	0	2	0.73	0.21

Notes: Bolded Red and Shaded indicates a high crash rate compared to other similar intersections in the AAMPO area.
[A] Critical crash rate calculated based on 95% confidence level.
[B]MEV = Million entering vehicle

The following intersections have crash rates higher than their critical crash rate.

- **Century Drive/I-5 NB Ramps.** This intersection experienced a crash rate higher than similar facilities within the AAMPO area. The posted speed limit along I-5 near this interchange is 65 mph while the advisory off-ramp speed is 25 mph. The off-ramp is relatively short and

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consists of a sharp horizontal curve. Century Drive also has a high posted speed limit, 55 mph.

- **Scravel Hill Road/Knox Butte Road.** The crash rate estimated at the intersection of Scravel Hill Road/Knox Butte Road is higher than similar facilities. A majority of the crashes at this intersection were angled crashes (e.g. a vehicle traveling north to south colliding with a bicycle traveling east to west on the intersecting street) resulting in an injury. The posted speed limit along Knox Butte Road is 45 mph, while the posted speed limit on Scravel Hill Road, stop-controlled, is 55 mph. The north leg consists of a vertical and horizontal curve that may limit sight distance. The east leg of the intersection is slightly skewed.
- **Waverly Drive/Santiam Highway (US 20).** This intersection has a higher than average crash rate for a signalized intersection. There were a total of 75 crashes at this intersection. Theses crashes consisted mainly of rear-end crashes or involved a turning movement. This intersection was also identified as an ODOT ARTS crash hot-spot, described below. There are a considerable number of access points near the intersection and limited lighting (only one luminaire). There was one fatality recorded at the intersection, which involved a pedestrian at night.
- **Queen Avenue/ Pacific Highway (OR 99E).** The intersection of Queen Avenue/OR 99E experienced a higher crash rate than similar facilities within the AAMPO area and was also identified as a crash hot-spot, described below. The majority of the 55 crashes that occurred at this intersection resulted in a rear-end crash. This intersection is skewed with vehicles traveling at high speeds (55 mph) along OR 99E.

System Management

System Management refers to transportation strategies or programs that help optimize the existing infrastructure through use of advanced technology (to optimize facility performance) or by reducing peak period travel demand (to reduce congestion). These management strategies work together to enhance both the supply and demand sides of the transportation system.

Intelligent Transportation Systems

An intelligent transportation system (ITS) is a technology, application, or platform that can be deployed to monitor, manage, and improve the transportation system for all users. Within the AAMPO, there are many ITS elements in use that assist travelers.[7]

The most ubiquitous use of ITS is the region's traffic signal system. ODOT is responsible for the traffic signals along US 20 (Santiam Hwy) and 99E. The City of Albany is responsible for the traffic signals along:

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

- 14th Avenue
- 34th Avenue
- North Albany Road
- Knox Butte Road
- Queen Avenue
- Salem Avenue
- Waverly Drive

AAMPO also has a variety of ITS devices in use. There are ITS systems along I-5, including a dynamic message sign for northbound travelers in Millersburg, highway advisory radio in North Albany, traffic count station at Knox Butte Road and a closed-circuit television video (CCTV) camera in Millersburg. In addition to traffic signals, ITS devices on the arterial network include a fixed-mount red light enforcement camera at the intersection of Queen Avenue/Geary Street.

There are several planned enhancements to the ITS infrastructure within the AAMPO area including additional CCTV cameras in Tangent and Albany and a dynamic message sign I-5 (SB) in Millersburg.

The Northwest Transportation Operations Center (NWTOC) in Salem is used by ODOT to manage the state highway system for all of Region 2, which includes AAMPO. The NWTOC operates 24 hours, seven days a week. Operators at the NWTOC perform the following functions:

- Traffic Management: Operation of traffic control devices
- Incident Management: Detection/identification, response (e.g. dispatch), and management of incidents
- Maintenance Support: Dispatch and communications for ODOT maintenance crews
- Information Service Provider: Dissemination of traveler information to the public regarding events that impact the highway.

ODOT Region 2 operates a traffic incident response (TIM) program that assists motorists and addresses events, like crashes or debris on the roadway, that inhibits travel. There are three full-time incident responders serving District 4, which includes AAMPO, that provide seven-day-a-week coverage along I-5 and US20.[8]

ODOT's TripCheck website (www.tripcheck.com) is a traveler information web site for real-time traffic information. The TripCheck site includes camera images, road conditions, weather information, incident maps, and construction activity for the state. ODOT continues to add information to TripCheck as new equipment is deployed. The TripCheck Local Entry Tool (TLE) is an application available to local agencies to upload local traffic impacting events, such as road closures, construction, and special events, to TripCheck.

[8] Oregon Traffic Incident Management Strategic Plan, DKS Associates, 2015.

Transportation Demand Management

The Oregon Cascades West Council of Governments (OCWCOG) manages a Transportation Demand Management (TDM) program serving much of the AAMPO area. Through the program, OCWCOG helps employers implement commuter benefit programs, educates the public about transportation options, and advocates for transportation options. OCWCOG staffs Cascades West Rideshare, a regional vanpool and carpooling program for Linn, Lincoln, and Benton Counties. The Salem Area Mass Transit District provides similar services for Jefferson (in Marion County), including staffing the Cherriots Rideshare carpool and vanpool program. Both are part of a regional network which coordinates commuter vanpools throughout the Central Willamette Valley and on the Central Oregon Coast.

Several Park and Ride lots are located in the MPO area to facilitate carpooling and transferring to other modes. There may be additional sites, or informal sites, that are not accounted for.

- Santiam Highway and Spicer Drive, at I-5 in Albany (30 spots, 2 ADA compliant)
- Hickory Drive in North Albany (40 spots, 2 ADA compliant. 4 bike parking spots. 4 bike lockers. Stop for ATS routes 1 and 3)
- I-5 and Highway 34 junction, east of Tangent (40 spots)
- I-5 & Highway 164 Junction (20 spots)

Public Transportation

The Albany Area MPO is served by a small urban transit system. Several rural and statewide services also provide connectivity within the MPO and to surrounding areas. Below is a summary of these and other regional public transportation services in the MPO area. More information is available in *Technical Memorandum #5 Existing Transit Conditions*.

Fixed Route System

The Albany Transit System (ATS) operates three local fixed routes, Monday through Friday, at 60-minute frequencies. These routes, along with key regional fixed-route services are shown in

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Figure 4-3. Route 1 operates throughout most of Albany only during the early morning. After 9:00 am, service is provided by Routes 2 and 3. Route 2 operates on Albany's east side, and Route 3 operates service on Albany's west side. The single-ride fare is $1.00 for adults, and $0.50 for seniors (60 and older), youth (6-17), and disabled individuals. Children 5 and younger ride free. Free transfers are available. Routes 1, 2, and 3 only operate within the City of Albany.

Linn-Benton Loop

Another fixed route operated by ATS is the Linn-Benton Loop. The route is operated by ATS but funded by multiple partners and is overseen by a governing Board. The Loop operates as an inter-city route connecting Corvallis and Albany. The Loop operates from 6:25 am until 7:00 pm, Monday through Friday, and 8:00 am until 6:00 pm on Saturday. The Loop fare is $1.50, however free or reduced transfers are available.

Call-A-Ride

The City of Albany also operates Call-A-Ride (CAR), a wheelchair accessible, curb-to-curb transportation service for Albany residents 60 years of age and over, and for people of all ages with disabilities who are unable to access fixed route bus service. CAR provides trips within Albany city limits, ¾- mile outside Albany city limits, and within the City of Millersburg. This service operates Monday through Friday, from 6:30 am to 6:30 pm and on Saturdays from 8:00 am to 6:00 pm. A one-way trip costs $2.00.

Linn Shuttle

Operated by the non-profit Senior Citizens of Sweet Home, Inc., the Linn Shuttle provides transportation services between Sweet Home, Lebanon, and Albany, making connections to Linn-Benton Community College (LBCC), downtown Albany and the Heritage Plaza. The Linn Shuttle operates seven two-way trips per day between Sweet Home and Albany plus five LBCC Express trips from Lebanon to Albany and back to Sweet Home.

The Linn Shuttle operates on a scheduled route except for pre-approved unscheduled stops. It provides service Monday through Friday, 6:25 a.m. to 7:30 p.m. There are no eligibility criteria for riders. Service is offered free for staff and students of LBCC. All Linn Shuttle vehicles are equipped with video cameras, wheelchair lifts or ramps, two on-board securement spaces and bike racks.

Additional Regional Services

- Benton County Dial-A-Bus
- Corvallis to Amtrak Connector
- Corvallis to Albany Connection
- Coast-to-Valley Express
- Bolt Bus
- Non-Emergency Medical Transportation via the Cascades West Rideshare and TripLink Call Center
- Taxis
- Amtrak Passenger Rail
- Cascades POINT

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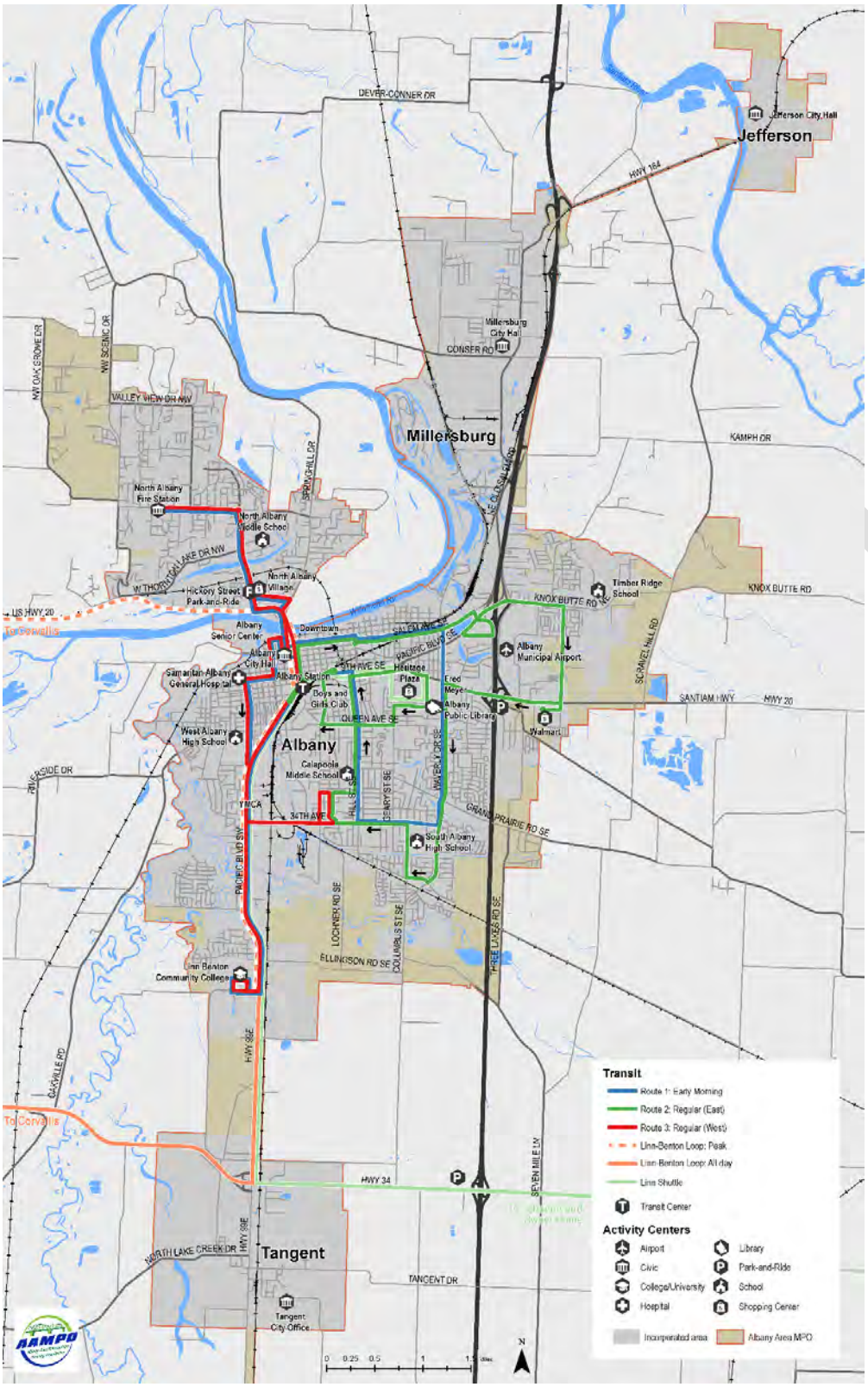
Public Transportation Facilities

The Albany Station is the primary public transportation facility in the MPO area. It is where passengers transfer between routes, where most vehicle trips start and end, and where operators take their break. Intercity and regional services such as Amtrak, Bolt Bus and Linn Shuttle also stop here. In addition to the Albany Station, there are approximately 93 bus stops in Albany, approximately 20 of which have shelters and benches. All stops have signs indicating the routes that serve that stop, but only stops located at a timepoint have additional schedule information for each route. The Linn-Benton Community College has a large shelter with seating protected from the elements.

Figure 4-3: Fixed Route Transit in the Albany Area



Source: Albany Area Regional Transportation Plan Technical Memorandum #5: Existing Conditions, Nelson\Nygaard

Pedestrian Facilities

Sidewalks, multi-use paths, trails, and crosswalks along regionally significant roadway corridors were assessed for completeness, connectivity, Americans with Disabilities Act (ADA) compliance, and safety concerns. A summary of findings is provided below, and the full findings are available in *Technical Memorandum #4 Existing Transportation Conditions*.

Completeness and Connectivity

Pedestrian facilities were reviewed for completeness using ODOT's Multimodal Analysis methodology[9]. It was found that nearly 45 percent of regional roadways have complete sidewalks coverage which includes "Excellent", "Good" and "Fair" ratings, as show in Figure 4-5[10]. While Central Albany has adequate pedestrian connectivity, there are considerable pedestrian facility gaps along regional roadways outside of central Albany, including those within and connecting to Millersburg, Jefferson and Tangent.

ADA compliance within the AAMPO area is incomplete. Recently rehabilitated or constructed roadways such as North Albany Road or Oak Street have been designed to meet ADA requirements; however, older areas such as 9th Avenue in Albany have incomplete ADA design features.

Figure 4-4: Multimodal Analysis Methodology

Excellent: Substantial separation between the sidewalk and the roadway. **Good:** Sidewalks on both sides of the roadway, continuous landscaping buffering from moving vehicles.

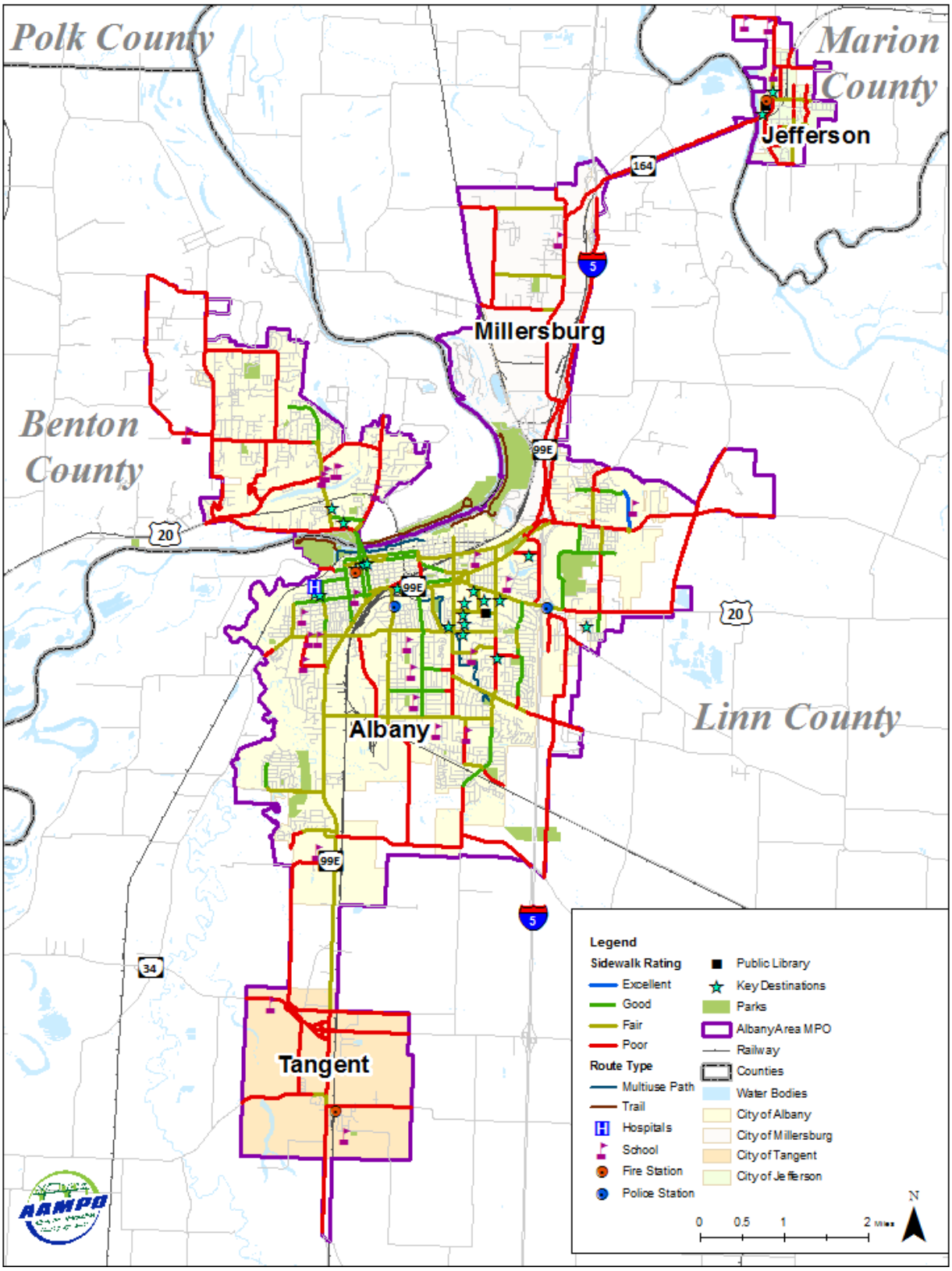
Fair: Sidewalk is curbtight which can be uncomfortable for pedestrian. Bike lane or on-street parking buffers

Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

[9] [9] *Analysis Procedures Manual Version 2*, Oregon Department of Transportation, June 2015.

[10] Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates, August 10 2015

Figure 4-5: AAMPO Existing Pedestrian Facilities



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Pedestrian Safety

A review of the most recent five years (2009-2013) of ODOT crash data found that there were 56 reported vehicle-pedestrian crashes, as illustrated in Figure 4-5. The majority of the crashes occurred in Albany along arterial roadways, with one reported crash each in Tangent, Millersburg and Jefferson. 65 percent of pedestrian related crashes occurred at an intersection or alley and 34 percent occurred along a straight roadway segment. There were five pedestrian fatalities, with the pedestrian deemed at-fault in four of the fatal crashes mainly for being illegally in the roadway.

Two locations in Albany were identified as high vehicle-pedestrian crash areas: the Ellsworth and Lyons couplet (US 20) in downtown Albany and the Heritage Plaza Shopping Center.

A need for safe routes to school was identified throughout the MPO area. Regional roadways may have unsafe crossings or rail crossings which deem routes unsafe even if they are in close proximity to a school.

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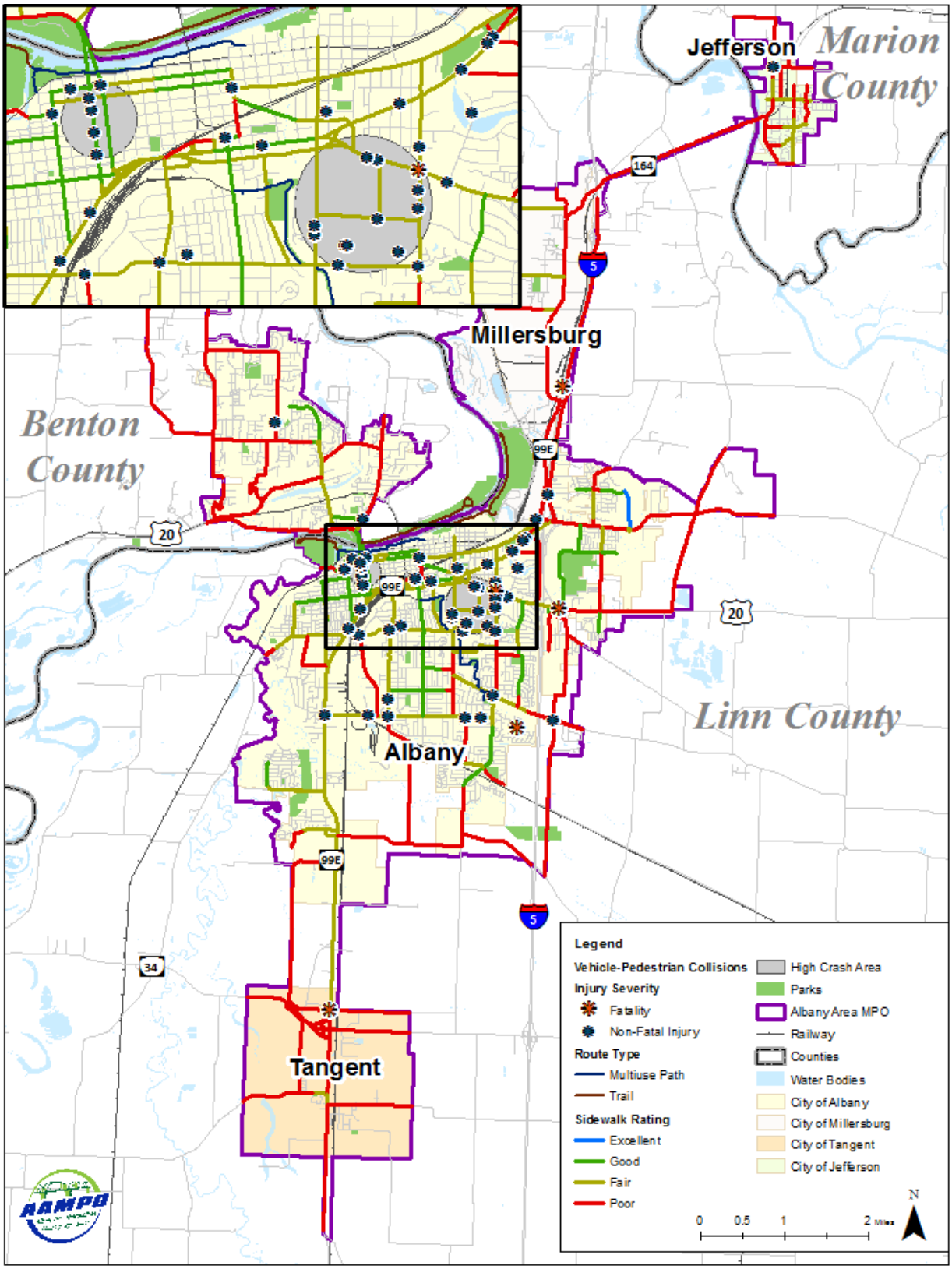
Figure 4-6: AAMPO Vehicle-Pedestrian Crashes (2009-2013)



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Bicycle Facilities

Bicycle facilities, including bicycle lanes, multi-use paths and trails, along regionally significant corridors were reviewed to identify deficient areas and safety concerns. A summary of findings is provided below, and the full findings are available in *Technical Memorandum #4 Existing Transportation Conditions*.

Bicycle Level of Stress

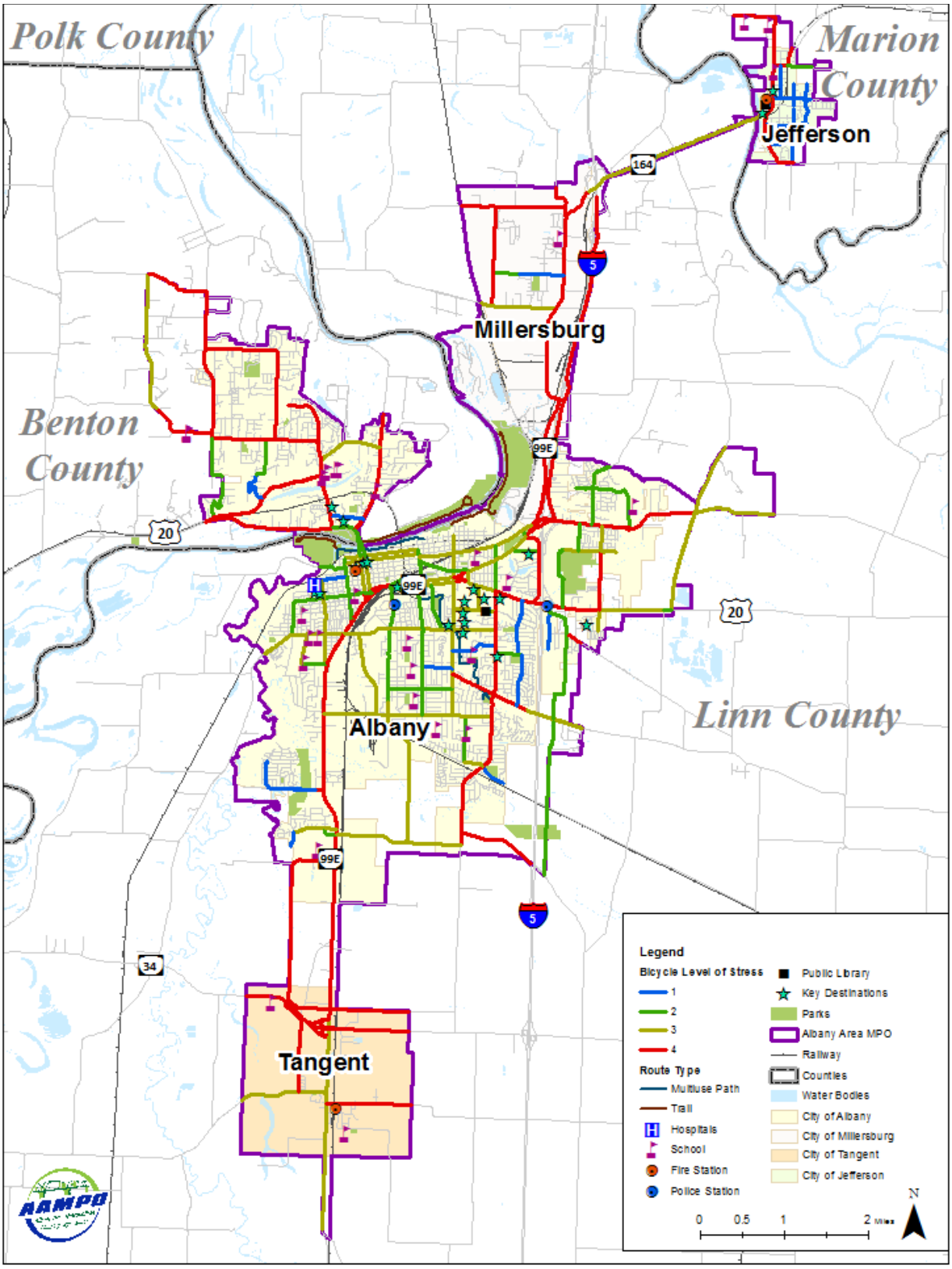
Existing bicycle facilities were evaluated using the ODOT Bicycle Level of Stress Methodology[11]. This methodology uses roadway characteristics such as bike lane width, posted speed limit, and traffic volume to quantify the perceived comfort levels of the average cyclist on a given facility. Perceived comfort is ranked from Level of Stress (LTS) 1 to 4, with LTS 4 representing the highest traffic stress and LTS 1 representing the lowest.

- **LTS 1:** Separated facilities or shared roadways with low traffic speeds, low traffic volume, one lane in each direction and intersections that are easy to cross.
- **LTS 2:** Has little traffic stress but is more suitable for teens and adults. There are slightly higher traffic speeds and up to three lanes total in both directions.
- **LTS 3:** Requires more attention due to moderate stress imposed by increased traffic speeds and up to five lanes total in both directions.
- **LTS 4:** Requires experience and skill. There could be high traffic speeds, multi-lane travel ways, complex intersections and high traffic volumes

Bicycle facilities within central Albany have the lowest levels of stress, and those in outlying areas see higher levels of stress. Regional corridors in Tangent, North Albany and Millersburg are characterized by high levels of stress. In Jefferson, there is little traffic stress within residential areas but OR 164 demonstrates a high level of stress due to frequent driveways and higher speeds. Figure 4-7 illustrates LTS throughout the AAMPO area.

[11] *Analysis Procedures Manual Version 2*, Oregon Department of Transportation, June 2015.

Figure 4-7: AAMPO Existing Bicycle Facilities



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Bicycle Safety

A review of the most recent five years (2009-2013) of ODOT crash data found that there were 73 vehicle-bicycle crashes during that five-year span, as shown in Figure 4-8. The majority of crashes occurred at intersections or alleyways in Albany, typically involving a crossing or turning movement. Ten crashes resulted in an incapacitating or serious injury, 43 crashes resulted in a non-incapacitating or moderate injury, and 20 crashes resulted in a possible or minor injury.

Three locations in Albany were identified as high vehicle-bicycle crash areas:

- Lyons-Ellsworth Couplet
- Heritage Plaza Shopping Center
- Queen Avenue

Many of the crashes in these three locations were attributed to traffic violations such as failure to yield the right-of-way, disregarding a traffic signal, non-motorists illegally in the roadway, or vehicles crossing the centerline.

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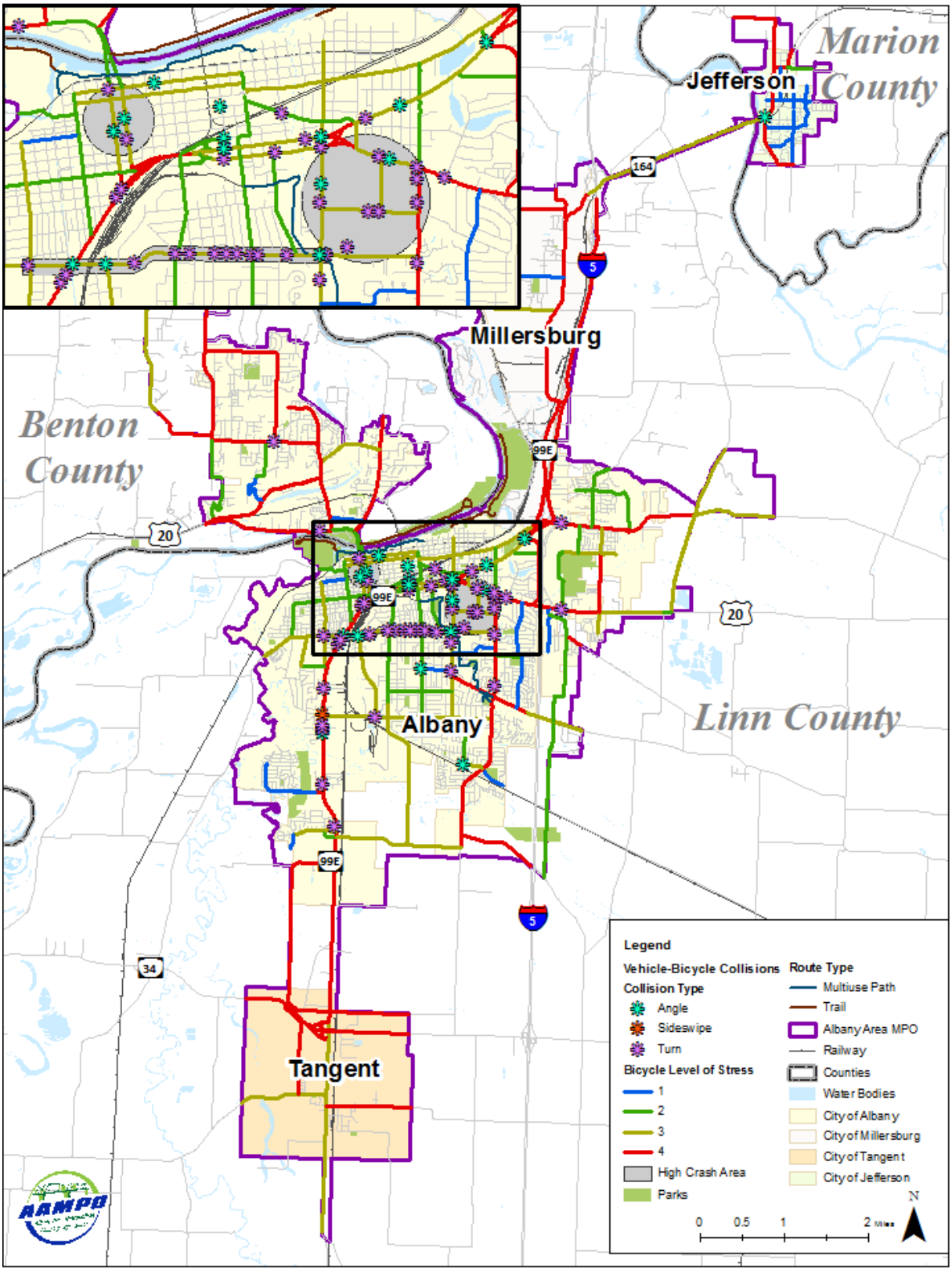
Figure 4-8: AAMPO Vehicle-Bicycle Crashes (2009-2013)



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Roadways

Regionally significant roadways, identified as all arterials and collectors, within the AAMPO area were inventoried. Roadway characteristics, traffic operations, traffic safety considerations, and freight routes were reviewed to help identify current roadway conditions and deficiencies.

Roadway Characteristics

There are six urban roadway classifications within the AAMPO area: freeway, principal arterial, minor arterial, major collector, minor collector, and local. One freeway and four primary arterials provide connections within and to areas outside of the MPO: I-5 and OR 99E travel north/south while OR 34, US 20 and OR 164 travel east/west. Minor arterials and collectors throughout the MPO allow for more access and circulation within the MPO and create connections to regional destinations, I-5, and other arterial roadways. These roadways are illustrated in Figure 4-9.

Speed limits for regional roadways in the MPO area range from 25 to 55 miles per hour (mph), with posted speeds typically decreasing to 25 to 45 mph within city limits and increasing to 55 mph between cities. Most AAMPO's regional roadways have two to three travel lanes, although portions of OR 99E and OR 34 have a cross section of five travel lanes[12]. AAMPO area speed limits are illustrated in Figure 4-10.

There are 135 bridges, both roadway and railroad, identified in the 2014 National Bridge Inventory within the MPO area. According to the 2015 ODOT Bridge Condition Report, there is one 'posted' bridge in on Highway 164 as it crosses the Santiam River into Jefferson[13]. There are six functionally obsolete bridges: I-5 at the Viewcrest Interchange in Millersburg, I-5 at the Knox Butte Interchange in Albany, 99E at Waverly Lake in Albany, Highway 20 / 99E at the rail overpass in Albany, the Lyons Bridge over the Willamette River in Albany, and the Ellsworth Bridge over the Willamette River in Albany. The Ellsworth Bridge is also a freight 'pinch point' due to vertical clearance issues. A 'functionally obsolete' classification indicates that the bridge was built to standards that do not meet current federal minimum clearance requirements. 'Posted' bridges have insufficient load capacity for heavy vehicles.

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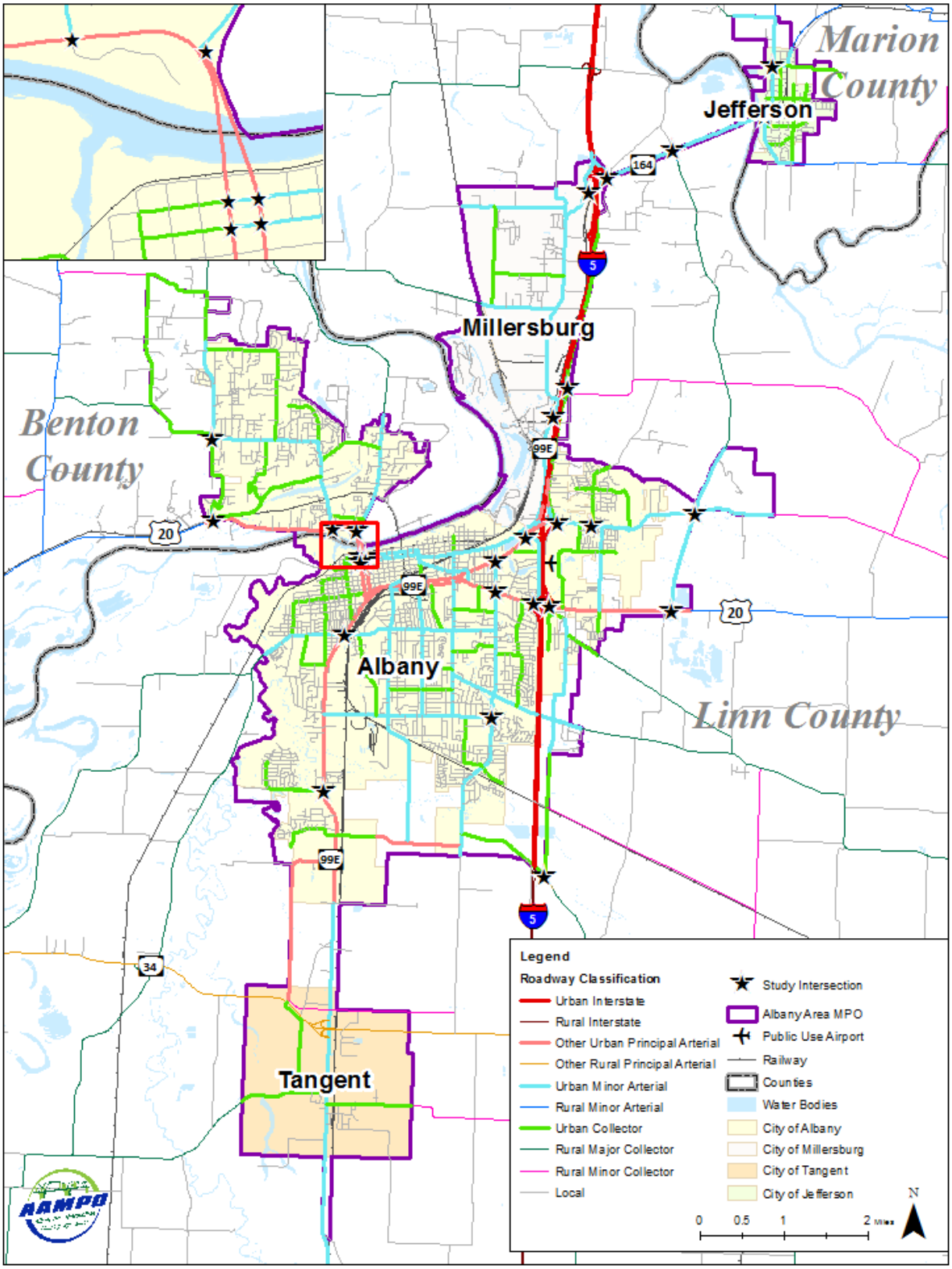
[12] Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates, August 10 2015

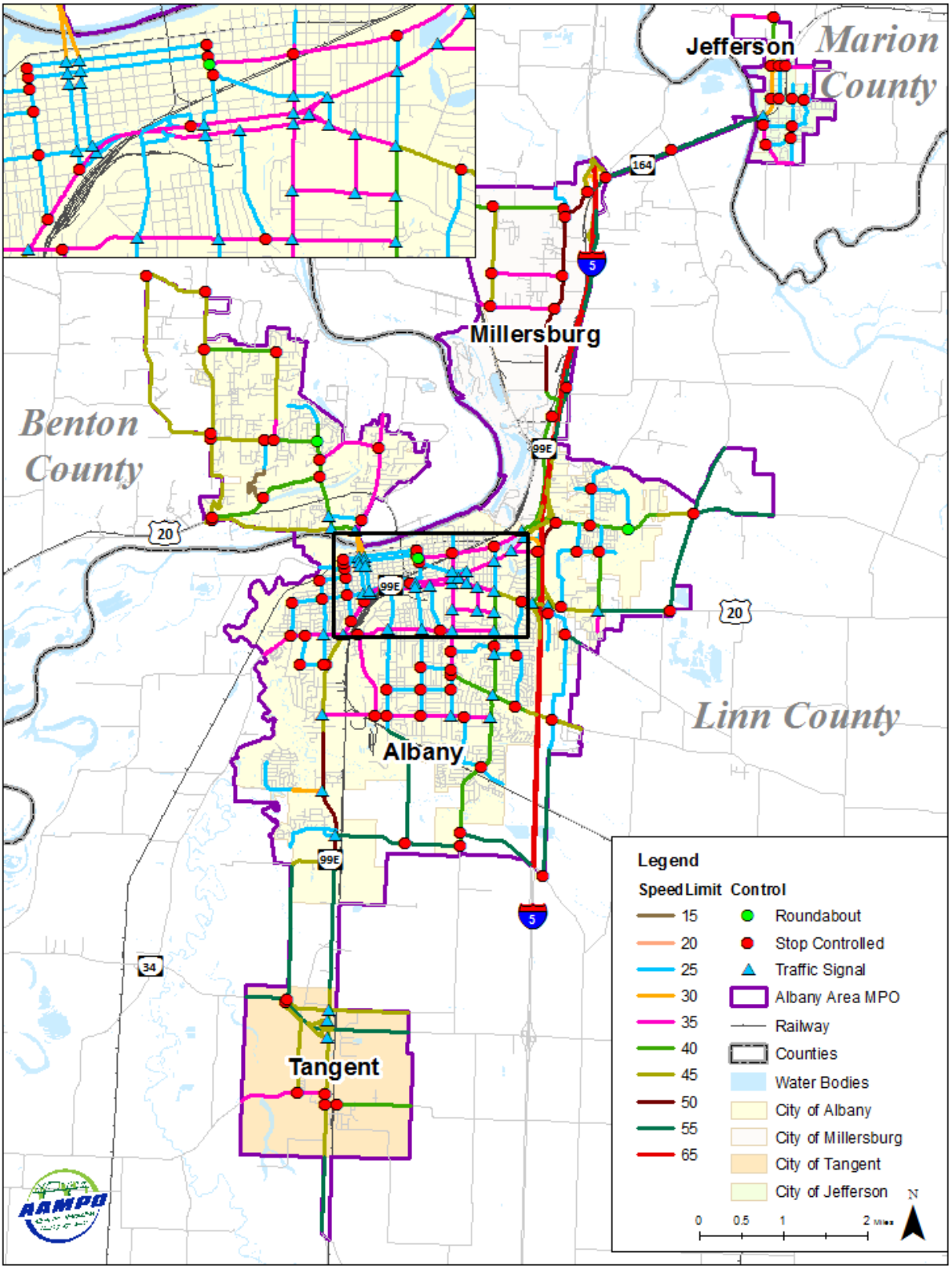
[13] 2015 ODOT Bridge Condition Report, Oregon Department of Transportation, 2015

Figure 4-9: AAMPO Roadway Functional Classification



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Figure 4-10: AAMPO Study Intersection and Posted Speed Limits



Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Traffic Operations

The efficiency of traffic operations is traditionally judged by the mobility of vehicles along roadway corridors and at intersections. Level of service and v/c ratios are two commonly used performance measures that provide a gauge of intersection operations. Level of service is a "report card" rating (A through F) based on the average delay experienced by vehicles at the intersection. A v/c ratio is a decimal representation of the volume to capacity ratio of an intersection; a lower ratio indicates smooth operations and minimal delays. As the ratio approaches 1.00, congestion increases and performance is reduced.

Intersection turn movement counts for 15 study intersections were conducted during the p.m. peak period in May 2015. In addition, traffic operations results for 13 study intersections analyzed in the City of Albany Transportation System Plan[14] were included to complete the regional analysis. These intersections are shown in Figure 3. Operations at these 28 key intersections were analyzed based on the 2000 Highway Capacity Manual[15] for signalized intersections and 2010 Highway Capacity Manual for unsignalized intersections. Of the 28 study intersections, there are two unsignalized intersections under ODOT jurisdiction that currently do not meet OHP mobility targets—Century Drive & I-5 NB Off Ramp/Knox Butte Road and Scenic Drive/US 20.[16]

Truck Freight

There are two designated state and federal freight routes within the AAMPO area: OR 34 and I-5. OR 99E and US 20 also play key role in moving freight both through and within the MPO area. Table 4-2 summarizes the most recent truck freight volumes based on data collected at permanent ODOT Automatic Traffic Recorder (ATR) stations.

Table 4-2: Existing Truck Volumes on Freight Routes within the AAMPO Area (2013)

Route	Automatic Traffic Recorder Location	2013 Average Daily Traffic[17]	Truck ADT	Truck %[18]
Interstate 5	0.41 mile north of Albany Junction City Highway	59,400	12,890	21.7%
Oregon 34	0.89 mile east of Riverside Drive	27,100	1,978	7.3%

[14] *Albany Transportation System Plan*, Kittelson & Associates, Inc., February 2010. Traffic volumes collected in May and June of 2004.

[15] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.

[16] Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates, August 10 2015

[17] 2013 Traffic Volumes on State Highways, Oregon Department of Transportation, 2013.

[18] Trends at Automatic Traffic Recorder Stations, Oregon Department of Transportation, 2013.

US 20/Oregon 99E	0.28 mile northeast of Albany-Corvallis Highway	35,500	1,456	4.1%

Source: Albany Area Regional Transportation Plan Technical Memorandum #4: Existing Conditions, DKS Associates

Counts at 28 key intersection show between 0-16 percent of daily traffic going through the intersection to be heavy vehicles. Nine intersections had at least one approach with more than 5 percent of heavy vehicles. Intersections with the highest heavy-vehicle counts were:

- Century Drive/I-5 NB Ramps and Scravel Hill Road/US 20
- Century Drive/Knox Butte Road and Three Lakes Road/Seven Mile Lane
- South Jefferson I-5/OR 164 interchange
- Scravel Hill Road/OR 164
- Old Salem Road/I-5 SB Ramps
- Scravel Hill Road/Knox Butte Road.

Six freight 'pinch points' have been identified within the AAMPO area[19]. Pinch points restrict over-dimension freight loads due to width, length, vertical clearance or weight constraints and can include low overpasses, narrow roadways, sharp curves, weight-restricted bridges and other feature. The Ellsworth Bridge on Highway 20 was identified as a high priority due to being the only vertical clearance pinch point on a Reduction Review Route (RRR). Oregon law states that freight routes identified as RRRs must not see permanent reductions in vehicle carrying capacity unless for safety of access considerations. The remaining five pinch points were identified as low priority and are located along I-5 at the following overpasses: Viewcrest Drive, US20, Grand Prairie, Seven Mile Lane, and Tangent Drive.

Rail Freight

There are currently three railroads serving the AAMPO area: Union Pacific (UP), Portland & Western (PNWR), and Albany & Eastern (AERC). Collectively, these rail lines have up to 46 freight trains moving through the MPO each day, including switching trains. The railroad companies serve local industries transporting commodities such as lumber, seed, feed, fertilizer, and frozen food. There are seven grade separated crossing, 33 gated crossings, 20 stop controlled crossings, and six yield controlled crossings in the AAMPO area.

Railroads run through all cities in the AAMPO area, and at grade rail crossings create safety, travel time, and connectivity issues throughout the MPO. Freight and passenger rail travels non-stop and at higher speeds through Tangent, Millersburg, and Jefferson. Rails service often slows in Albany before stopping at the Albany Station. At-grade crossings in Jefferson and Tangent bisect the communities and create unsafe routes to school for school-age children and regular delays for residents.

The City of Albany has numerous at-grade crossings which similarly bisect neighborhoods and commercial areas, creating delays and safety concerns. Primary among these is the Queen

[19] Highway Over-dimension Load Pinch Points Study, Oregon Department of Transportation, 2015

Avenue crossing, adjacent to the Albany Rail Yard and Albany Station. This crossing has significant impacts to system reliability and safety, as switching movements create long delays for vehicles, pedestrians, and bicyclists traveling along Queen Avenue to OR99E or Oakville Road / Riverside Drive. The Albany Rail Yard serves as a crossing point for all UP rail lines in Albany, however limited distance between tracks where UP trains can meet and pass can result in long delays while passing trains await permissions to cross. Switching trains also cross Queen Avenue, creating long delays. Several pedestrian and bicycle fatalities have occurred at this location. A recent project attempted to alleviate delays by rehabilitating the Millersburg switching yard and adding a short section of track in Albany to connect the Toledo Branch directly to the Millersburg Yard.

The City of Millersburg sees the least impact, as rail service primarily travels through and serves industrial and commercial areas before heading along OR 164 towards Jefferson. There are two above grade crossings in the Millersburg area which alleviate conflicts with other modes.

North Albany and Benton County see delays and safety concerns primarily at the at-grade crossing at Scenic Drive, directly adjacent to US 20 corridor. Slow-moving or stopped trains can create delays and safety concerns when vehicles back up onto US 20, waiting to turn onto Scenic Drive. While less frequent than at Queen Ave, this line also sees delays due to trains awaiting permission to travel eastward toward the Albany and Millersburg stations.

Air Travel

The AAMPO area's one general aviation airport, Albany Municipal Airport, is owned and operated by the City of Albany[20]. The airport consists of 147 acres with a single 3,004 foot runway constrained between Knox Butte Road and US 20, alongside I-5[21]. The runway constraints inhibit passenger air travel. The airport is estimated to house 51 home-based aircraft including 43 single engine, seven multi-engine, and one jet. The airport currently sees 23,300 departures and arrivals annually[22]. An Airport Master Plan defines the needs and direction of future development at the airport.

The Eugene Airport (Mahlon Sweet Field), located 40 miles south of the AAMPO area, helps to serve regional air travel needs. The airport is operated by the City of Eugene and is categorized as a general aviation 'Non-Hub, Commercial Service, Primary Airport'. Four passenger carriers serve the airport, providing 28 arrivals and 27 departures a day to 10 U.S. cities. The airport supports cargo freight, military aircraft, and other general aviation uses[23].

[20] Federal Aviation Administration Airport Master Record Form 5010-1, Federal Aviation Administration, June 25, 2015.

[21] Albany Municipal Airport: Airport Master Plan Report 2000-2020, City of Albany, 2002.

[22] Albany Municipal Airport: Airport Master Plan Report 2000-2020, City of Albany, 2002.

[23] *Eugene Airport Master Plan Update*, Mead & Hunt, February 2010. (https://www.eugene-or.gov/1060/Master-Plan-Update) Accessed March 3, 2016.

Waterways

Two rivers run through the AAMPO area. The Willamette River runs through Albany and Millersburg and the Santiam River runs through Jefferson. The Willamette River is considered navigable but is not currently used for transporting goods or people and is restricted in height and width due to stationary highway and railroad bridge crossings.

Pipelines

Williams Northwest Pipeline owns a high-pressure natural gas pipeline that runs in the north-south direction along the eastern edge of the AAMPO area. There are several delivery points between Jefferson and Tangent which provide services to Northwest Natural Gas, International Paper Company-Albany, and Oremet-Wah Chang, who in turn distribute their product to the cities with a smaller pipe network. Santa Fe Pacific Pipeline-North owns a major pipeline running along I-5 through Millersburg and Albany that carries petroleum products[24].

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

Chapter 5: Environmental Considerations

Environmental considerations area a requirement of federal legislation (MAP-21) that requires discussion of existing environmental features, comparison of proposed transportation projects to identify potential conflicts, and identification of potential mitigations as needed. This chapter includes the discussion of existing environmental features, and Chapter 9 includes discussion of project screening. Additional details can be found in *Technical Memorandum #6 Environmental Analysis*.

Fish, Wildlife and Habitat

Threatened and Endangered Species

Under federal law, the U.S. Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) share responsibility for implementing the federal Endangered Species Act (ESA) of 1973 (Public Law 93-205, 16 United States Code ([USC[) § 1531), as amended. In general, USFWS has oversight for land and freshwater species and NOAA for marine and anadromous fish species. In addition to information about listed species, the USFWS Oregon Field Office maintains a list of Species of Concern.

Once a species is listed as a threatened or endangered (T&E) species, it is afforded the full range of protections available under the ESA, including prohibitions on killing, harming or otherwise "taking" a species. A species is listed as one of two categories, endangered or threatened, depending on its status and the degree of threat it faces. An "endangered species" is one that is in danger of extinction throughout all or a significant portion of its range. A "threatened species" is one that is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. In some instances, the listing of a species can be avoided by the development of Candidate Conservation Agreements that may remove threats facing the candidate species. "Species of Concern" is an informal term under the federal listing that is not specifically defined in the federal ESA. The term commonly refers to species that are declining or appear to be in need of conservation.

Under state law (Oregon Revised Statutes 496.171 to 496.192) the Fish and Wildlife Commission, through the Oregon Department of Fish and Wildlife (ODFW), maintains the list of native wildlife species in Oregon that have been determined to be either threatened or endangered according to criteria set forth by rule (Oregon Administrative Rule [OAR] 635-100-0105). Plant listings are handled through the Oregon Department of Agriculture. Most invertebrate listings are conducted through the Oregon Natural Heritage Program.

Under Oregon's Sensitive Species Rule (OAR 635-100-040), a "sensitive" species classification was created that focuses fish and wildlife management and research activities on species that need conservation attention. "Sensitive" refers to naturally reproducing fish and wildlife species, subspecies, or populations that are facing one or more threats to their populations and/or habitats. Implementation of appropriate conservation measures to address the threats may prevent them from declining to the point of qualifying for threatened or endangered status.

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Sensitive species are assigned one of two subcategories. "Critical" sensitive species are imperiled with extirpation from a specific geographical area of the state because of small population sizes, habitat loss or degradation, and/or immediate threats. Critical sensitive species may decline to the point of qualifying for threatened or endangered status if conservation actions are not taken. "Vulnerable" sensitive species are facing one or more threats to their populations and/or habitats. Although not currently imperiled with extirpation from a specific geographical area of the state, vulnerable species could, however, become so with continued or increased threats to populations and/or habitats.

The Oregon Biodiversity Information Center database search (ORBIC 2015) documents the federally listed and state listed T&E species within two miles of the Albany Area MPO. The ORBIC database search is summarized in Table 5-1. Because ORBIC considers locality data to be sensitive and confidential and the concern about possible misuse and misinterpretation, such data is subject to limited distribution. Technical Memo #x Name includes figures with general locations of the species identified in Table 5-1.

In the study area there is one federally listed endangered species, Willamette Valley daisy, three federally-listed threatened species, Steelhead, Chinook Salmon and Oregon chub, and one federally listed as potentially threatened, the Streaked horn lark. There are two state-listed endangered species: the Peacock larkspur and Willamette Valley Daisy. There are also both state and federal species listed as sensitive or species of concern.

Table 5-1: ORBIC Database Search Results

Scientific Name	Common Name	Category	Federal Status	State Status	Notes
Driloleirus macelfreshi	Oregon giant earthworm	Invertebrate Animal	SOC		-
Delphinium oreganum	Willamette Valley larkspur	Vascular Plant	SOC	C	-
Delphinium pavonaceum	Peacock larkspur	Vascular Plant	SOC	LE	-
Erigeron decumbens	Willamette Valley daisy	Vascular Plant	LE	LE	-
Lathyrus holochlorus	Thin-leaved peavine	Vascular Plant	SOC	-	-
Montia howellii	Howell's montia	Vascular Plant		C	-
Sidalcea campestris	Meadow checker-mallow	Vascular Plant		C	-
Actinemys marmorata	Western pond turtle	Vertebrate Animal	SOC	SC	-
Chrysemys picta	Painted turtle	Vertebrate Animal		SC	-
Eremophila alpestris strigata	Streaked horned lark	Vertebrate Animal	PT	SC	-

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Scientific Name	Common Name	Category	Federal Status	State Status	Notes
Haliaeetus leucocephalus	Bald eagle	Vertebrate Animal	-	SV	Breeding Sites in Tangent
Oncorhynchus mykiss pop. 33	Steelhead (Upper Willamette River ESU, winter run)	Vertebrate Animal	LT	SV	Spawning and Rearing; Rearing and Migration
Oncorhynchus tshawytscha pop. 23	Chinook salmon (Upper Willamette River ESU, spring run)	Vertebrate Animal	LT	SC	Spawning and Rearing; Rearing and Migration
Oregonichthys crameri	Oregon chub	Vertebrate Animal	LT	SC	Year round fish
Rana pretiosa	Oregon spotted frog	Vertebrate Animal	C	SC	-

Acronyms: SOC = Species of Concern; PT= Proposed Threatened; LE = Listed Endangered; LT = Listed Threatened; SV = Sensitive-Vulnerable; SC = Sensitive-Critical; C Candidate for Listing as Threatened or

Habitat

Most of the Willamette Valley's native habitats including native prairies, savannahs, upland forest and woodland have been replaced by croplands and urban development (City of Albany, 1980). Vegetation within urban areas likely includes non-native trees and shrubs such as ornamental plantings and mowed grasses. Wildlife presence within urban landscapes depends on the availability of suitable habitat. Habitat loss, along with increasing habitat fragmentation, is a primary reason for species decline in urban environments. Overall, the Albany area consists of approximately 69 percent urban development, 19 percent agriculture, with the remaining area including various types of forests, shrubland and wetlands. According to the Albany Comprehensive Plan, there are isolated stands of native Oregon Oaks and a mixture of deciduous and evergreen trees on the hillsides of North Albany and Knox Butte.

The following description is taken from the ODFW's Oregon Conservation Strategy (OCS) description for the Willamette Valley Ecoregion (ODFW 2006).

"Culturally, the Willamette Valley is a land of contrasts. Bustling urban areas are nestled within productive farmland. With Interstate 5 running its length, the Willamette Valley's economy is shaped by the transportation system and the flow of goods. With nine of the ten largest cities in Oregon, the Willamette Valley is the most urban ecoregion in Oregon. It also is the fastest-growing ecoregion. Pressure on valley ecosystems from population growth, land-use conversion, and pollution is likely to increase.

Since the 1850's, much of the Willamette Valley ecoregion has been altered by development (agricultural or urban), particularly affecting oak woodlands, oak savanna, grassland, riverine, and wetland habitats. The Willamette River has been disconnected from its floodplain, and much of the historic habitats have been fragmented. About 96 percent of the Willamette Valley ecoregion is privately owned, presenting challenges to conservation management".

The OCS is conceptual framework for long-term conservation of Oregon's native fish, wildlife, invertebrates, and plants. The OCS emphasizes proactively conserving declining species and

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habitats to reduce the possibility of future federal or state listings. It is not a regulatory document, but instead presents issues and opportunities, and recommends voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon. Strategy habitats in the Willamette Valley include oak woodland and savannah, riparian areas, grasslands (including Willamette Prairie), and wetlands. Table 5-2 identifies habitat areas and associated OCS species.

Table 5-2: Oregon Conservation Strategy (OCS) Species and Associated Habitats

Habitat	OCS
Oak Woodland/ Savannah	Acorn woodpecker (*Melanerpes formicivorus*) California myotis (bat (*Myotis californicus*)
	Chipping sparrow (*Spizella passerina*)
	Common nighthawk (*Chordeiles minor*)
	Hoary bat (Lasiurus cinereus)
	Nelson's sidalcea (*Sidalcea nelsoniana*)[a]
	Pallid bat (*Antrozous pallidus*)
	Slender-billed (white-breasted) nuthatch (*Sitta carolinensis aculeata*)
	Wayside aster (*Aster vialis*)
	Western gray squirrel (*Sciurus griseus*)
	White rock larkspur (*Delphinium leucophaeum*)[a]
Riparian	American grass bug (*Acetropis americana*)
	Foothill yellow-legged frog (*Rana boylii*)
	Little willow flycatcher (*Empidonax traillii brewsteri*)
	Western blue bird (*Sialia mexicana*)
	Western purple martin (*Progne subis*)
	Yellow-breasted chat (*Icteria virens*)
Native Prairie	Bradshaw's desert parsley (*Lomatium bradshawii*)
	Fender's blue butterfly (*Icaricia icarioides fenderi*)[a]
	Golden paintbrush (*Castilleja levisecta*)
	Grasshopper sparrow (*Ammodramus savannarum*)
	Kincaid's lupine (*Lupinus sulphereus ssp. kincaidii*)
	Oregon vesper sparrow (*Pooecetes gramineus affinis*)
	Peacock larkspur (*Delphinium pavonaceum*)
	Streaked horned lark (*Eremophila alpestris strigata*)[a]
	Taylor's checkerspot (*Euphydryas editha taylori*)
	Western meadowlark (*Sturnella neglecta*)
	White-topped aster (*Aster curtus*)[a]

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Habitat	OCS
	Willamette daisy (*Erigeron decumbens var. decumbens*)
Wetlands	Dusky Canada goose (*Branta canadensis occidentalis*)
	Howellia (*Howellia aquatilis*)
	Northern red-legged frog (*Rana pretiosa*)
	Short-eared owl (*Asio flammeus*)
	Western painted turtle (*Chrysemys picta belli*)[a]
	Willamette floater (freshwater mussel) (*Anodonta wahlametensis*)

[a] Documented to occur within the last 25 years.

Conservation Opportunity Areas (COAs) were developed for the OCS to help identify priority areas for conservation actions that directly benefit wildlife and habitats. Generally, these are either areas of high biodiversity or areas with unique habitat values in which conservation actions would best meet the needs of OCS species and habitats. The study area includes the following COAs: the Willamette, Calapooia, and Santiam River Floodplains. These rivers are also Critical Habitat for Chinook salmon and Steelhead trout. There is also designated critical habitat for the Oregon Chub at ponds designated as the "Santiam I-5 Side Channels" along the Santiam River near Jefferson.

The three major rivers in the Albany MPO (Willamette, Calapooia, and Santiam) along with their tributaries provide linear habitat networks for fish and wildlife. ODFW, under the Oregon Wildlife Movement Strategy and in partnership with other government agencies, identified wildlife linkages in Oregon. Such linkages are key movement areas for wildlife, emphasizing areas that cross paved roads. The wildlife linkages were based on the following criteria:

1. Whether the area falls within a COA
2. Whether the area falls within federal, state/county, or private ownership
3. Whether the area contains multiple species' linkages
4. Whether the area is designated by ODOT as a wildlife collision hotspot
5. Whether the area has a medium or high threat value
6. Whether the area has a medium or high species value

The wildlife linkages were identified for a specific focal species population, which included large game mammals, small- to medium-sized mammals, amphibians, and reptiles (ODFW, 2006). There are only two Wildlife linkages in the study area, both are low-priority. One is for small mammals along the Corvallis-Lebanon Highway at the northwest edge of Tangent, and the other is for large mammals along OR-99E in the southeast corner of Albany as shown on Figure 4.

Wetlands, Floodplains and Water Resources

Wetlands

The Willamette Valley contains considerable acreage of wetlands, from high value/functioning wetlands to farmed wetlands that typically provide lower ecological function. Table 5-3 shows wetland and waterway acreages within the study area, including acreage of high value wetlands. It should be noted that farmed wetlands typically do not show up in Wetland Inventories or similar GIS mapping sources and therefore the acreage of wetlands may be higher than noted in Table 5-3. Supplemental hydric soils information can be used to identify the potential for wetlands to occur in these areas.

Existing, readily available geographic information system (GIS) data was used to document the quantity and type of wetlands and waterways within the study area. The primary source of wetland GIS data was the Oregon Wetland Coverage (OWC) shapefile from the Oregon Wetlands Geodatabase, which provides the most comprehensive dataset available for the location and composition of the state's wetlands. The OWC includes a dataset for National Wetlands Inventory mapping. In addition, wetlands of high value were identified. Specifically, high-value wetlands were considered to be wetlands that met any of the following criteria:

- Provide critical habitat for endangered species
- Are located in a protected area (for example, city park, USFWS Refuge, and so forth)
- Are locally significant wetlands (as determined by local planning code Local Wetland Inventory designations)
- Are wetlands that occur within areas designated as “wetland priority sites”
- Are area mapped as wetland mitigation banks and areas enrolled in the Wetland Reserve Program (WRP).
-

Table 5-3: Wetlands and Related Resources within Albany Area MPO (approximate acreage)

Type	Approximate Acreage
Wetlands	2,270
High Value Wetlands	1,195
Hydric Soils	6,924

Floodplains

Acting through the local planning agencies, the Federal Emergency Management Agency (FEMA) regulates development within Regulated Floodways and Special Flood Hazard Areas (SFHA). A "Regulatory Floodway" means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height. SFHA are defined as the areas that will be inundated by the flood event having a 1 percent chance of being

equaled or exceeded in any given year. The one-percent annual chance flood is also referred to as the base flood or 100-year flood. There are several large rivers and smaller tributaries and streams that are susceptible to flooding events in the Albany Area MPO. The flooding of these waterways may threaten life and safety and can cause significant property damage. FEMA-designated SFHA in the study area are displayed in Figure 7 and include the Willamette, Calapooia, and Santiam rivers and Oak Creek.

Water Quality and Stormwater Management

Stormwater runoff is water that originates from precipitation and then flows across the land as "runoff" rather than infiltrating into the ground. Stormwater management is important because the volume and timing of runoff can disrupt the hydrologic cycle of receiving waterways and contribute to flooding, cause erosion, and transport pollutants, thus impacting the water quality of receiving water bodies. Runoff from impervious surfaces, particularly roads, picks up and conveys pollutants such as heavy metals and petroleum products into streams. Water that flows over impervious surfaces and into streams without treatment negatively impacts stream health and wildlife habitat which along with removal of shade vegetation can alter the water temperature for priority aquatic species such as salmon.

A variety of techniques exist which can be used to manage stormwater and control erosion and sediment loss on new development sites. Stormwater runoff can be collected and conveyed through a highly varied drainage system composed of sheet flow, roadside ditches, curbs and gutters, inlets, and pipes that all drain to surface streams. Stormwater can be managed through maintenance of stormwater conveyance systems, through erosion control programs, spill response, intergovernmental partnerships, regulations and enforcement, and public education.

Every two years, ODEQ is required to assess water quality and report to the U.S. Environmental Protection Agency (EPA) on the condition of Oregon's waters of the federal CWA Section 305(b) (requiring a report on the overall condition of Oregon's waters) and Section 303(d) (requiring identification of waters that do not meet water quality standards and need a Total Maximum Daily Load [TMDL]). TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still safely meet Oregon water quality standards. A waterbody may have TMDLs for multiple pollutants. TMDLs apply to both point (such as a pipe outfall) and non-point (stormwater runoff) sources, and include a factor of safety to account for uncertainty and allow for some future discharges into the water body.

The most recent report ODEQ completed and submitted to the EPA was in 2010. The Report includes an assessment of each water body where data is available, a list of waters identified under Section 303(d) as water quality limited and requiring a TMDL, and a delisting of waters previously identified as 303(d). The listings and de-listings were approved by the EPA on March 15, 2012. However, since the EPA proposed adding other waters to Oregon's 303(d) list, additional updates to the 303(d) list are anticipated. Waters may be added to the 303(d) list based on new data, application of new or revised water quality standards, or information showing water quality has declined. Waters may be removed from the 303(d) list when TMDLs or other control measures have been established that are expected to improve water quality, when data show water quality has improved, and in some cases when water quality standards are revised.

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Geologic & Natural Hazards

The State of Oregon has published a draft Oregon Natural Hazards Mitigation Plan (ONHMP) (May 2015) which identifies natural hazards in the state. The ONHMP is divided in to 8 regions. The Albany Area MPO is in Region 3 – the Mid/Southern Willamette Valley. According to the ONHMP, Region 3 is affected by eight of the 11 natural hazards that affect Oregon communities; Coastal hazards, dust storms, and tsunami do not directly affect this region. The eight natural hazards according to the ONHMP are:

- **Droughts:** Though not as common in Region 3 as eastern areas of the state, a dry winter or spring could reduce community water supplies, affecting recreation, agriculture and the regional economy. As of July 2015, the Oregon Drought Council listed Linn, Benton and Marion counties as "Not Rated" for drought declaration.
- **Earthquakes**: There are four types of earthquakes that could affect Region 3—shallow crustal events, deep intra-plate events within the subducting Juan de Fuca plate, the offshore Cascadia Subduction Zone (CSZ) Fault, and earthquakes associated with renewed volcanic activity. The CSZ is the chief earthquake hazard for the Mid/Southern Willamette Valley and an earthquake could induce landslide, liquefaction, and ground shaking. During an earthquake, lifelines such as electric power and gas could be affected by prolonged ground shaking and roadways may be susceptible to landslide, rockfall, or liquefaction.
- **Floods:** Riverine and sheet flooding are the most common types of flooding events affecting the study area. The most damaging floods are typically in December and January, associated with La Niña events and are caused by rain or snow events and the backing up of tributaries that takes place.
- **Landslides:** Landslides tend to occur in areas with steeper slopes, weaker geology, and higher annual precipitation with rain-induced landslides occurring during winter months. Earthquakes may also trigger landslides. The study area is relatively flat therefore not as susceptible to landslides.
- **Volcanoes:** Volcanic activity may occur within the eastern areas of Lane, Linn, and Marion Counties that coincide with the crest of the Cascade mountain range outside the Albany Area MPO. Although most volcanic activity has local site impacts, ash fall can travel many miles.
- **Wildfires:** Wildfire risk is low to moderate and usually happens in the late summer. The areas of greatest vulnerability for wildfires are where undeveloped areas interface with urban areas.
- **Windstorms:** Windstorms can occur from winds traveling northeasterly from the Pacific Ocean. Additionally, strong winds from the south are also possible in this region and may cause the most damage. These storms generally impact buildings, utilities, tree-lined roads, transmission lines, residential parcels and transportation systems along open areas such as grasslands and farmland.
- **Winter Storms:** Winter storms typically affect the region annually with colder weather and higher precipitation. Sever winter storms occur about every four years.

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Climate change can affect natural hazards. According to the ONHMP, hazards projected to be impacted by climate change in Region 3 include drought, wildfire, flooding and landslides. Additionally, the ONHMP stated:

"Climate models project warmer drier summers and a decline in mean summer precipitation for Oregon. Coupled with projected decreases in mountain snowpack due to warmer winter temperatures, all eight regions are expected to be affected by an increased incidence of drought and wildfire. In addition, an increase in extreme precipitation is projected for some areas in this region and can result in a greater risk of flooding in certain basins; including an increased incidence of magnitude and return interval. Landslides in Oregon are strongly correlated with rainfall, so increased rainfall—in particular in extreme events—will likely trigger increased landslides. While winter storms and windstorms affect Region 3, there is insufficient research available indicating any change in the incidence of either in Oregon due to changing climate conditions."

Hazardous Materials

Activities involving hazardous materials have the potential to create and leave behind conditions that can be harmful to the environment and to people. Most of the land within the Albany Area MPO has been previously disturbed by urban and agricultural uses that may include undocumented spills, an accumulation of many years of roadway runoff, or use of chemical pesticides; therefore, undocumented hazardous materials may be present. Mercury vapor lamps and treated timbers are also likely in the Albany Area MPO and would require special handling if removal or replacement is needed.

In July 2015, federal and state databases were searched for identified hazardous waste sites and incidences in the study area. The following sites were identified:

- National Priority List (NPL)—List of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants. The following site in the Albany MPO Area is on the National Priority List:
    - Teledyne Wah Chang (EPA ID: ORD050955848) 1600 Old Salem RD NE, Albany Oregon. Cleanup of the site
- Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) – Abandoned hazardous waste sites – "Superfund": Three Superfund Sites are within the Albany MPO Area:
    - Teledyne Wah Chang (EPA ID: ORD050955848) 1600 Old Salem RD NE, Albany OR. Cleanup of the site
    - Absorbent Technologies (EPA IS ORN001003165), 140 SW QUEEN AVENUE, Albany OR
    - Black Dog Slough Transformer Dump Site (EPA IDOR0002195691) Black Dog Road adjacent to Willamette River, Albany OR.

Air Quality

The Land Conservation and Development Commission (LCDC), in 2011, adopted rules (OAR 660 - 044-000) setting targets to guide long range planning for Oregon's largest urban areas to reduce greenhouse gas pollution (GHG) from auto travel. In addition to reductions from technology and state and federal actions, the rules call for local planners to explore ways to reduce pollution from auto and light truck travel by 17 percent to 21 percent per person by the year 2035. Oregon's long term goal is to reduce the state's global warming pollution to 75 percent below 1990 levels by 2040 (HB 3543). The rules set targets for Oregon's six largest metropolitan areas: Portland, Salem-Keizer, Corvallis, Eugene-Springfield, the Rogue Valley and Bend. In May 2015, DLCD completed a required review of the rules and agreed the rules should be updated to set pollution reduction targets for the year 2040. Currently, DLCD is working with other state agencies (ODOT, DEQ and Oregon Department of Energy) to gather the technical information needed for updating the rules. They will convene an advisory committee to advise the update, including looking at whether targets should be set for newly designated metropolitan areas including the Albany Area MPO.

The Transportation Planning Rule requires MPOs to "adopt standards to demonstrate progress towards increasing transportation choices and reducing automobile reliance." The MPO can demonstrate that vehicle miles traveled per capita will decline by five percent over 20 years. Regional and local actions that reduce GHG emissions typically do so by reducing VMT per capita. For example, actions that reduce GHG emissions directly reduce air pollution, and most local and regional actions that reduce GHG also reduce VMT such as by shortening travel distances or shifting trips to other modes. Additional transportation related measure that reduces GHG and VMT may include:

- Expanding transit service;
- Compact, mixed use development;
- Expanding opportunities for walking and cycling;
- Managing parking more efficiently; and
- Expanding transportation options and incentives.

Scenic and Recreational Resources

Scenic and recreational resources include parks, trail corridors, and natural areas. The Willamette Scenic Bikeway, an Oregon State designated bikeway, is between Salem and just south of Coburg, near Eugene. Most of the other scenic and recreational resources in the study area are in Albany and along water resources.

Cultural Resources

The National Park Service establishes guidelines for listing resources in the National Register of Historic Places (NRHP). In order to be eligible for listing on the NRHP, a district, site, building,

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structure, or object must be 50 years of age or older, significant or physically connected with an important part of the past and have "integrity," (includes location, design, setting, materials, workmanship, feeling, and association) or closely resemble its historic appearance.

Most of AAMPO's historic resources are clustered in Albany's downtown. The City of Albany has three historic districts: The Downtown Commercial District, Hackleman District, and Monteith District. According to the City of Albany's website, Albany was founded in 1848 and by 1878, downtown Albany boasted such business as grocers, dry-goods stores, a wagon dealer, cigar stores, butchers, livery stables, a tailor, a "shaving salon," shoe stores, a printer, saloons, hotels, an agricultural implement dealer, and a furniture dealer who doubled as an undertaker, in many of the buildings which still exist today. There likely are additional historical sites that have not been surveyed or identified. Additionally, the locations of known archaeological sites are not disclosed to prevent tampering or scavenging of sites and unknown archaeological sites could be present in the AAMPO.

Prime Farmland

The United States Department of Agriculture defines "prime farmland" as land that has the best combination of soil properties, growing season, and water supply needed for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses. Prime farmland could be cropland, pastureland, rangeland, or forest land, but not developed urban land. Prime farmland, can produce sustained, high yields of crops in an economic manner if it is treated and managed according to acceptable farming methods. Very specific technical criteria were established by Congress to identify prime farmland soils. The criteria include adequate natural moisture content; specific soil temperature range, low susceptibility to flooding, low risk to wind and water erosion, minimum permeability rates, and low rock fragment content. There is also unique farmland which is land other than prime farmland that is used for the production of specific high value food and fiber crops when treated and managed according to acceptable farming methods.

Farmlands of statewide importance is land that can be prime farmland when treated and managed according to acceptable farming methods and that may produce as high a yield as prime farmlands if conditions are favorable.

Oregon maintains a strong policy to protect farmland. The policy was adopted by the state legislature in 1973 (ORS 215.243). It calls for the "preservation of a maximum amount of the limited supply of agricultural land". Oregon's Statewide Planning Program protects agricultural land calls for counties and cities to:

- Inventory agricultural land
- Designate it in the comprehensive plan
- Adopt policies to preserve it
- Zone it Exclusive Farm Use (EFU)

EFU zoning limits development that could conflict with farming practices and keeps farmland from being divided into parcels too small for commercial agriculture. There is a statewide minimum lot size of 80 acres for farmland, unless counties can demonstrate through the

application of specific standards that a lower minimum is appropriate. Each year, a few thousand acres of agricultural land are either rezoned and made available for development in rural parts of the State or included within urban growth boundaries (UGBs) in urbanizing areas. Most of the Albany Area MPO is within UGBs and/or developed for urban use. However, approximately 4,200 acres of land are still used for agricultural uses, largely in areas outside of UGBs such as north and east of Albany and between Albany and Tangent.

Community Resources and Environmental Justice

Community resources such as hospitals, child care facilities, schools and parks were mapped in the study area. Most of the resources are concentrated in the downtown Albany area. The Community Services Consortium serves Linn, Benton and Lincoln Counties and is a state-designated community action agency that focuses on day-to-day survival such as food, housing and skills development for low-income populations.

According to American Community Survey and Census Data, for the overall average AAMPO study area, there is a slightly higher percentage of household below poverty than the state (study area 16 percent versus state 15 percent) and a 5 percent lower percentage of minority populations.

Table 5-4: Households Below Poverty and Minority Populations

	% of households below poverty level	% of minority
AAMPO	16%	17%
Benton Co	21%	16%
Linn Co	16%	13%
Marion Co	16%	31%
Oregon	15%	22%

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 actions, projects using federal funds, or projects that require federal permits 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. The Federal Highway Administration (FHWA) defines a disproportionately high and adverse impact on minority and low-income populations as one that:

- Is predominantly borne by a minority population and/or a low-income population; or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

EO 12898 states that agencies must consider whether human health effects, in terms of risks and rates, are significant or above accepted norms.

Additional underserved populations are the "transportation disadvantaged." The "transportation disadvantaged" are those persons who because of physical or mental disability, income status, or age 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.

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Chapter 6: Future Forecasting

This chapter presents traffic forecasts and summarizes the forecasting methodology. The forecasts were key to identifying future roadway deficiencies and for evaluating regional transportation improvements. Additional details regarding future forecasting are available in *Technical Memoranda #7 Future Forecasting.*

The following elements of the forecasting process are discussed here:

- **CALM (Corvallis, Albany and Lebanon Model) Regional Travel Demand Model,** which estimates both vehicular and non-vehicular traffic based on future growth and changing development patterns within the Albany MPO, surrounding communities (Corvallis and Lebanon), and future growth in traffic passing through the region (I-5, OR 99E, US 20, etc.).
- **Projected Land Use Changes** in the areas covered by the model.
- **Trip Generation, which** calculates the total number of trips produced, by trip purpose, in each zone based on household characteristics and trip rates.
- **Trip Distribution,** which distributes the produced trips to destination TAZ's.
- **Mode Choice,** which assigns person trips to specific modes of travel
- **University Model**, which describes how the model deals with university specific travel

The focus is the year 2040 "Baseline" (30th highest hour – generally representative of a p.m. peak hour from the peak travel month of the year, and average weekday p.m. peak hour) traffic under specific assumptions for transportation network and population growth (described further in the following sections).

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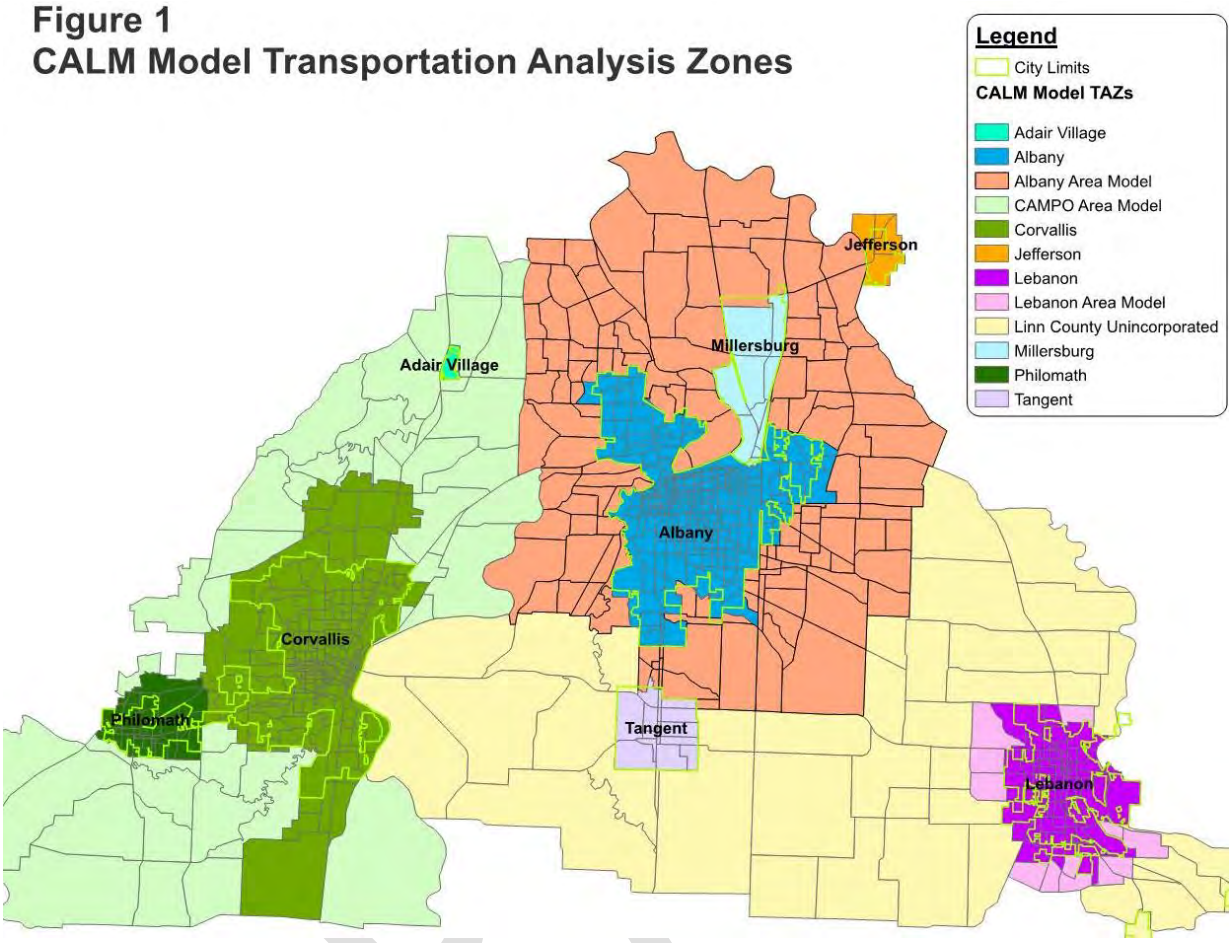
CALM Travel Demand Model

The Oregon Department of Transportation (ODOT) has recently developed and will maintain a travel demand model that estimates daily and p.m. peak hour demand for the existing year (2010) and future year (2040) transportation system. The travel demand model includes AAMPO and surrounding communities of Corvallis, Lebanon, and portions of unincorporated Linn and Benton Counties (refer to Figure 6-1[25]). Previously, some of these areas were incorporated into three separate travel demand models. Combining these areas allows the CALM model to better capture regional influences in the surrounding communities. These models include two key structures that help estimate future traffic:

- **Transportation Analysis Zones (TAZs).** The model area is split into 930 internal regional TAZs (including 332 in AAMPO) and 23 external zones. Each internal TAZ represents a small subarea of the model with unique land use attributes that represent the number of households and the number and type of employees within the zone. These land use attributes determine the intensity and directionality of trips generated by the zone. The TAZ structure for the AAMPO area is shown in Figure 6-2.
- **Transportation Network.** The model includes a network of links that generally represents the major transportation system (typically collector roads and above) in the model area. Each link is coded with attributes (e.g., speed and capacity) that approximate the function of existing roadways (for the base year and future year) and programmed roadway improvements (committed funding identified) for the future year. Each TAZ is connected to links in the model at points that approximate where travelers are expected to enter the network.

[25] Taken Directly from Memorandum: CALM Input Data Development – Task 3.1 Process and Technical Procedures, prepared by DKS Associates, June 19, 2014

Figure 6-1: CALM Model Area



Future Transportation Network

For the AAMPO area, there are no regionally significant transportation improvements included in the 2040 travel demand model. Also, the future transit system is consistent with the existing system. The purpose of this model is to create a "committed" system that represents the conditions and needs of the future system without undergoing any unfunded improvements.

Table 6-1 lists regionally significant projects either constructed or under construction since 2010 (the model base year). Table 6-2 lists regionally significant projects with committed funding sources scheduled for construction before the year 2040. These projects would be incorporated in future model runs to provide a sense for additional system needs.

Table 6-1: AAMPO Projects Constructed After 2010

Project Name	Location	Project Description	Project Source	In CALM?
Oak Street Reconstruction	Queen Ave to Pacific Hwy	Reconstruction of Oak Street from Queen Ave north to 9th Ave, and it's extension across 9th Ave to Pacific Hwy	City of Albany Staff	No
9th Ave/Oak St Signal	9th Ave/Oak St	Added traffic signal	City of Albany Staff	No
Pacific Hwy/Oak St Signal	Pacific Hwy/Oak St	Added traffic signal	City of Albany Staff	No
North Albany Road Reconstruction	RR tracks to Quarry	Project added sidewalks, a center two way left turn lane, and realigned West Thornton Lake Drive	City of Albany Staff	N/A*
Main St/Salem Ave/3rd Ave Improvements	Main St/Salem Ave/3rd Ave	Project added capacity to the intersection, filled in sidewalk gaps, added bike lanes, and made block of Main Street between 1st and 2nd one way in the NB direction	City of Albany Staff	N/A

***The added TWLTL has a capacity benefit**

Table 6-2: AAMPO Committed Projects

Project Name	Location	Project Source	In CALM?
Columbus St Closure at Hwy 34	Columbus St/Hwy 34	Linn County Staff	No
34th Ave/Marion St New Signal	34th Ave/Marion St	City of Albany Staff	No
34th Ave/Hill St New Signal	34th Ave/Hill St	City of Albany Staff	No
Hill St Widening (add bike lanes)	Queen Ave to 34th Ave	AAMPO 2018-2021 TIP List	N/A
Old Salem Road Truax Creek Bridge Replacement	Truax Creek Bridge	ODOT 2015-2018 STIP List	N/A
Seven Mile Ln/Hwy 34 New Signal	Seven Mile Ln/Hwy 34	Linn County CIP List	No
Corvallis to Albany Hwy 20 Multi-use Trail	Scenic Dr to Springhill Rd	ODOT 2015-2018 STIP List	N/A
OR99/53rd Ave Signal Relocation	OR99/53rd Ave	ODOT 2015-2018 STIP List	N/A
I-5 Widening (Preliminary Engineering)	Delaney Rd to Albany	AAMPO 2018-2021 TIP List	N/A
Springhill Drive Roadway Departure Countermeasures	Independence to US 20	AAMPO 2018-2021 TIP List	N/A
OR 34 Safety Improvements	I-5 to Corvallis	AAMPO 2018-2021 TIP List	N/A
Corvallis to Albany Hwy 20 Multi-use Trail (Complete NEPA and ROW purchase)	Scenic Dr to Springhill Rd	AAMPO 2018-2021 TIP List	N/A

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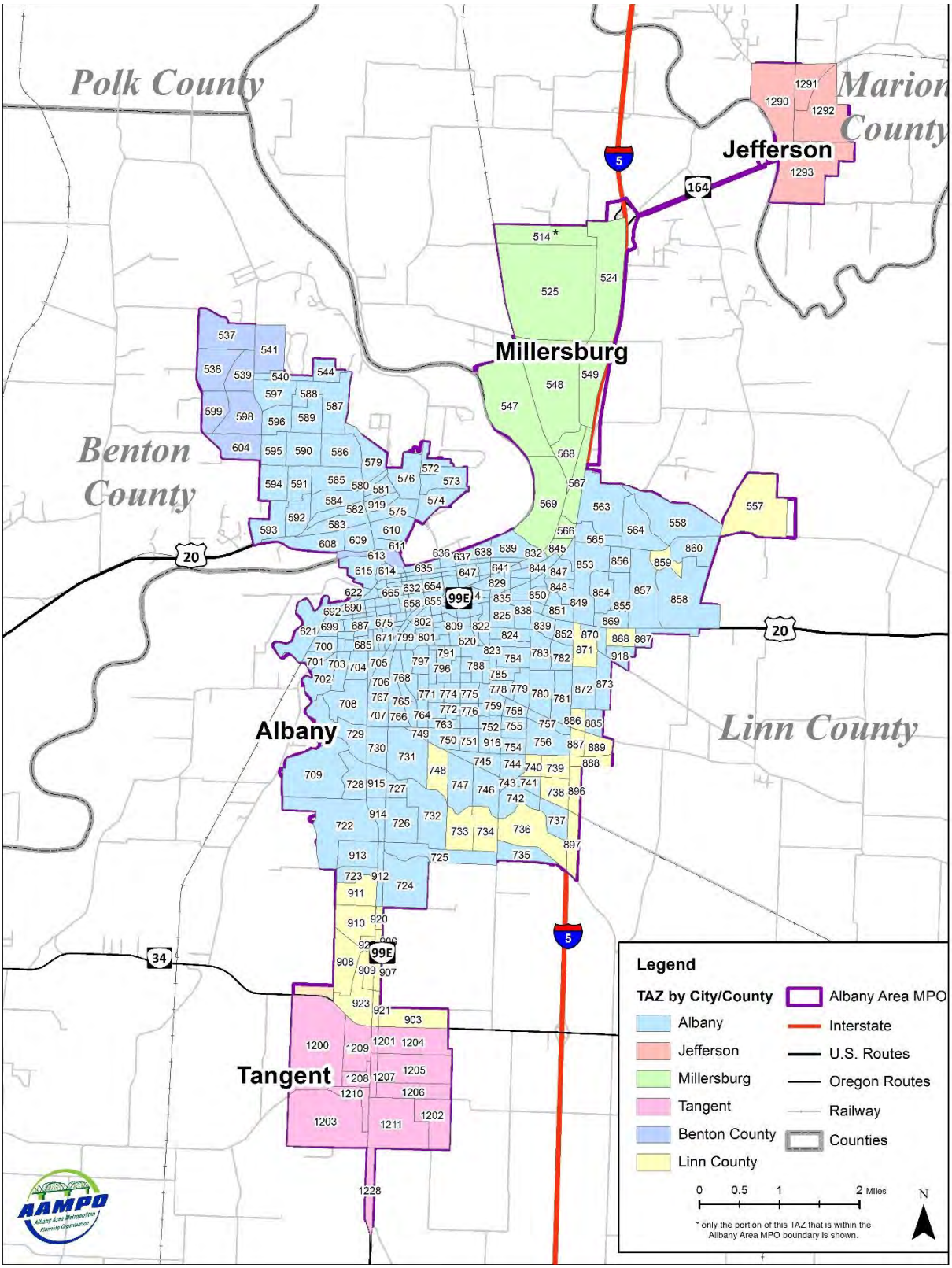
I-5 Widening and Knox Butte Rd Interchange Improvements (Preliminary Engineering)	South Jefferson to US 20 Interchange	AAMPO 2018-2021 TIP List	N/A
I-5 Resurfacing	North Jefferson to North Albany	AAMPO 2018-2021 TIP List	N/A
Hill St/Water Ave Railroad Crossing Improvement	Hill St/Water Ave	AAMPO 2018-2021 TIP List	N/A
Railroad Crossing Improvements	Albany to Eugene	AAMPO 2018-2021 TIP List	N/A
I-5 Resurfacing	North Albany to Halsey	AAMPO 2018-2021 TIP List	N/A
Ellsworth St (US 20) Bridge Improvement	Ellsworth St across Willamette River	AAMPO 2018-2021 TIP List	N/A
US 20 and OR 99E Signal Timing Improvements	Various locations in Albany	AAMPO 2018-2021 TIP List	N/A
US 20 Improvements	Geary St o Waverly St	AAMPO 2018-2021 TIP List	N/A
OR 99E/Airport Rd Intersection Improvements	OR 99E/Airport Rd	AAMPO 2018-2021 TIP List	No
US 20/Knox Butte Rd Intersection Improvements	US 20/Knox Butte Rd	AAMPO 2018-2021 TIP List	N/A
24th Ave Improvements[1]	Hill St to Geary St	AAMPO 2018-2021 TIP List	N/A
Salem Ave Improvements[1]	Geary St to East Albany city limits	AAMPO 2018-2021 TIP List	N/A
Queen Ave Improvements[1]	Geary St to OR 99E	AAMPO 2018-2021 TIP List	N/A
Old Salem Rd Preservation and Safety	-	AAMPO 2018-2021 TIP List	N/A
Old Salem Rd: Truax Creek Bridge Replacement	Truax Creek Bridge	AAMPO 2018-2021 TIP List	N/A
Old Salem Rd Sidewalk Connectivity	Milepost 0.18 – Milepost 0.86	AAMPO 2018-2021 TIP List	N/A
Cascades West COG Transportation Options	Albany and Corvallis MPO Boundaries	AAMPO 2018-2021 TIP List	N/A
Springhill Dr Overlay[1]	Hickory Street to Independence Highway	AAMPO 2018-2021 TIP List	N/A

[1] This project includes pavement preservation. It should be noted that pavement preservation projects are not included in the Financially Constrained Project List or Aspirational Project List.

Other types of projects that may have been identified and planned (non-capacity improvements such as minor signing and striping changes, multimodal improvements, or planned capacity improvements that are not currently funded) are not included in the current model.[26] Such improvements may be included in transportation alternatives that are analyzed at a later stage of the RTP process.

[26] Non-capacity improvements such as signing and striping are typically not reflected in travel demand models. Table 1 and Table 2 note constructed and committed projects that would not be included in the travel demand model as "N/A"

Figure 6-2: CALM Model TAZ Structure within AAMPO



Projected Land Use Changes

Land use is a crucial factor in forecasting future transportation demand. The amount of land that is to be developed, the type and scale (housing units or number of employees) of the land uses, and how the land uses are arranged within the model area have a direct impact on the future system.

Projected land uses were developed for the model area with the general development patterns based on the Comprehensive Plan designations for the Cities of Albany, Jefferson, Millersburg and Tangent. The overall growth in land uses was applied to individual TAZs with detailed input and review from staff at agencies within the region[27]. These population and employment assumptions form the basis for the two travel demand models used in forecasting:

- **Base Year (2010):** The base year model represents calibrated conditions for year 2010.
- **Future Year (2040):** The anticipated 2040 land uses and growth within and outside the model area.

Growth within AAMPO

The CALM model generally uses household and employment information as a basis for estimating future transportation activity. Different types of employment are associated with different types of origin-destination intensities and patterns in the p.m. peak hour. For example, TAZs with large employment numbers may generate a heavy outbound travel movement, sending trips toward TAZs with more households. Conversely, TAZs with numerous retail employees may attract trips in the p.m. peak hour.

Table 6-3 summarizes how households and employment are assumed to change between the 2010 base year and 2040. *Note: The summary provided in Table 6-3 is based on boundaries approximated by the TAZ boundaries (*Figure 6-2*) and may not exactly match current and future city limits.*

As listed in Table 6-3, the population and number of households within the entire AAMPO area is projected to increase by approximately 30 percent and 40 percent, respectively, from 2010 to 2040.[28] Albany, Millersburg[29] and Tangent each follow a similar trend and are projected to increase around 20 to 30 percent, while Jefferson would increase about 70 percent. Other unincorporated areas of Benton and Linn Counties will increase by 50 percent or more.

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[27] Memorandum: CALM Input Data Development – Task 3.1 Process and Technical Procedures, prepared by DKS Associates, June 19, 2014.

[28] The households increase at a higher rate in population due to an overall decrease in average household size.

[29] This takes into account the mill closure.

Overall, employment is projected to increase by approximately 45 percent. Individually, Albany, Jefferson and Linn County employment will follow this general increase. However, Millersburg is projected to increase approximately 90 percent, while Tangent is projected to increase approximately 65 percent. The employment within unincorporated Benton County will be relatively unchanged.

The model also includes enrollment data for primary schools and vehicular trip data for colleges. Education enrollment for primary schools will increase by roughly 30 percent within the AAMPO area. College trips are also expected to increase by roughly 30 percent (about 1,600 trips) within the AAMPO area.

Table 6-3: CALM Model Land Use Changes, 2010 - 2040[30]

Land Use Metric / Location	Year 2010	Year 2040	% Increase
Population (AAMPO Area)	57,770	74,331	29%
Albany	49,949	61,669	24%
Jefferson	3,168	5,276	67%
Millersburg	1,339	1,658	24%
Tangent	1,118	1,419	27%
Benton County (other unincorporated)	856	1,317	54%
Linn County (other unincorporated)	1,310	2,962	126%
Households (AAMPO Area)	22,408	31,215	39%
Albany	19,664	25,761	31%
Jefferson	1,085	2,180	101%
Millersburg	508	751	48%
Tangent	387	532	37%
Benton County (other unincorporated)	303	530	75%
Linn County (other unincorporated)	461	1461	217%
Total Employment (AAMPO Area)	23,164	33,950	47%
Albany	18,230	26,062	43%
Jefferson	424	581	37%
Millersburg	2,085	3,927	88%
Tangent	479	787	64%
Benton County (other unincorporated)	21	22	5%
Linn County (other unincorporated)	1925	2571	34%

Source: CALM Travel Demand Model

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

Note: The summary provided is based on boundaries approximated by the TAZ boundaries (Figure 6-2) and may not exactly match current and future city limits.

The following maps summarize the change in land use between 2010 and 2040. Figure 6-3 shows the increase in total households for each zone. Significant residential growth areas in the region include the south end of Jefferson, east of I-5 and north of US 20 in Albany, and the south end of Albany.

Figure 6-4 shows the increase in total employment for each zone. Significant employment growth areas include south Millersburg, south Albany and Albany north of the Willamette River.

Figure 6-5 shows growth in educational enrollment for primary schools and growth in college trips by zone. Significant educational growth areas include north Jefferson, LBCC and Albany east of I-5 and north of US 20.

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Figure 6-3: CALM Model Household Growth by TAZ

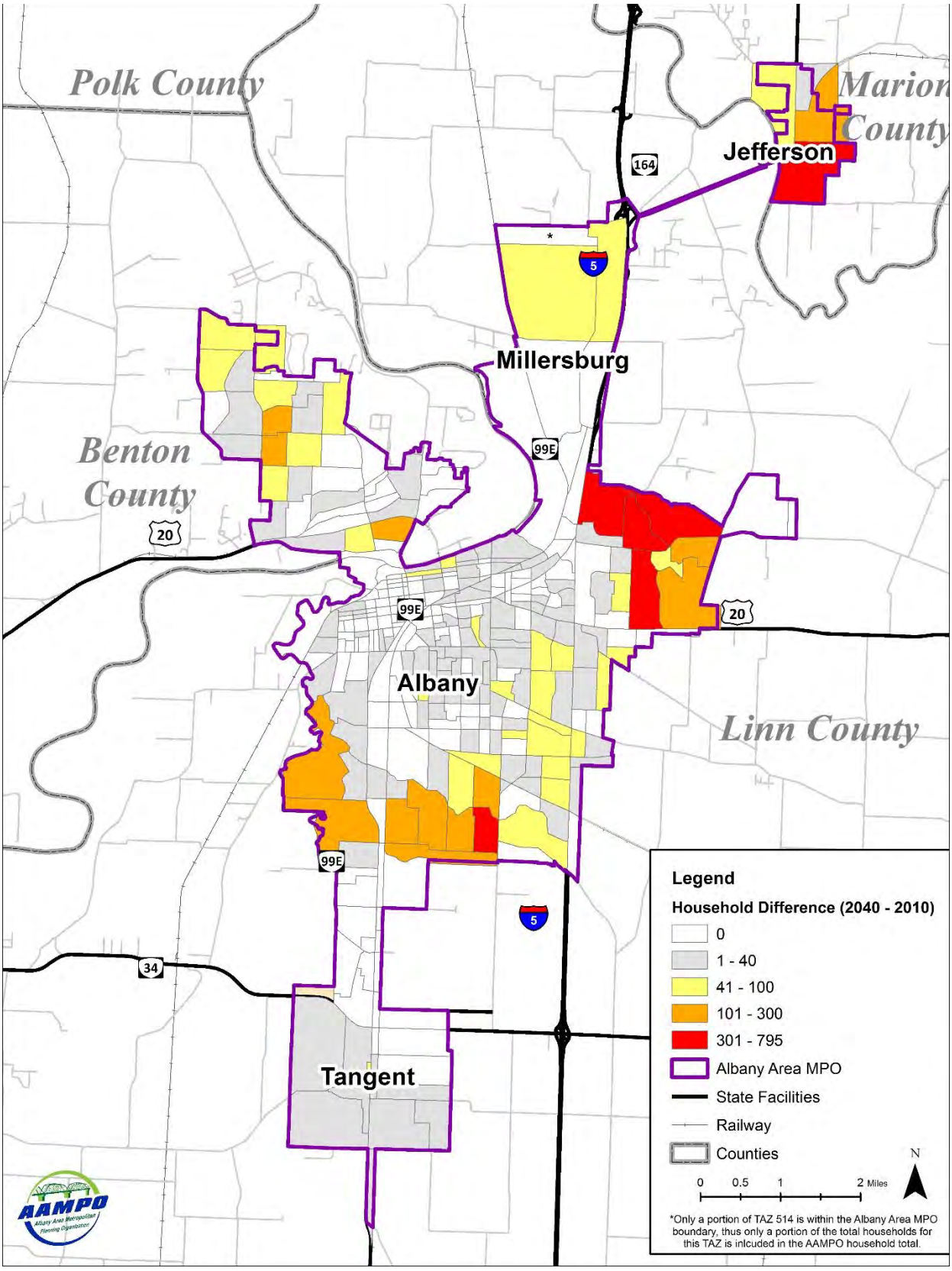


Figure 6-4: CALM Model Employment Growth by TAZ

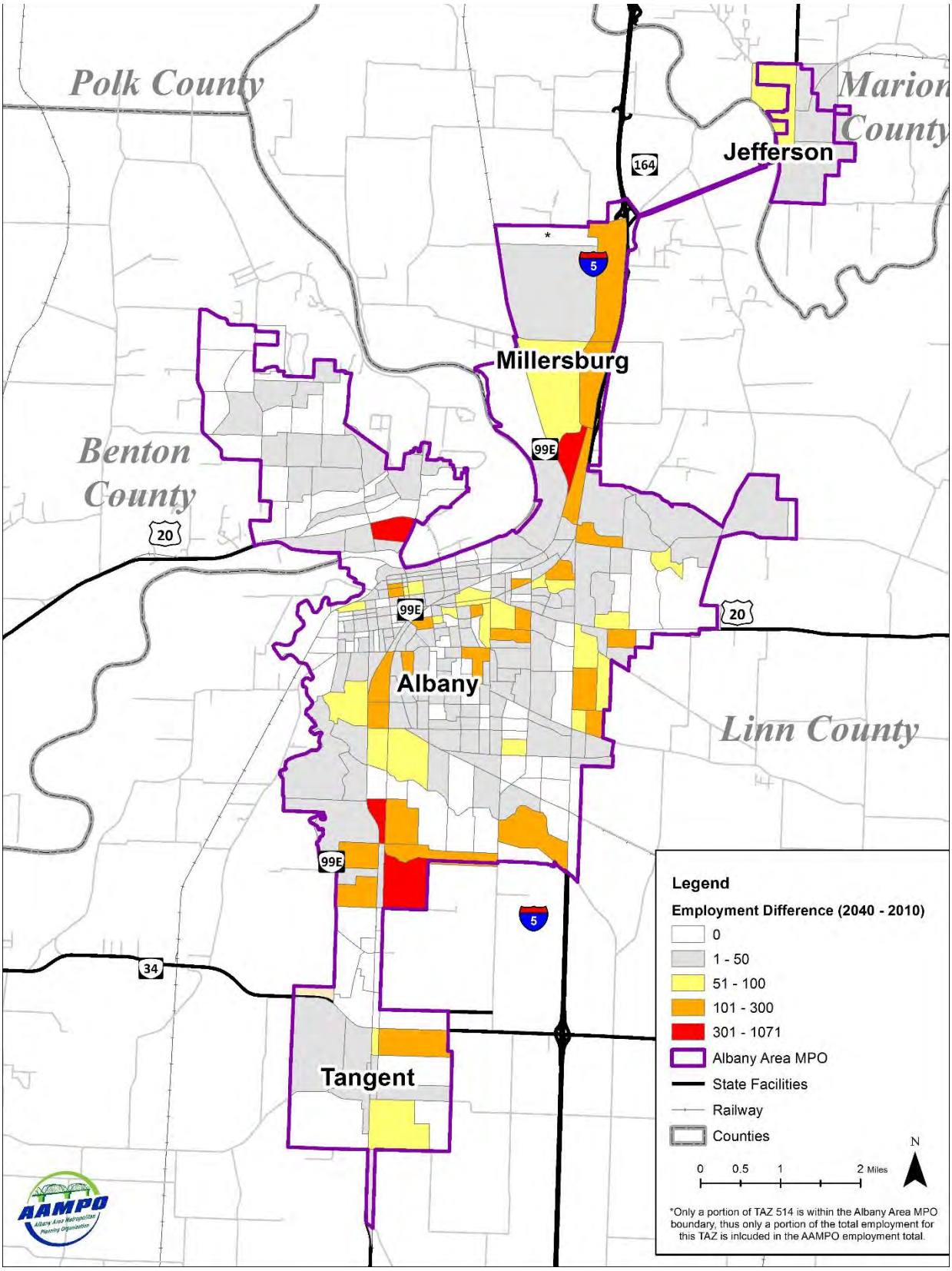
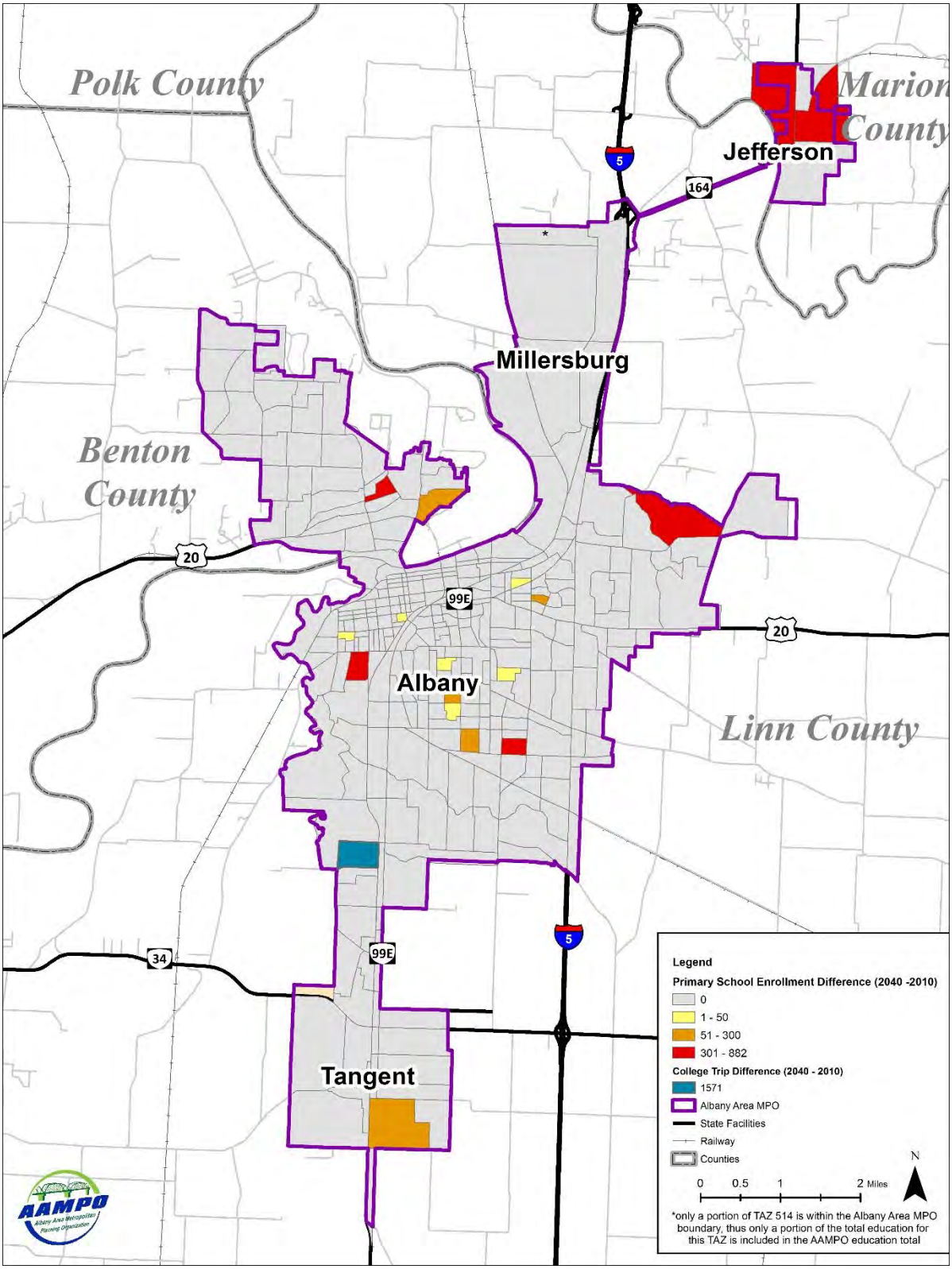


Figure 6-5: CALM Model Education Enrollment Growth by TAZ



Trip Generation

The model's trip generation process calculates the total number of productions (person trips) per TAZ using household attributes such as size, income, and number of workers. The trips are separated into different types (home-to-work, home-to-school, etc.) The ODOT trip generation process includes detailed trip characteristics for various types of housing, employment, and special activities. The model's process is tailored to variations in travel characteristics and activities in the region, including estimation of the likelihood for trip potential to be achieved for a particular land area.

The increase in the number of households and employees in the model area increases the overall number of trips generated. Table 6-4 summarizes the total p.m. peak hour motor vehicle trip ends for general community areas[31] within AAMPO for year 2010 and year 2040. The number of vehicle trips is expected to grow by approximately 30 percent between 2010 and 2040 if the land develops according to the modeled land use assumptions. This is generally consistent with the projected population increase, but is slightly lower than the projected number of households and employment increases – indicating a future reduction in the average rate of motor vehicle trip-making. Individually, Albany and Tangent areas are both projected to increase in this regard by approximately 25 percent, while Jefferson and Millersburg are projected to increase by approximately 60 percent. This significant difference in growth is due to the larger relative increase in population and employment for these areas[32].

Table 6-4: Vehicle Trip Generation (PM Peak Hour)

	2010 Trips	2040 Trips	% Increase
Land Use within AAMPO)			
Albany*	15,517	19,624	26%
Jefferson*	690	1,129	64%
Millersburg*	487	768	58%
Tangent*	387	479	24%
Total	17,081	22,000	29%

Source: CALM Travel Demand Model

Note: * These locations are not limited to the city limits and include surrounding unincorporated areas within the MPO to provide location context and consistency with the regional trip distribution information.

[31] These locations are not limited to the city limits and include surrounding unincorporated areas within the MPO to provide location context and consistency with the regional trip distribution information.

[32] Table 1 indicates that Jefferson is projected to have a higher relative population growth while Millersburg would experience a higher relative employment growth.

Trip Distribution

The trip distribution step estimates trips between origins and destinations. TAZ zone pairs based on a wide variety of trip choice factors including travel time, travel cost, and trip purpose. The model uses these factors to decide on the destination for each trip produced (started) in the TAZ. For example, home-based shopping trips produced near a downtown shopping area will choose the downtown shopping area destination over a similar shopping area in a different town due to shorter travel times and lower travel cost. The trip distribution step creates tables organized by trip type (home-to-work, home-to-school, etc.) that show the travel patterns between the TAZs in the region.

Although the model distributes all person trips, vehicle trip distribution is the most relevant for future traffic forecasting. Thus, the distribution summaries and tables in this section summarize the vehicle trip distributions. The following section (titled "Mode Choice") describes how the model converts person trips into vehicle trips.

In projecting future traffic volumes, it is important to consider potential changes in regional travel patterns. Although the locations and amount of traffic generation in the AAMPO area are essentially a function of future land use in the four cities, the distribution of trips is also influenced by expected congestion on roadways and regional growth (outside the MPO).

The demand for traveling to areas within AAMPO was summarized to determine regional patterns among key areas. Figures 6-6 and 6-7 show the trip distribution within the AAMPO area and to/from all directions. The highest non-MPO regional distribution occurs to the west (including Corvallis) and indicates approximately 13 percent of MPO trips travel to/from the west in 2010. In year 2040, the directional split is more pronounced, with relatively more traffic entering the MPO and relatively less traffic leaving the MPO to the west during the p.m. peak hour.

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Figure 6-6: CALM Model Vehicle Trip Distribution - Regional Travel Patterns (2010 PM Peak Hour)

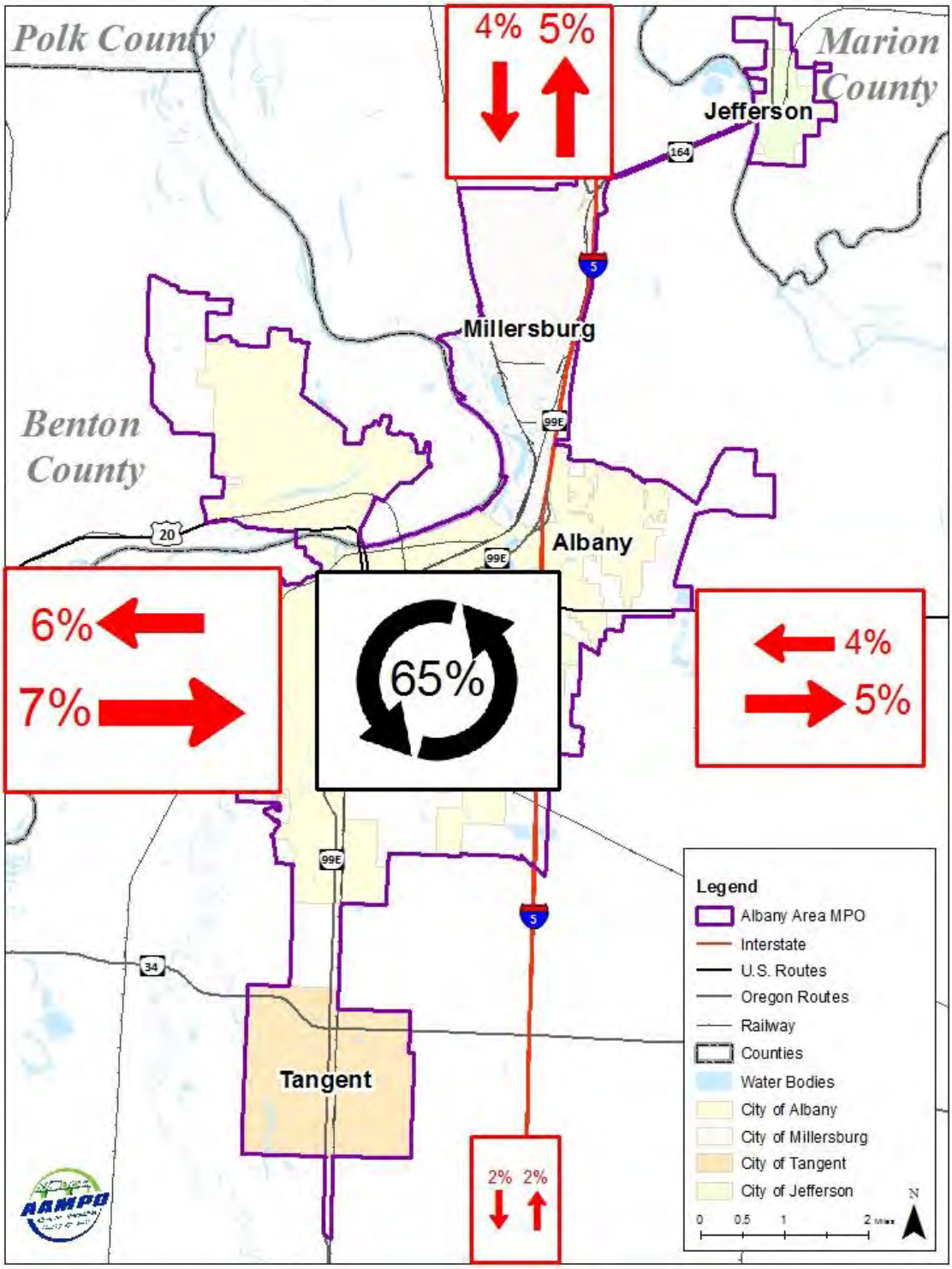

Figure 6-7: CALM Model Vehicle Trip Distribution - Regional Travel Patterns (2040 PM Peak Hour)

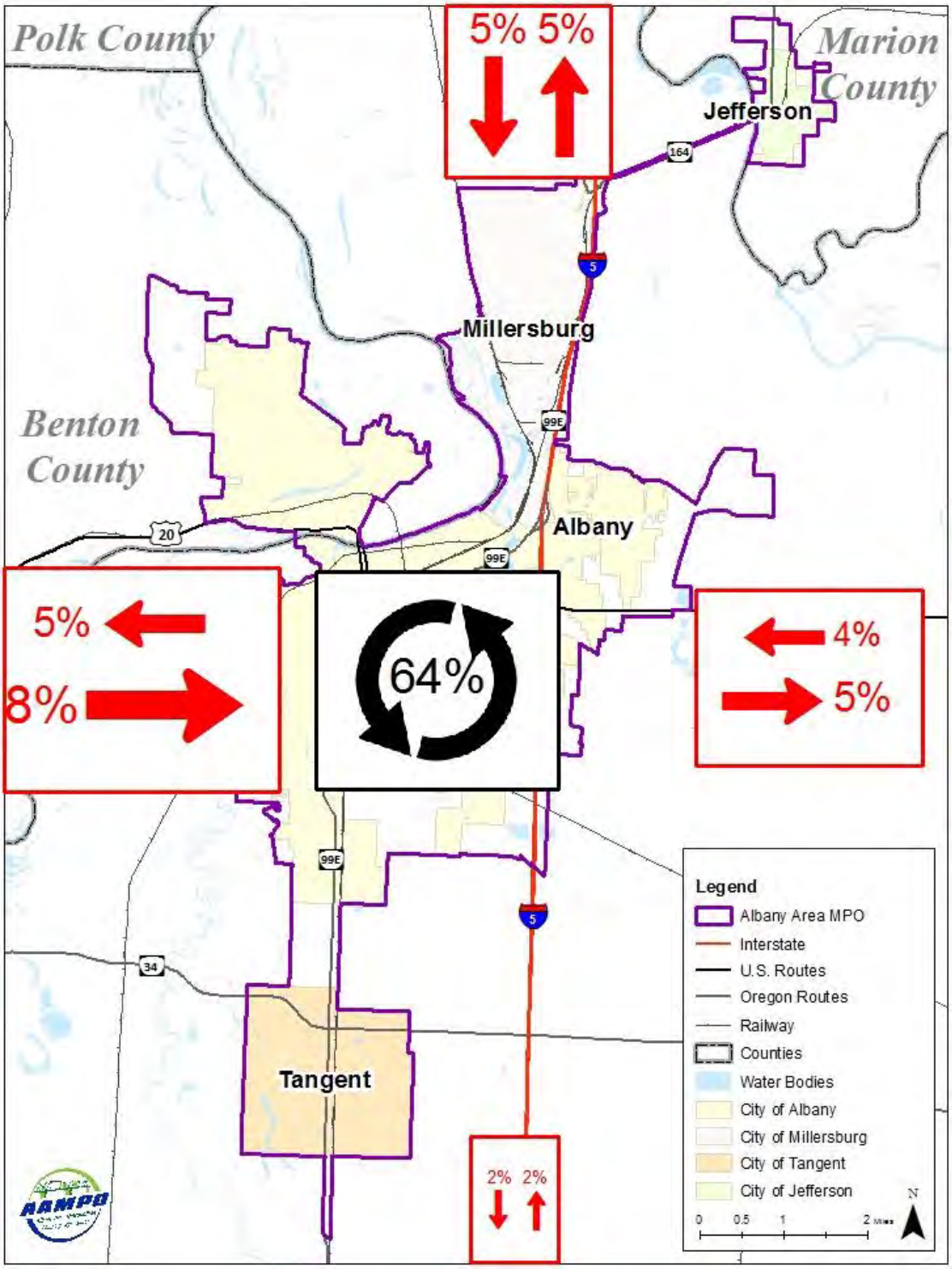

Table 6-5 lists the existing (year 2010) trip distribution between and within each area of the region. This table is based on both origin and destination trips within each particular area and lists the percentage of trips to/from each particular region. Additional details (demand and further breakdown for smaller areas) are attached. The existing trip distribution indicates the following regional travel patterns (which are demonstrated in additional detail in appendix Table A-1):

- Approximately 30 percent of all Jefferson trips stay within Jefferson, about 10 percent travel to Albany, Millersburg or Tangent and 20 percent travel outside of the MPO.
- Approximately 10 percent of Tangent trips remain in Tangent, while 25 percent travel to Albany, Millersburg or Jefferson and 20 percent to areas outside of the AAMPO area.
- Approximately 5 percent of Millersburg trips remain in Millersburg while 35 percent travel to Albany, Jefferson or Tangent. About 20 percent of trips beginning in Jefferson travel to areas outside of the AAMPO area.
- Approximately 65 percent of Albany trips remain in Albany, while only 2 percent of Albany trips travel to Millersburg, Tangent or Jefferson and 15 percent of trips from Albany travel to areas outside the MPO

Table 6-5: CALM Model Vehicle Trip Distribution within the AAMPO Area (2010 PM Peak hour)

	Jefferson	Tangent	Millersburg	Albany
Internal	28%	11%	6%	64%
To Other Cities in MPO	10%	24%	35%	2%
From Other Cities in MPO	19%	20%	19%	3%
To Non-MPO	21%	22%	19%	15%
From Non MPO	22%	22%	20%	16%

Source: CALM Travel Demand Model

Table 6-6 summarizes regional trip distribution for year 2040 p.m. peak hour. Distribution is similar to 2010, with most regional distribution pairs remaining relatively unchanged (changing by two percent or less).

Table 6-6: CALM Model Vehicle Trip Distribution within the AAMPO area (2040 PM peak hour)

	Jefferson	Tangent	Millersburg	Albany
Internal	29%	12%	6%	62%
To Other Cities in MPO	9%	25%	37%	3%
From Other Cities in MPO	19%	20%	18%	3%
To Non-MPO	20%	20%	18%	15%
From Non MPO	23%	23%	21%	17%

Source: CALM Travel Demand Model

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Mode Choice

The potential modes of travel in the CALM model include driving alone, driving with a passenger, using a park and ride, using walk-access transit, biking, and walking. The attractiveness of each mode for each trip is calculated based on the following factors:

- Travel Time (in-vehicle, wait, transit access, etc.)
- Cost (parking, fare, auto operating, etc.)
- Other travel mode characteristics (reliability, safety, comfort, etc.)
- Person/Household characteristics (income, auto ownership, age, etc.)
- Trip purpose characteristics (shopping, number of stops, etc.)

These mode choice factors are assigned various levels of attraction based on feedback from local surveys and other sources of data applicable to the region. The trips between zones developed in Trip Distribution are split between the different travel modes based on the calculated attractiveness of each mode for each trip pair. The mode choice model creates mode specific trip tables showing travel between the TAZ zone pairs.

University Travel Model

The CALM model includes a special university model to account for the travel impacts of Oregon State University (OSU) on the region. This model accounts for university-related travel patterns such as residential clustering, mode use, time-of-day, and parking supply. The model also allows multi-stop trips by simulating travel patterns by person. From an AAMPO perspective, the university component of the CALM model provides a higher level of detail to the modeled regional interaction between Albany and Corvallis.

Post Processing and Model Application to AAMPO

The year 2010 and year 2040 model and assignments were prepared and provided by ODOT. Limited additional minor network refinements were applied during the forecasting process to add detail to account for local connectivity and circulation patterns, particularly in the vicinity of study intersections. Adding the new network detail helps refine local circulation within the AAMPO area without affecting routing in the overall regional model. Modifications include:

- Shifted the connector from TAZ 1293 (south Jefferson) from the intersection of OR 164/Main Street to S Main Street/High Street
- Added the north leg of Main Street to the OR 164/Main Street intersection. Added connector from TAZ 1290 (west Jefferson) to the Main Street north leg.
- Shifted connector from TAZ 755 (in southeast Albany) from 34th Avenue/Waverly Drive intersection to 34th Avenue/Ermine Street intersection
- Shifted connector from TAZ 727 (in south Albany) from 53rd Avenue/OR99E intersection to College Park Drive/OR99E intersection

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PM peak hour model volumes were extracted from the model for both the base year (2010) and forecast year (2040) scenarios. A "post processing" technique following NCHRP 255 Methodology[33] was utilized to refine model travel forecasts to the volume forecasts presented in Table 6-7 and

Table 6-8. Post processing is the application of manual adjustments to existing count data and model projections[34] to minimize potential model error and bias.

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[33] Highway Traffic Data for Urbanized Area Project Planning and Design - National Cooperative Highway Research Program Report 255, Transportation Research Board, Washington D.C., 1982.

[34] See the Existing Conditions project memo for more information on existing year (2014) traffic counts and the seasonal adjustment done to create peak seasonal and average annual volume sets.

Table 6-7: 2040 30 Highest Hour Peak Hour Traffic Forecasts for Study Intersections

		Northbound			Southbound			Eastbound			Westbound		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 164	North Avenue	0	305	230	45	370	0	0	0	0	170	0	45
Main Street	OR 164	205	90	155	5	95	20	15	430	340	250	305	5
Scravel Hill Road	OR 164	25	10	115	15	5	0	0	675	45	105	420	20
I-5 NB Ramps	OR 164	0	5	5	520	5	10	80	205	0	0	375	70
I-5 SB Ramps	OR 164	0	0	0	75	0	95	20	230	0	0	155	230
Century Drive	I-5 NB Ramps	245	225	0	0	185	0	30	0	105	0	0	0
Old Salem Road	I-5 SB Ramps	0	540	25	185	430	0	0	0	0	35	0	10
Scravel Hill Road	Knox Butte Road	15	80	20	15	50	60	45	135	15	5	135	15
Clover Ridge Road	Knox Butte Road	0	0	0	60	0	195	380	630	0	0	385	60
I-5 NB Ramps/Century Drive	Knox Butte Road	70	25	165	185	0	190	175	1005	0	0	620	90
OR 99E	Airport Road/Albany Avenue	120	1280	170	190	1070	220	305	205	120	150	240	70
Waverly Drive	OR 99E	140	115	255	35	180	20	5	1270	150	265	1050	25
Waverly Drive	US 20 (Santiam Highway)	190	310	505	150	375	55	80	1125	130	320	750	75
Airport Road/I-5 SB Ramps	US 20 (Santiam Highway)	80	110	85	165	150	240	75	1450	125	140	910	135

		Northbound			Southbound			Eastbound			Westbound		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Fescue Street/I-5 NB Ramps	US 20 (Santiam Highway)	380	135	95	75	70	180	400	905	530	65	705	160
Scravel Hill Road	US 20 (Santiam Highway)	0	0	0	0	0	80	125	580	0	0	480	5
Three Lakes Road	Seven Mile Lane	0	0	0	40	0	30	30	140	0	0	160	60
Waverly Drive	34th Avenue	125	710	0	0	665	200	220	0	175	0	0	0
OR 99E	53rd Avenue	80	1115	0	0	1025	175	115	0	55	0	0	0
OR 99E	Queen Avenue	15	1145	150	210	1045	245	360	220	50	205	180	210
Lyons Street (US 20)	2nd Avenue	0	1305	75	0	0	0	250	755	0	0	0	0
Lyons Street (US 20)	1st Avenue	140	1410	0	0	0	0	0	0	0	0	175	600
Ellsworth Street (US 20)	1st Avenue	0	0	0	0	1820	255	0	0	0	75	215	0
Ellsworth Street (US 20)	2nd Avenue	0	0	0	590	1285	0	0	435	130	0	0	0
Springhill Drive	US 20 (Albany-Corvallis Hwy)	0	1510	610	70	1690	0	0	0	0	465	0	35
North Albany Road	US 20 (Albany-Corvallis Hwy)	5	5	5	450	5	50	110	1120	5	5	875	475
Scenic Drive	US 20 (Albany-Corvallis Hwy)	0	0	5	25	0	70	145	1520	0	0	935	60
Scenic Drive	Gibson Hill Road	0	65	80	315	60	0	0	0	0	25	0	160

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Table 6-8: 2040 Average Weekday PM Peak Hour Traffic Forecasts for Study Intersections

		Northbound			Southbound			Eastbound			Westbound		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
OR 164	North Avenue	0	290	215	40	350	0	5	5	0	160	5	40
Main Street	OR 164	190	85	145	5	90	20	15	405	320	235	290	5
Scravel Hill Road	OR 164	25	10	110	15	5	0	5	635	40	100	395	20
I-5 NB Ramps	OR 164	5	5	5	490	5	10	75	195	5	5	355	65
I-5 SB Ramps	OR 164	0	0	0	70	0	90	20	215	0	0	145	215
Century Drive	I-5 NB Ramps	215	195	0	0	160	0	25	0	90	0	0	0
Old Salem Road	I-5 SB Ramps	0	510	25	175	405	0	0	0	0	35	0	10
Scravel Hill Road	Knox Butte Road	15	75	20	15	45	55	45	125	15	5	130	20
Clover Ridge Road	Knox Butte Road	0	0	0	55	0	185	360	595	0	0	365	55
I-5 NB Ramps/Century Drive	Knox Butte Road	60	25	145	165	0	170	155	885	0	0	545	80
OR 99E	Airport Road/Albany Avenue	115	1210	160	180	1010	210	290	195	110	140	225	65
Waverly Drive	OR 99E	135	110	240	35	170	20	5	1200	140	250	995	25
Waverly Drive	US 20 (Santiam Highway)	190	310	505	150	375	45	65	930	130	320	620	75
Airport Road/I-5 SB Ramps	US 20 (Santiam Highway)	80	110	85	165	150	195	65	1200	125	140	755	135
Fescue Street/I-5 NB Ramps	US 20 (Santiam Highway)	380	135	95	75	70	145	335	750	530	65	585	160

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		Northbound			Southbound			Eastbound			Westbound		
		NBL	NBT	NBR	SBL	SBT	SBR	EBL	EBT	EBR	WBL	WBT	WBR
Scravel Hill Road	US 20 (Santiam Highway)	0	0	0	5	0	65	105	480	0	0	395	5
Three Lakes Road	Seven Mile Lane	0	0	0	40	0	30	30	135	0	0	150	55
Waverly Drive	34th Avenue	120	675	0	0	630	190	220	0	175	0	0	0
OR 99E	53rd Avenue	75	1055	0	0	970	165	115	0	55	0	0	0
OR 99E	Queen Avenue	15	1085	140	200	990	230	360	220	50	205	180	210
Lyons Street (US 20)	2nd Avenue	0	1080	60	0	0	0	250	755	0	0	0	0
Lyons Street (US 20)	1st Avenue	140	1165	0	0	0	0	0	0	0	0	175	600
Ellsworth Street (US 20)	1st Avenue	0	0	0	0	1505	255	0	0	0	75	215	0
Ellsworth Street (US 20)	2nd Avenue	0	0	0	490	1065	0	0	435	130	0	0	0
Springhill Drive	US 20 (Albany-Corvallis Hwy)	0	1250	505	60	1400	0	0	0	0	465	0	35
North Albany Road	US 20 (Albany-Corvallis Hwy)	5	5	5	450	5	50	90	925	5	5	725	390
Scenic Drive	US 20 (Albany-Corvallis Hwy)	5	0	5	20	0	55	120	1255	5	5	775	55
Scenic Drive	Gibson Hill Road	0	60	75	295	55	0	0	0	0	30	0	150

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Chapter 7: Future Transportation Needs

Findings from the existing condition analyses, travel demand modeling and stakeholder input helped to identify future transportation system needs as outlined below, and in more detail in *Technical Memorandum #8 Future Transportation Conditions and Needs, Technical Memorandum #9 Transit Future Conditions*, and the *Summary of Public Comments*.

Regional Roadway System

Intersection Mobility

Two unsignalized intersections currently do not meet Oregon Highway Plan mobility targets: Century Drive & I-5 NB Off Ramp/Knox Butte Road and Scenic Drive/ US 20. An additional nine locations are projected to not meet their 2040 mobility targets during either the daily pm peak or the seasonal peak:

- OR 164 / North Ave
- OR 164 / I-5 NB ramps
- OR 164 / Main St
- Knox Butte Rd / I-5 NB off-ramp
- Knox Butte Rd / Clover Ridge Rd
- US 20 / Scenic Dr
- US 20 / Springhill Dr
- OR 99E / Airport Rd
- US 20 / Waverly Dr
- OR 99E / Queen Ave
- US 20 (Lyons St) / 1st Ave

Regional Capacity Needs

The Corvallis Albany Lebanon Model (CALM) travel demand model was used to assess the condition of future corridors in the region. Table 7-1 illustrates the locations where model volume outputs are equal to or exceed the coded link capacity. Links colored red are over the model capacity, while those that are yellow are nearing capacity, and links colored green are moderately congested. All other links are relatively uncongested under 2040 conditions. The model does not incorporate added capacity due to the presence of center turn lanes, i.e., a two-lane street has the same coded capacity as a three-lane street. Several arterials and collectors with the AAMPO area such as Queen Avenue, Geary Street, and Waverly Drive have an existing center turn lane. A current road project on North Albany Road includes adding center turn lanes and widening the existing cross section. The raw model volume-to-capacity ratios on Queen Avenue, Geary Street, Waverly Drive, and North Albany Road indicate near or over capacity conditions at several locations. As the capacity benefits of center turn lanes are not included in the travel demand model, these locations were not included in the corridor deficiency lists in Table 7-1, which lists the regional corridors nearing or exceeding capacity by the year 2040.

Table 7-1: Summary of 2040 Committed Network Corridor Capacity Deficiencies

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Road	Direction of Travel	From	To	Deficiency
East-West Regional Corridors				
US 20	Eastbound	MPO Boundary	Blossom Ln	Over Capacity
		North Albany Rd	Springhill Rd	Nearing Capacity
		Springhill Rd	2nd Ave	Over Capacity
	Southbound	Springhill Rd	2nd Ave	Over Capacity
		2nd Ave	4th Ave	Nearing Capacity
		5th Ave	7th Ave	Over Capacity
		7th Ave	OR 99E	Nearing Capacity
	Westbound	2nd Ave	Springhill Rd	Over Capacity
	Northbound	OR 99E WB Off-Ramp	5th Ave	Nearing Capacity
		3rd Ave	2nd Ave	Nearing Capacity
		2nd Ave	Springhill Rd	Over Capacity
US 20/ OR 99E	Eastbound	OR 99E EB On-Ramp	9th Ave	Over Capacity
		9th Ave	Madison St	Nearing Capacity
	Westbound	Madison St	OR 99E WB Off-Ramp	Over Capacity
Gibson Hill Rd	Westbound	North Albany Rd	Broadway St	Over Capacity
OR 164	Eastbound	I-5 NB Off-Ramps	Main St (Jefferson)	Over Capacity
North-South Regional Corridors				
OR 99E	Northbound	Airport Rd	NB I-5 On-Ramp	Over Capacity
I-5 Ramps	Northbound	OR 99E	I-5	Over Capacity

Source: CALM Travel Demand Model
Note: The model does not incorporate added capacity due to the presence of center turn lanes.

The congestion and over capacity future conditions of US 20 between Corvallis and downtown Albany have the potential to impact the alternate regional route of OR 34. The travel demand model indicates that traffic (approximately 100 p.m. peak hour vehicles in 2040) diverts to OR 34 due to the level of congestion of US 20. The US 20 Bridge across the Willamette River indicates potential future bottleneck issues.

The over-capacity conditions on the OR 99E/US 20 couplet could cause additional burden to the local system, with regional traffic re-routing onto parallel local streets to avoid mainline delays. Approximately 350 vehicles desiring to travel east-west along US 20 and OR 99E are projected to change their route to avoid congestion in 2040 during the p.m. peak hour. Approximately 250 vehicles traveling along the US 20/OR 99E couplet through Albany are projected to detour to SE Salem Avenue.

OR 164 is a key east-west regional route connecting Jefferson to the rest of the AAMPO area. With limited alternate routing opportunities, the modeled over-capacity conditions on this arterial could lead to increases in travel time between Jefferson and Millersburg. The over-capacity issues at the I-5/OR 99E interchange are more intersection than corridor related and are

addressed in the following section. Congestion along additional regional routes also has the potential to divert traffic flow. All values provided are relative to the 2040 p.m. peak hour:

- Queen Avenue also provides east-west connectivity within Albany. When Queen Avenue becomes congested it is likely that vehicles shift onto adjacent local roads.
- Scenic Drive to US 20 is a primary connection for travelers to/from Albany north of the Willamette River. Approximately 100 vehicles deviate from Scenic Drive and US 20 to Gibson Hill Road and North Albany Road to minimize delay.
- Approximately 100 vehicles desiring to travel north-south along I-5 alter their route onto lower class roads such as OR 99E and Old Salem Road.
- Approximately 100 vehicles from Waverly Drive shift onto nearby roads like Geary Street or Center Street.

Public Transportation System Needs

As the Albany area grows over the next few decades, additional transit investments will be required to serve current and future markets. This expansion will be based on multiple needs, described below.

- **Expected growth**. The MPO is expected to add 20,000 new people and 10,000 new jobs over the next few decades. To maintain existing per capita and per employee service levels in the City of Albany, transit service hours will need to increase between 30 and 70 percent.
- **Travel pattern changes**. Residential growth in East Albany and Jefferson, and employment growth in Millersburg will increase travel demand to those areas at a rate greater than the overall MPO travel increase. These locations may require additional transit service to meet their specific needs.
- **Existing service**. Limited frequency and long travel times make current service ineffective for a wide variety of demographic groups. Improving service would make transit more valuable for more people and for a wider variety of trips.
- **Capital needs**. As the Albany transit fleet ages, and as service expands to address latent and future demands, additional vehicles will need to be acquired. A new bus maintenance facility will also be needed to accommodate the larger fleet size.
- **Sidewalk connectivity**. All transit trips start or end with a walk, requiring a robust network of safe and connected sidewalks and crosswalks to connect ridership markets with the service. Coordination between transit providers and local jurisdictions will be necessary for this network to be established in time for expanded or new service.
- **Riders not covered by special programs**. Albany is a key destination for low-income household workers from Jefferson, Millersburg and Tanget. The key gap in the current public transportation system is service for younger disabled individuals and lower income individuals in smaller communities who are not eligible for Medicaid or other special programs. These individuals may not have a vehicle, physical capacity, money, or family/friends that are available to assist with transportation.

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- **Expanding existing services**. There are opportunities to increase existing programs to support usage of current transportation options. This includes expansion of Transportation Options programming throughout the AAMPO area and expansion of volunteer programs like Volunteer Caregivers and the Good Samaritan Senior Companion. These volunteer driver programs can help fill the gaps in small cities, provided the programs have the resources and volunteers to provide increased service in those communities.
- **Needs in Tangent**. A need was identified for 'last mile' connectivity to/from the existing Linn-Benton Loop service for school and work commuters. For those in need of life-line transportation, a demand-responsive service similar to the arrangement in Millersburg may work.
- **Needs in Jefferson**. At the Albany Area MPO Policy Board, the City of Jefferson has expressed a need for demand-response service to provide its residents with mobility options. Commuter and medical trips represent the greatest unmet need. Residents tend to travel to both Salem and Albany for work and shopping, and university students tend to travel to Albany (LBCC) or Corvallis (OSU). Anecdotally, residents are seen walking, hitchhiking or bicycling to work in Albany, indicated a need for improved commuter connections.
- **Needs in Millersburg**. The Millersburg Transportation System Plan has a strong emphasis on improving the bicycle and pedestrian network and less emphasis on public transportation. An aging population may point to a need for improved non-driving options in the future, however. In the short-term, existing Call-A-Ride services can be advertised on the City's website.
- **Ridership in Albany has increased considerably in recent years**. While this trend has slowed, high demand for transit service exists in the community and may require increased services to meet the demand.
- **Regional connections are important**. The Linn-Benton Loop carries more passengers each day than all of Albany's local routes, combined. Additionally, there are many people who live in Albany but commute to work or school in Corvallis, and students who take classes in both cities. This demonstrates an important need to maintain and improve regional connections.
- **The busiest stops indicate the important needs of passengers**. The busiest stops on all routes demonstrate how important access is to colleges and university, shopping centers and grocery stores, and transfer locations between routes. The on-board survey found 49 percent of passengers in Albany are affiliated with OSU or LBCC. Additionally, stop-level boarding data show a high concentration of ridership activity in the Heritage Plaza area. This demonstrates the importance transit service provides to people who rely upon ATS for daily errands.
- **Passengers utilize the transfers between routes to connect themselves to the region**. Passengers value the timed transfers between Routes 2 and 3 to travel regionally. Additionally, many passengers who travel between Corvallis and Albany during the midday depend upon transfers to connect them to their final destination. Despite its importance and

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simplicity, the process of transferring, and the fare associated with the transfer are not well understood or easy to find for new transit users.

- **Lack of services in smaller communities.** Local bus service is limited to the City of Albany and Call-A-Ride service only operates in Albany and Millersburg. Residents of smaller communities depend upon health care, shopping and other services in Albany; however, there is no direct transit service from these communities into Albany.
- **Fixed-route service in Albany needs to better serve locations frequented by seniors and those with a disability.** The current route design and schedules, along with barriers limiting access transit result in overreliance on the Call-A-Ride and medical/shopper shuttle services.

Pedestrian System

Pedestrian deficiencies were identified on the regionally significant corridors (arterials and collectors)[35]. Pedestrian deficiencies include areas with either gaps within an existing sidewalk, lack of a dedicated pedestrian facility or pedestrian facilities with major safety concerns. There are considerable pedestrian facility gaps in the outlying areas (nearly 55 percent of the regionally significant roadways) including the outer areas of Albany and the surrounding cities, Millersburg, Jefferson and Tangent. Incomplete sidewalk coverage includes a lack of dedicated pedestrian facilities as well as sidewalks on only one side of a street. Figure 7-1 shows locations with pedestrian rating "poor" (lack sidewalks). Complete sidewalk coverage will increase pedestrian mobility within and between the outlying areas as well as support future growth.

Pedestrian Safety

While the pedestrian connectivity within the Albany area is generally adequate, there are potential safety concerns. Two locations, the first along the US 20 couplet (Ellsworth Street and Lyons Street) through downtown Albany and the second area surrounding Heritage Plaza Shopping Center, have experienced a high number of vehicle-pedestrian crashes.

ADA Requirements

A high-level review of the ADA (Americans with Disabilities Act) design standards within the AAMPO area revealed that the ADA compliance is incomplete. Generally, the recently rehabilitated or constructed roadways, such as North Albany Road or Oak Street in Albany[36], , have been designed to meet ADA requirements while older areas have incomplete ADA design features. For example, there are inconsistent curb ramps at the intersection of 9th

[35] Additional gaps or deficiencies on the local system were not identified.

[36] Memorandum: Albany Area Metropolitan Planning Organization Regional Transportation Plan DRAFT Technical Memorandum #4: Existing Conditions, prepared by DKS Associates, August 10, 2015

Avenue/Calapooia Street in Albany, [36]. A separate study is necessary to fully evaluate ADA compliance within the AAMPO area.

Pedestrian Needs from Prior Plans

Additional needs with regional significance that have been identified in past planning efforts include:

- Most pedestrian generators have adequate pedestrian facilities, however several areas in North Albany adjacent to schools and parks lacked sidewalk connections. (Albany TSP)
- Albany needs approximately 7.5 miles of trails as of the 2006 plan date and will need over 9.5 miles in the year 2015. (Albany Park and Recreation Master Plan)
- Development of a regional trails plan (Linn County Park and Recreation Plan)
- Enhancement of access to the Willamette River. Hyak Park sits just outside of AAMPO along US 20. (Benton County Natural Areas and Parks Plan)
- Support for capitalizing on the large number of low-traffic roadways, existing trails, and railroad corridors to connect communities, natural areas, parks and other destinations (Benton County Natural Areas and Parks Plan)
- Collaborative management for a more organized and connected system of parks and trails (Benton County Natural Areas and Parks Plan)
- Conducting a gap analysis with partner agencies to identify priority multimodal path linkages that will have minimal impact on private property (Benton County Natural Areas and Parks Plan)
- Developing recreation facilities that support popular activities – boating, walking, picnicking, fishing, camping, and swimming (Marion County Parks Master Plan)

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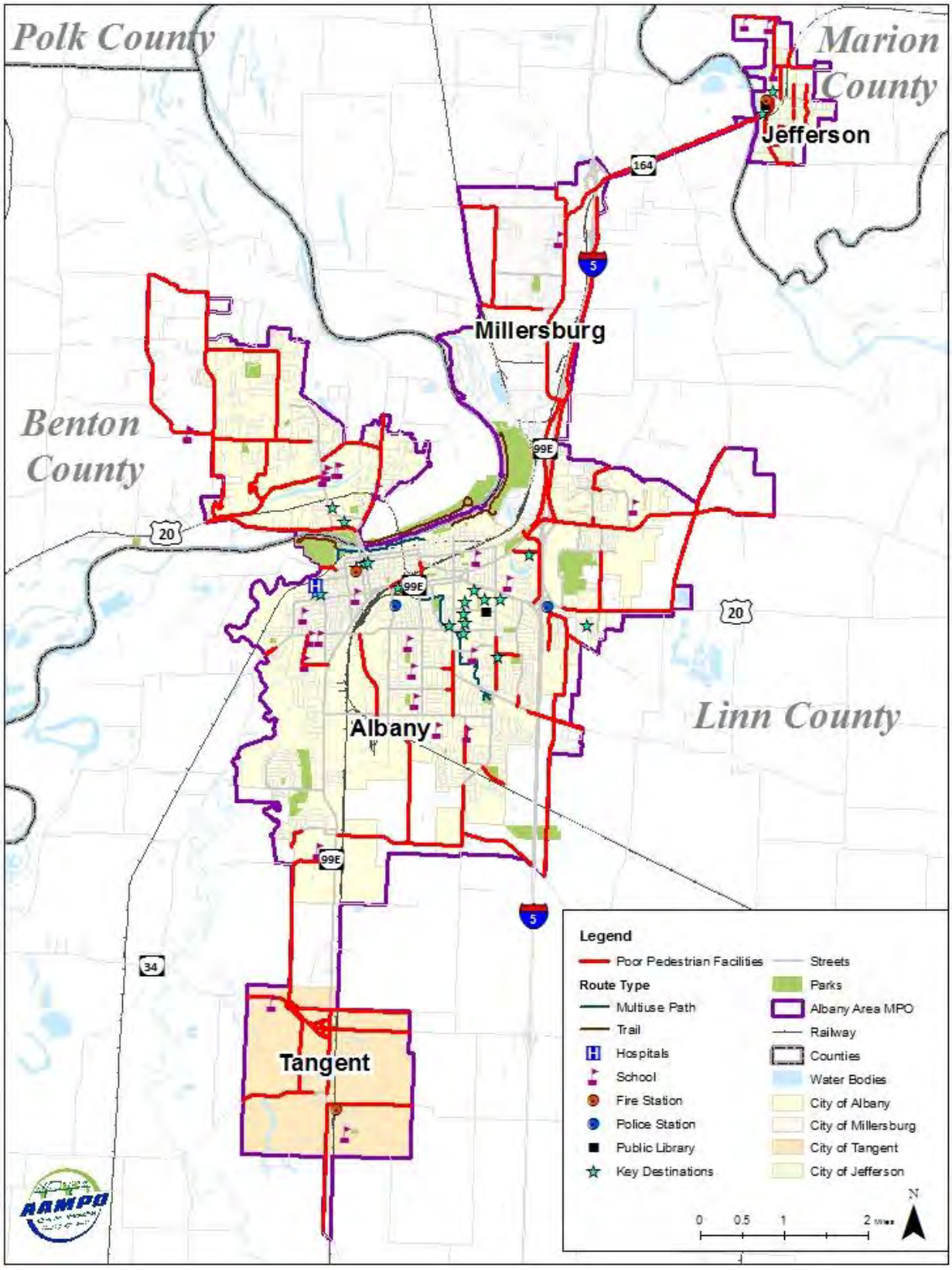
Figure 7-1: "Poor" Pedestrian Locations (Sidewalk Gaps) on Major Roadways



Bicycle System

Bicycle deficiencies were identified on the regionally significant corridors (arterials and collectors)[37]. Bicycle facilities connecting the Albany area to the outlying areas south to Tangent, west to North Albany and north to Millersburg rate poorly and are characterized by high levels of traffic stress (LTS). Figure 7-2 shows locations with LTS 3 and 4, which indicate areas that only experienced riders would be typically willing to ride. Such locations are not attractive to inexperienced riders, including those riding with children. Improving the bicycle facilities to have little to moderate levels of traffic stress can increase bicycle connectivity and provide employees with comfortable multi-modal commuter options. Rural character segments[38] that currently have high levels of traffic stress and anticipate at least a 50 percent increase in motor vehicle volume growth (relative to existing traffic volumes) include:

- Ellingson Road
- Lochner Road
- Grand Prairie Road (east of Lexington Street)
- Knox Butte Road (east of Scravel Hill Road)
- Scravel Hill Road
- Scenic Drive
- Oak Grove Drive
- Palestine Avenue
- OR 164 (west of the Santiam River)

Urban segments that currently have high levels of traffic stress and anticipate at least a 50 percent increase in motor vehicle volume growth (relative to existing volumes) include:

- 1st Avenue
- 2nd Avenue
- Grand Prairie Road (west of Lexington Street)
- Columbus Street
- Seven Mile Lane
- Goldfish Farm Road
- Dogwood Avenue
- Knox Butte Road (west of Scravel Hill Road)
- Quarry Road
- Valley View Drive
- Old Salem Road
- OR 164 (east of the Santiam River)
- Main Street/Jefferson-Scio Drive
- North Avenue/Marion Road
- Portions of US 20
- Portions of OR 99E

[37] Additional gaps or deficiencies on the local system were not identified.

[38] Low volume, higher speed roadways near the edges of the MPO boundary.

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Bicycle Safety

The two locations—the US 20 couplet (Ellsworth Street and Lyons Street) through downtown Albany and the area surrounding Heritage Plaza Shopping Center—were identified as high vehicle-bicycle crash areas.

Figure 7-2: High Stress Bicycle Locations (LTS 3 or 4) on Major Roadways

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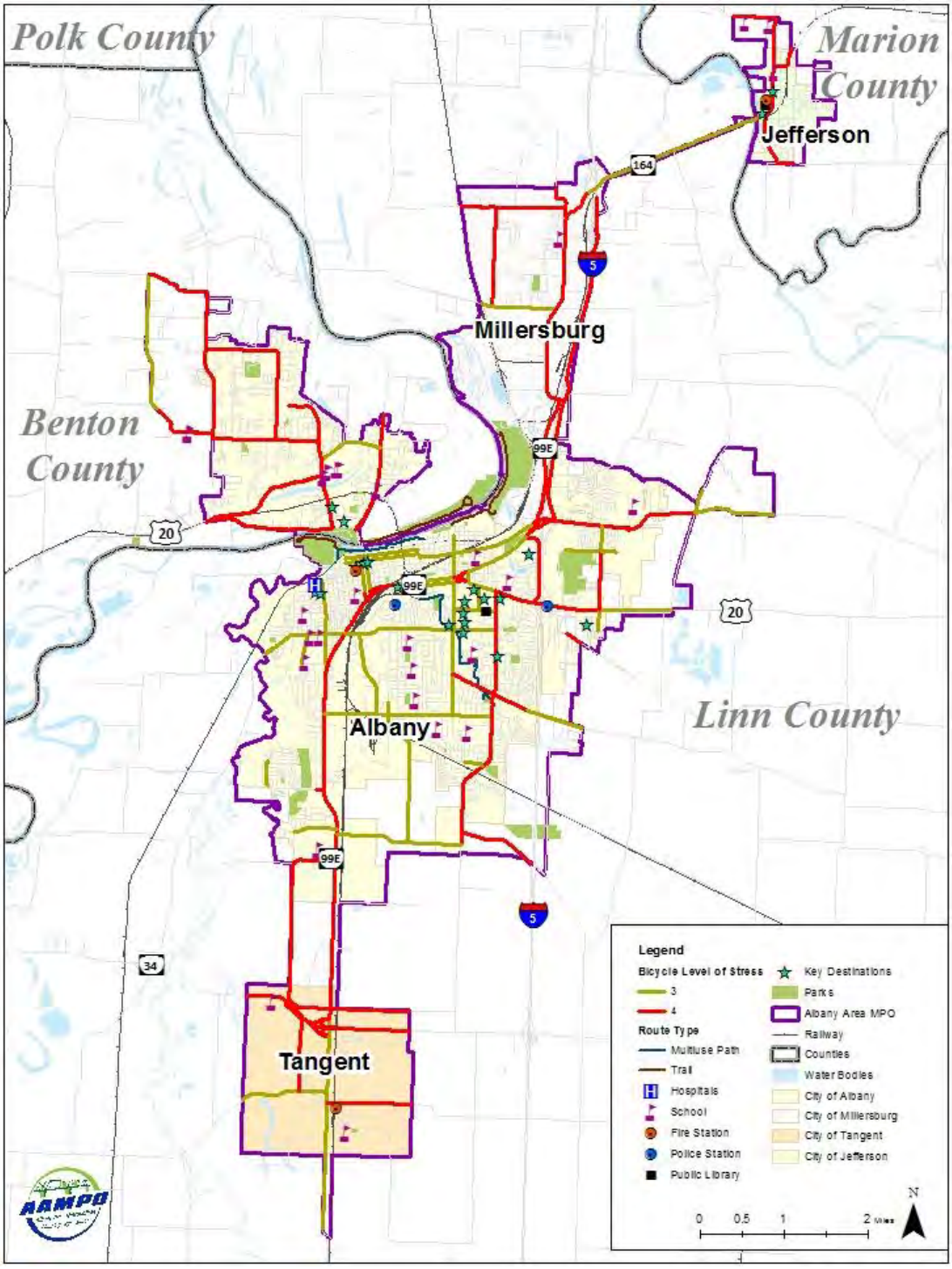

Bicycle Needs from Prior Plans

Additional needs with regional significance that have been identified in past planning efforts include:

- Support facilities, such as secure parking and worksite changing facilities, are also needed to make bicycling a practical alternative. (Albany TSP)
- The great majority of crashes occurred on dedicated bikeways, apart from the US 20 Lyon/Ellsworth couplet, which does not have bicycle facilities but had four bicycle crashes during the study period. Future investment in the bicycle network should focus on improving the performance and safety of existing bicycle routes, in addition to creating new routes such as off-street paths and/or bicycle boulevards. (Albany TSP)
- Inventory and identify bike lane gaps (Linn County Parks and Recreation Plan, Marion County Parks Master Plan)

ITS System

The ITS infrastructure within the AAMPO area is limited. The *Central Willamette Valley ITS Plan* and the *I-5 Optimization Study* identified many opportunities to update and enhance the management and operation of the transportation throughout the AAMPO region. The needs are captured under the following categories.

Traffic Operations and Management

- Upgrade ODOT traffic signal controllers to the current ODOT standard.
- Connect ODOT traffic signal controllers to central traffic control system to allow remote access to traffic signals, and provide central control and remote access to city of Albany traffic signals.
- Regularly maintain coordinated signal timing plans and consider advanced traffic signal timing where appropriate.
- Provide video surveillance on key regional corridors.
- Collect real-time road condition information on regional corridors to support day-to-day operations, particularly during peak hours.

Public Transportation Management

- Track all public transportation vehicles to support dispatch, real-time transit arrival information, and transit route planning.
- Add computer-aided dispatch (CAD) capabilities for public transportation services and include mobile data terminals (MDTs) in public transportation vehicles.
- Collect real-time travel conditions information to support public transportation dispatch.
- Explore options to share technology (e.g. automated vehicle location, computer-aided dispatch to reduce capital, maintenance, and operations costs for public transportation agencies within the region.

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- Use a regional fare collection system to support easy transfer between the various regional public transportation providers.

Traveler Information

- Provide real-time information about the entire transportation system.
- Disseminate real-time information about major events that impact travel and parking (e.g.
- incidents, OSU football games).
- Provide wayside information dissemination (e.g. dynamic message signs, highway advisory radio) on key regional routes.

Data Management and Performance Measurement

- Improve ease of data sharing between agencies.
- Measure travel times to support traditional planning efforts and system operations.
- Collect and archive regional traffic count data.

Incident and Emergency Management

- Establish clearer protocols between transportation and emergency response agencies for event management.
- Use more video surveillance for incident detection and verification.
- Consider roadway restrictions (e.g. weight limits) prior to selecting diversion routes in response to an event.
- Manage diverted traffic on OR 99E when there is a major event on I-5.
- Provide traffic video surveillance and real-time traffic flow conditions to 911 centers.
- Provide accurate construction and maintenance schedule information to 911 centers.

TDM System

No additional Transportation Demand Management (TDM) needs have been identified. See the *System Management* section of *Chapter 4: Existing Transportation System* for discussion of existing TDM programs.

Rail Freight System

At grade rail crossings create both travel time and connectivity issues within the AAMPO area. Albany and Jefferson have identified railroad blockage issues creating delay for other modes. The City of Tangent is concerned with connectivity issues regarding emergency vehicles.

The following rail freight needs have been identified in prior plans:

Albany Area MPO Regional Transportation Plan

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- The Albany Rail Yard, situated just north of Queen Avenue on the east side of OR 99E, is a crossing point for all of the UPRR rail lines in Albany and is one of the most capacity-constrained segments on the UPRR, resulting in long delays while passing trains await permissions to cross. (Albany TSP)
- To help minimize the blockage at the Queen Avenue crossing, the Albany Rail Corridor Improvement Project[39] will add a short section of track in Albany to connect the Toledo Branch directly to the Millersburg Yard. The nearly $8.7 million dollar project will also rehabilitate the Millersburg Yard. The additional track will allow switching movements and training building to move from the Albany Yard to the Millersburg Yard.
- Retain at-grade rail crossings, if possible. Having multiple crossings helps provide secondary routes for emergency vehicles serving the area and creates more opportunities for street connectivity, especially benefiting bicyclists and pedestrians. (Tangent TSP)
- Improvements to alleviate railroad blockages, which may include grade separated crossings (Jefferson TSP)

Intermodal Freight Facility

Recent changes to shipping operations at the Port of Portland have created the need for an intermodal freight facility in the Willamette Valley. Due to these changes, Oregon businesses more frequently truck their goods north to the Port of Tacoma or Port of Seattle or south to the Port of Oakland or Port of San Francisco to access overseas shipping ports. These extra trucking miles have both economic and transportation impacts, including contributions to traffic congestion, increased vehicle-miles-traveled (VMT), increased greenhouse gas emissions, and higher shipping costs.

Rail can help alleviate these impacts. An intermodal freight facility located in the Willamette Valley would provide rail as an alternative for the region and help reduce trucking miles. The region would benefit from the ability to bring goods by rail and then transfer to truck for local delivery. Intermodal transportation facilities benefit the overall transportation system by reducing heavy truck VMT while spreading the shipment of freight over multiple transportation modes such as rail and sea.

Additional benefits include:

- **Lower costs.** Shippers can take advantage of lower rates, more predictable pricing, and the flexibility of loading and unloading goods in a dropped trailer environment, which reduces handling costs.
- **Environmentally friendly.** Reduced carbon emissions through reduce heavy truck VMT as well as truck related congestion through the entire shipping corridor.

[39] ConnectOregon II Projects, ODOT & Oregon Transportation Commission, June 2008.

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- **Reliability, capacity, and safety advantages.** Multi-modal systems reduce reliance on single modes that may be limited or impacted due to facility access, long hauling distances and heavy truck volumes on congested highways.

Millersburg is a strong candidate for an intermodal freight facility due to its access to two rail lines, access to major highways, and existing infrastructure. The two rail lines, Union Pacific (UP) and Portland and Western Railroad (PNWR), that travel through Millersburg provide higher connectivity and the ability to easily switch between the rail lines, which could result in both cost and time savings. Millersburg is also adjacent to I-5 and is within 20 miles of four other major highways: US 20, OR 99, OR 34 and OR 22.

The potential intermodal freight facility site in Millersburg, the former paper mill site adjacent to Old Salem Road, can accommodate the facility at opening. This site of approximately 160 acres is located in an existing industrial zone with municipal sewer and water available on site. Transportation infrastructure for truck-freight already existing on surrounding roadways and upgrades are already planned for future capacity and efficiency both on the local system and via improved access to I-5. In addition, the proposed site is located near industrial-zoned land owned by the City of Millersburg that is available for development of complimentary industrial uses, creating the potential for a synergistic effect. The 12-acre truck stop facility east of Old Salem Road and south of the South Jefferson I-5 interchange was recently approved. All local governments in the AAMPO have expressed support for the development of an intermodal facility on this site.

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Chapter 8: Recommended Improvements

From the transportation system improvements identified as needed to address existing and future needs within the AAMPO area up to the year 2040, a set of projects was prioritized to provide a reasonably likely financially constrained project list that can be used to develop the AAMPO RTP Framework. Ultimately, the project list will drive regional project priorities and will be used by AAMPO to develop future TIP lists. The following sections include a description of the funding assumptions, a summary of the process used to develop and prioritize the project list, and the final transportation solution package options.

More detail can be found in Technical Memorandum #10: Transportation Solution Package Identification, in Technical Memorandum #13: Evaluation of Solution, and in the Albany Area Metropolitan Planning Organization Transit Development Plan.

Funding Assumptions

Regional transportation funding was reviewed to estimate potential transportation funds that would be available for transportation capital projects through 2040. The review considered both historical and projected revenue sources and expenses (including operations and maintenance needs) at the city, county, regional, and state levels. The analysis indicated that approximately $173 million (2016 dollars) is projected to be available for capital improvements through 2040. However, this amount could be reduced given additional local needs improvements on City local street networks. The City of Albany provided guidance on the amount of public and private funds that are anticipated to be available for regional capital transportation projects[40].

Recent developments, not included in the initial funding assumptions, have changed the outlook for state funding over the planning horizon. House Bill 2017 (HB 2017) introduced new, or increased existing, taxes and fees, including the state gas tax and vehicle registration fees. HB 2017 directs significant new revenue to earmarked projects, but should also result in additional funding to some local jurisdictions. In addition, HB 2017 established a new source of public transportation funding to expand transit services in Oregon, which has been incorporated into the Transit Development Plan referenced in later in this Chapter. The following estimates can be considered as additional funding on top of the initial funding assumptions:

- New Transit Funds (each year)
    - Benton County, $2.4M
    - Linn County, $2.4M
- Additional Potential Local Infrastructure and Maintenance Funds (each year)
    - Albany, $1.3M

[40] *Albany Capital Project Revenues*, Letter from Chris Bailey and Jeff Blaine, City of Albany, January 19, 2016.

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- Millersburg, $44K
- Tangent, $30K
- Jefferson, $74K
- Linn County, $3.5M
- Benton County, $2M
- Marion County, $7.6M

HB 2017 has also dedicated funds for two projects within the AAMPO area. One project involves safety upgrades along US 20 between Albany and Corvallis (which may include some improvements within the AAMPO boundary). The other project involves construction of a Mid-Willamette Valley Intermodal Facility. While a final location has not been determined, Millersburg, Oregon has been identified as a potential location for the facility. These projects are included on the Aspirational Project List.

In addition, ODOT has modified the process for selecting projects that receive STIP funding. The new process follows the All Roads Transportation Safety Program (ARTS); local agencies can receive funding for projects off the state system. Preferred projects are expected to be those that enhance system connectivity and improve multi-modal travel options. With the updated TSP, the City will be well positioned to apply for STIP funding.

Project Development

The analysis and findings from a comparative analysis of two aspirational future scenarios for the AAMPO was used to help guide the Technical Analysis Committee (TAC) in shaping investment strategies for AAMPO. The comparative analysis was performed using a tool developed by the Oregon Department of Transportation (ODOT) called Mosaic, which is used for value and cost informed planning.

Financially Constrained Project List

The Financially Constrained Plan is a group of approximately 119 projects developed to meet the growing transportation needs of the region through the year 2040. As anticipated funding becomes available, these projects will be implemented. This plan includes the projects that will provide the most benefit to the region and has been approved by the MPO Board. The total package is estimated to cost $170 million. The Financially Constrained project list is shown in Figure 8-1and outlined in Table 8-1.

Aspirational Project List

Two additional groups of projects were considered as optional investment strategies if more funding becomes available. Each of these scenarios was analyzed to determine the benefits it could provide.

Capacity Improvement Project List. This group of 13 projects focuses on improving auto capacity, primarily for OR 99E and US 20 and includes a new bridge crossing of the Willamette River between Millersburg and North Albany. This scenario did not advance because analysis showed insufficient benefit in travel times as compared to its cost..

Congestion Management Project List. This group of 48 projects focuses on managing congestion and providing connections on existing corridors to better serve travelers. The anticipated cost of this group of projects is $106 million (in addition to the $170 million in the financially constrained project list). This scenario provides measurable benefit to the community, including:

- Safety improvements could provide the highest return on investment for the AAMPO area, specially in areas with high injury crash rates.
- Increases in transit access and service could more than double transit ridership in the region.
- Active transportation projects provide significant quality of life benefits for lower costs than auto-oriented improvements.

The Congestion Management Scenario formed the basis of the Aspirational Project List, shown in Figure 8-2 and outlined in Table 8-2.

Transit Development Plan

The Transit Development Plan (TDP) is a guide for regional investment in public transportation. The Transit Development Plan focuses on public transportation services operated by the City of Albany: Albany Transit System, Albany Call-A-Ride, and the Linn-Benton Loop. The TDP recommends incremental improvements to make the local bus services faster; easier for riders and prospective riders to understand; and more convenient. Key recommendations from the TDP are shown in Figure 8-3, Figure 8-4, and Figure 8-5. See *Albany Area Metropolitan Planning Organization Transit Development Plan* for additional details.

Financially Constrained Project List

Based on transportation funding assumptions, regional needs, and the evaluation process, the Financially Constrained Project List was developed to address the region's transportation need for the next 20 years

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Figure 8-1: Financially Constrained Project List

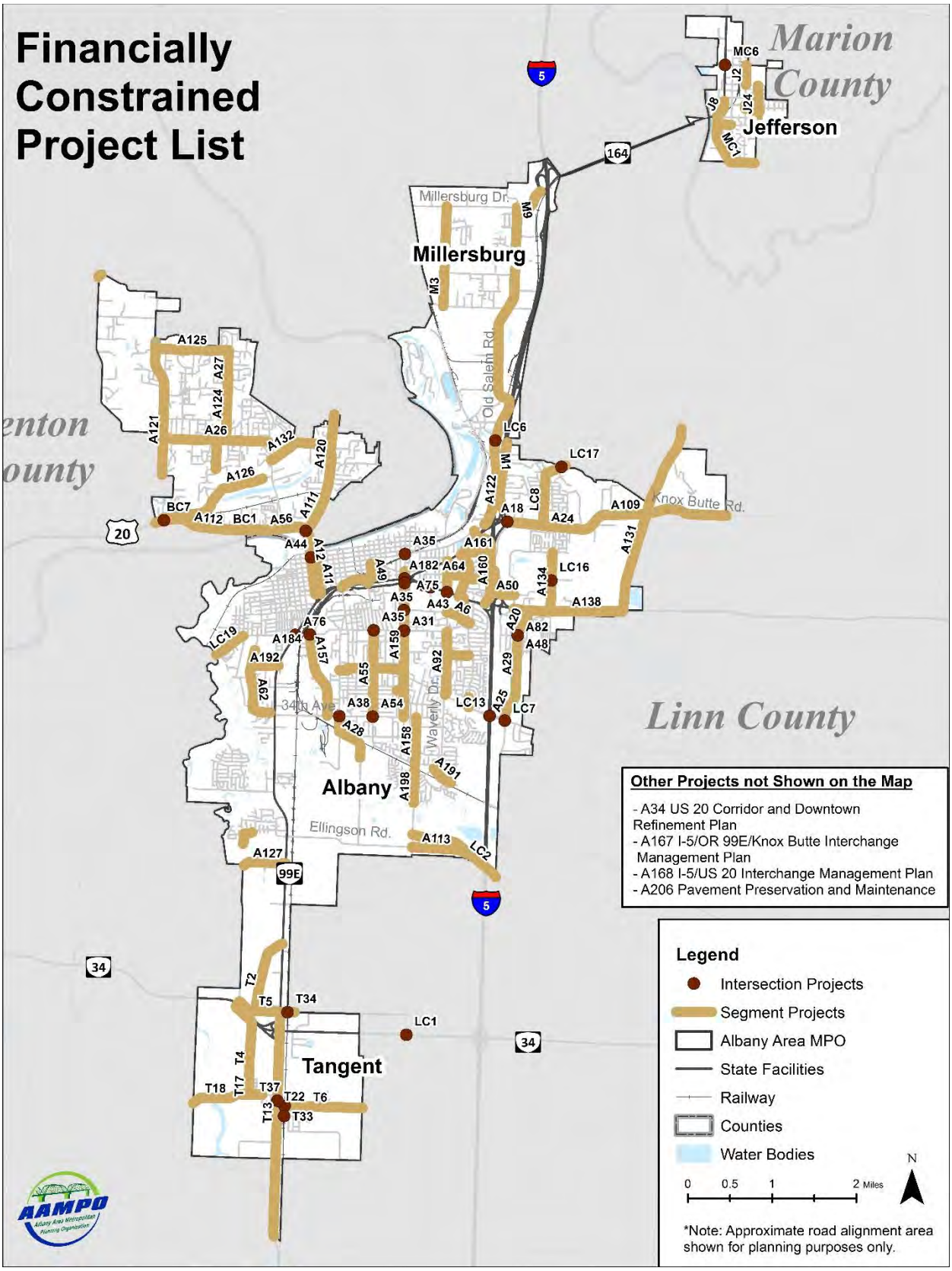

Table 8-1: Financially Constrained Project List

AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
BC1	Corvallis to Albany Trail	Hwy 20	Scenic Dr to Springhill Rd	Construct off highway multiuse path	1.72	Benton County	$ 2,434,000	New Multi-Use Path
BC5	Palestine Ave/Oak Grove Dr Re-alignment	Palestine Ave/Oak Grove Dr	Palestine Ave/Oak Grove Dr	Intersection re-alignment	-	Benton County	$ 397,000	Intersection Safety Improvement
BC7	US 20/Scenic Dr Intersection Improvements	US 20/Scenic Dr	US 20/Scenic Dr	Add turn lanes	-	Benton County	$ 1,100,000	Intersection Capacity Improvement
A6	14th Ave Sharrows	14th Ave	Waverly Dr to Center St	Install painted "Sharrows" in the bike lane gaps on 14th Avenue from Waverly Drive to Center Street. Painting a shared right-of-way (sharrow) symbol on the pavement does not require parking removal.	0.31	City of Albany	$ 2,000	Bike Improvement
A7	Waverly Dr Sharrows	Waverly Dr	99E to US 20	Install bike "Sharrows" on Waverly Drive between Oregon 99E and US 20. Painting a shared right-of-way (sharrow) symbol on the pavement does not require parking removal.	0.37	City of Albany	$ 5,000	Bike Improvement
A8	24th Ave Sharrows	24th Ave	Geary St to Hill St	Install bike "Sharrows" on both sides of 24th Avenue between Geary Street and Hill Street. Painting a shared right-of-way (sharrow) symbol on the pavement does not require parking removal. This is a separate project from B18 because this section of 24th Avenue is a collector rather than an local street.	0.13	City of Albany	$ 5,000	Bike Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A11	Lyon St Sharrows	Lyon St	9th Ave to Willamette River	Install painted "Sharrows" in the bike lane gaps on Lyon Street from 9th Avenue to the Willamette River (no sharrows needed on bridge due to shoulder). Painting a shared right-of-way (sharrow) symbol on the pavement does not require parking removal. This project is contingent upon ODOT approval, inclusion of sharrows in the MUTCD, and the associated guidance in the MUTCD.	0.78	City of Albany	$ 2,000	Bike Improvement
A12	Ellsworth St Sharrows	Ellsworth St	9th Ave to Springhill Dr	Install painted "Sharrows" in the bike lane gaps on Ellsworth Street from 9th Avenue to Springhill Drive, including Ellsworth Street bridge. Painting a shared right-of-way (sharrow) symbol on the pavement does not require parking removal. This project is contingent upon ODOT approval, inclusion of sharrows in the MUTCD, and the associated guidance in the MUTCD.	0.76	City of Albany	$ 4,000	Bike Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A17	US 20/Springhill Dr Intersection Capacity Upgrade	US 20/Springhill Dr	US 20/Springhill Dr	Convert southbound right-turn to a shared left-right lane, creating dual-southbound lefts on Springhill Road. Relocate westbound stop bar on US 20 of inside lane 10-20 feet east of current location. Lengthen cycle length to 120 seconds and develop coordination between North Albany Road and Springhill Road along US 20. Design of the intersection should allow for right-turns on red for southbound vehicles if feasible.	-	City of Albany	$ 14,000	Intersection Capacity Improvement
A18	Knox Butte Rd/Century Dr Interim Signal	Knox Butte Rd/Century Dr	Knox Butte Rd/Century Dr	If warranted, install an interim traffic signal. This signal may be removed when the intersection is reconstructed by ODOT.	-	City of Albany	$ 345,000	Intersection Capacity Improvement
A20	Timber St Extension	Timber St	US 20 to Three Lakes Rd	Right- of-way acquisition for extension Timber Street south of US 20 to connect to the Three Lakes Rd/Spicer Dr intersection. The design and alignment review will be completed with the I-5 Corridor Study (project S10). Alternate routes for the Industrial Way ingress/egress will be considered.	0.33	City of Albany	$ 966,000	New Roadway
A23	Knox Butte Rd Widening ROW	Knox Butte Rd	I-5 to Clover Ridge Rd	ROW Acquisition for I-5 to Clover Ridge Rd portion of Knox Butte Rd widening project.	0.43	City of Albany	$ 1,478,000	Roadway Capacity Improvement
A24	Knox Butte Rd Widening ROW	Knox Butte Rd	Clover Ridge Rd to Goldfish Farm Rd	ROW Acquisition for Clover Ridge Rd to Goldfish Farm Rd portion of Knox Butte Rd widening project.	0.44	City of Albany	$ 31,000	Roadway Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A25	Three Lakes Rd Realignment ROW	Three Lakes Rd	Kelly Supply Company to Grand Prairie Rd	ROW required to realign the short roadway segment that includes the 90-degree curves to a typical three-lane roadway to improve the horizontal alignment.	0.33	City of Albany	$ 750,000	Roadway Capacity Improvement
A26	Gibson Hill Rd Improvements	Gibson Hill Rd	Scenic Dr to North Albany Rd	Urbanization: Add 6-foot wide asphalt sidewalks set back from the roadway on both side, curb, and gutter, and bicycle lanes from Scenic Drive to the roundabout at North Albany Road. Consider rural design standard with setback sidewalks (includes BC2, A32)	1.25	City of Albany	$ 5,350,000	Modernization
A27	Crocker Ln Improvements LID	Crocker Ln	Meadowwood Dr to Valley View Dr	LID for adding sidewalk, curb, and gutter from Meadowwood Drive to Valley View Drive.	1.1	City of Albany	$ 1,721,000	Modernization
A28	Lochner Rd Improvements - North	Lochner Rd	Youth Authority to 34th Ave	Add sidewalk, curb, gutter, and bike lanes to Lochner Road and Marion Road.	0.63	City of Albany	$ 3,722,000	Modernization
A29	Three Lakes Rd Improvements ROW	Three Lakes Rd	Spicer Road to Grand Prairie Rd	ROW acquisition for adding sidewalk, curb, gutter, and bike lanes from Spicer Road to Grand Prairie Road, excluding Three Lakes Road realignment at 90-degree curves.	0.68	City of Albany	$ 287,000	Modernization
A31	Queen/Geary Periwinkle Path	Periwinkle Trail	Queen Ave/Geary St	Construct multi-use path improvement by widening the sidewalk to connect the Periwinkle Trail through the Queen Avenue/Geary Street intersection	-	City of Albany	$ 46,000	New Multi-Use Path

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A34	Hwy 20 Corridor and Downtown Refinement Plan	Hwy 20	Hwy 20 Corridor and Downtown Albany	Conduct a Highway 20 Corridor and Downtown Refinement Plan that extends to I-5 to look at regional bridge capacity needs, potential bridge locations, other corridor and intersection needs, and continue through permitting process.	-	City of Albany	$ 250,000	Study
A35	Safety Audit	Geary St/Salem Ave, Geary St/14th Ave, Queen Ave/Hill St	Geary St/Salem Ave, Geary St/14th Ave, Queen Ave/Hill St	Intersection Safety Audit/Study at Geary Street/Salem Avenue, Geary Street/14th Avenue, and Queen Avenue/Hill Street. Consider countermeasures for rear-end and turning-type crashes.	-	City of Albany	$ 30,000	Study
A38	34th Ave/Marion St Signal	34th Ave/Marion St	34th Ave/Marion St	Install a new traffic signal.	-	City of Albany	$ 345,000	Intersection Capacity Improvement
A43	US 20/Clay St Intersection Capacity Upgrade	US 20/Clay St	US 20/Clay St	Restripe intersection lane markings and convert left-turn phasing on Clay Street to protected-permissive with the flashing yellow arrow signal head. Install exclusive eastbound right-turn lane on US 20.	-	City of Albany	$ 185,000	Intersection Capacity Improvement
A44	US 20 (Ellsworth St)/1st Ave Signal Mod	US 20 (Ellsworth St)/1st Ave	US 20 (Ellsworth St)/1st Ave	Implement actuated-coordinated signal control. Shorten pedestrian crossing distance across Ellsworth Street. Extend cycle length to 70 seconds, and develop timing plans with offsets that facilitate southbound and westbound progression.	-	City of Albany	$ 18,000	Intersection Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A48	Timber St Extension/18th Ave/Spicer Dr Roundabout	Timber St Extension/18th Ave/Spicer Dr	Timber St Extension/18th Ave/Spicer Dr	ROW acquisition for a roundabout as the traffic control for the new intersection of Three Lakes Road/18th Street/Timber Street/Spicer Road. The north extension of Spicer Road will not connect to the intersection. Rather, it will become a local street with a cul-de-sac located northwest of the roundabout.	-	City of Albany	$ 650,000	Intersection Capacity Improvement
A49	Main St, 7th Ave, Hill St improvements	Main St, 7th Ave, Hill St	Santiam Rd to 7th Ave, Main St to Hill St, 7th Ave to Pacific Blvd	Reconstruct Main Street with new sidewalk, curb, and gutter from Santiam Road to 7th Avenue. Repave 7th Avenue between Main Street and Hill Street, then reconstruct Hill Street with new sidewalk, curb, and gutter from 7th Avenue to Pacific Boulevard.	0.28	City of Albany	$ 1,292,000	Rehabilitation
A50	West Timber-Linn Trail	New Trail	Timber-Linn Park to South Shore Dr	Construct multi-use path to connect Timber-Linn Park to South Shore Drive (assumes that I-5 undercrossing will not require widening and/or additional excavation of the existing creek under-crossing, or that any such widening will occur as part of I-5 reconstruction).	0.51	City of Albany	$ 161,000	New Multi-Use Path
A54	34th Ave/Hill St Signal	34th Ave/Hill St	34th Ave/Hill St	Install 100-foot northbound and southbound left-turn lanes, and a new traffic signal.	-	City of Albany	$ 350,000	Intersection Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A55	Hill St Reconstruction	Hill St	Queen Ave to 34th Ave	The project will reconstruct 1.03 miles of Hill Street. The existing pavement is heavily deteriorated. In addition to new pavement the project will add on-street bike lanes to the street and retain on-street parking. Curb ramps at intersections will be upgraded to meet current ADA standards. The project is on Hill Street and will extend 1.03 miles from Queen Avenue south to 34th Avenue.	1.03	City of Albany	$ 6,100,000	Rehabilitation
A56	US 20 Bike Lanes	US 20	Willamette River west to UGB	Convert shoulders to bike lanes on US 20 in North Albany from Willamette River (including the Lyon Street bridge which has an existing shoulder) to UGB.	1.83	City of Albany	$ 31,000	Bike Improvement
A62	Liberty/Lakewood Bike Boulevard	Liberty St and Lakewood St	24th Ave to 99E	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on Liberty/Lakewood from 24th Avenue to Oregon 99E.	0.73	City of Albany	$ 76,000	Bike Improvement
A63	Bain St Bike Boulevard	Bain St	99E to US 20	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on Bain Street from Oregon 99E to US 20.	0.48	City of Albany	$ 49,000	Bike Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A64	South Shore Dr Bike Boulevard	South Shore Dr	Bain St to Airport Rd	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on Southshore Drive from Bain Street to Airport Road.	0.55	City of Albany	$ 33,000	Bike Improvement
A65	Shortridge St Bike Boulevard	Shortridge St	US 20 to 14th Ave	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on Shortridge Street from US 20 to 14th Avenue.	0.26	City of Albany	$ 27,000	Bike Improvement
A66	24th Ave Bike Boulevard	24th Ave	Marion St to Hill St	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on 24th Avenue from Hill Street to Marion Street.	0.43	City of Albany	$ 44,000	Bike Improvement
A75	US 20/Waverly Dr Intersection Capacity Upgrade	US 20/Waverly Dr	US 20/Waverly Dr	Install second westbound left-turn lane and eastbound right-turn lane on US 20. Install northbound right-turn overlap, add another southbound through lane on Waverly Drive. Obtain right-of-way for an additional northbound through lane at time impacted parcels redevelop and construct when warranted (cost for this improvement identified separately under other costs).	-	City of Albany	$ 1,093,000	Intersection Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A76	OR 99E/Queen Ave Intersection Capacity Upgrade	OR 99E/Queen Ave	OR 99E/Queen Ave	Install northbound and southbound right-turn lanes on OR 99E. On Queen Avenue, add second westbound and eastbound left-turn lanes, and extend eastbound right-turn lane to 200-feet. Review pavement and drainage quality to ensure sufficiency.	-	City of Albany	$ 894,000	Intersection Capacity Improvement
A82	Timber St Extension/18th Ave/Spicer Dr Roundabout	Timber St Extension/18th Ave/Spicer Dr	Timber St Extension/18th Ave/Spicer Dr	Develop a roundabout as the traffic control for the new intersection of Three Lakes Road/18th Street/Timber Street/Spicer Road. The north extension of Spicer Road will not connect to the intersection. Rather, it will become a local street with a cul-de-sac located northwest of the roundabout.	-	City of Albany	$ 863,000	Intersection Capacity Improvement
A92	Waverly Dr Capacity Improvements	Waverly Dr	Queen Ave to Grand Prairie Rd	Widen Waverly Drive to a 4-lane cross-section between Queen Avenue and Grand Prairie Road using two southbound lanes, one northbound lane and a two-way left-turn lane. This project will maintain sidewalks and bicycle lanes, but remove on-street parking on Waverly in this segment due to ROW constraints.	0.75	City of Albany	$ 1,394,000	Intersection Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A106	Knox Butte Rd Widening	Knox Butte Rd	I-5 to Clover Ridge Rd	Widens Knox Butte Road to five lanes eastbound from I-5 to Clover Ridge Road. Includes bike lanes, sidewalks, curb, and gutter on both sides of the roadway. Right-of-way acquisition will occur in the short-term (and be 100% SDC eligible) with construction occurring in the long-term. Alternative access to the RV Park located on Expo Parkway, potentially to access Knox Butte Road, should be considered as traffic volumes on Expo Parkway increase. Final design should mitigate access and driveway impact to the houses that remain	0.43	City of Albany	$ 1,901,400	Roadway Capacity Improvement
A107	Knox Butte Rd Widening	Knox Butte Rd	Clover Ridge Rd to Goldfish Farm Rd	Widens Knox Butte Road to four lanes from Clover Ridge Road to Goldfish Farm Road. Includes bike lanes, sidewalks, curb, and gutter on both sides of the roadway. Right-of-way acquisition will occur in the short-term (and be 100% SDC eligible) with construction occurring in the long-term.	0.12	City of Albany	$ 825,000	Roadway Capacity Improvement
A108	Knox Butte Rd Widening	Knox Butte Rd	Goldfish Farm Rd to new North/South Collector	Widens Knox Butte Road to three lanes from Goldfish Farm Road to the new North/South Collector including the Burkhart Creek bridge. Includes bike lanes, sidewalks, curb, and gutter on both sides of the roadway.	0.32	City of Albany	$ 1,256,000	Roadway Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A109	Knox Butte Rd Widening	Knox Butte Rd	New North/South Collector east to UGB	Urban upgrade of Knox Butte Road from the new North/South Collector to the urban growth boundary. Includes bike lanes, sidewalks, curb, and gutter on both sides of the roadway.	1.82	City of Albany	$ 7,688,000	Modernization
A111	Springhill Rd Widening	Springhill Rd	US 20 to railroad crossing	Widens Springhill Road to two lanes northbound and southbound from US 20 to north of Hickory Road then transition to three lanes across the rail crossing. Springhill Road is under Benton County jurisdiction and this project is not in their 2001 TSP.	0.5	City of Albany	$ 3,406,000	Roadway Capacity Improvement
A112	US 20 Widening	US 20	North Albany Rd west to the UGB	Widens US 20 to two lanes eastbound and westbound and add sidewalk, curb, and gutter from North Albany Road west to the urban growth boundary.	1.55	City of Albany	$ 8,351,000	Roadway Capacity Improvement
A113	Ellingson Rd Extension	Ellingson Rd	Columbus Ave to I-5 overcrossing	Extends Ellingson Road from Columbus Avenue to Interstate 5 overcrossing at Seven Mile Lane. Realign Seven Mile Lane on the west side of I-5 to align with current Ellingson Road, forming a four-leg intersection at Columbus Street. This section of Ellingson Road should be evaluated for the need to preserve right-of-way for a future five-lane section at the next TSP Update. Project cost assumes ROW will be dedicated.	0.92	City of Albany	$ 4,430,000	New Roadway

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A118	Albany Ave Widening	Albany Ave	Old Salem Rd to Pacific Hwy	Widen Albany Avenue to four lanes. Includes widening bridge structure. Project cost assumes ROW will be dedicated.	0.2	City of Albany	$ 1,177,000	Roadway Capacity Improvement
A120	Springhill Dr Improvements	Springhill Dr	RR crossing north to UGB	Add sidewalk, curb, and gutter from the railroad to urban growth boundary. US 20 to railroad is Project A111 (Albany TSP L26). Coordinate project with Benton County.	0.96	City of Albany	$ 4,158,000	Modernization
A121	Scenic Dr Improvements	Scenic Dr	Scenic Woods Pl north to UGB	Add sidewalk, bike lane, curb, and gutter from east of Scenic Woods Place to northern urban growth boundary. Coordinate project with Benton County. Project cost assumes ROW will be dedicated.	1.6	City of Albany	$ 6,842,000	Modernization
A122	Century Dr Improvements	Century Dr	Dunlap Ave north to UGB	Add sidewalk, bike lane, curb, and gutter from Dunlap Avenue to northern urban growth boundary. Project cost assumes ROW will be dedicated.	0.77	City of Albany	$ 3,199,000	Modernization
A123	Skyline Dr Improvements	Skyline Dr	Gibson Hill Rd to Mirada St	Add sidewalk, curb and gutter, and bicycle lanes or sharrows depending upon volumes and right-of- way constraints from Gibson Hill Road to Mirada Street.	0.34	City of Albany	$ 1,523,000	Modernization
A124	Crocker Ln Improvements	Crocker Ln	Gibson Hill Rd to Meadowwood Dr	Add sidewalk, curb, and gutter from Gibson Hill Road to Meadowwood Drive.	1.1	City of Albany	$ 2,808,000	Modernization
A125	Valley View Dr Improvements	Valley View Dr	Scenic Dr to Crocker Rd	Add sidewalk, curb and gutter, and bicycle lanes from Scenic Drive to Crocker Road.	0.87	City of Albany	$ 3,695,000	Modernization

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A126	West Thornton Lake Dr Improvements	West Thornton Lake Dr	North Albany Rd to Scenic Dr	Add sidewalk, bike lanes, curb, and gutter from North Albany Road to Scenic Drive.	1.33	City of Albany	$ 6,097,000	Modernization
A127	Allen Ln Improvements	Allen Ln	Hwy 99 to Looney Ln	Add sidewalk, curb, and gutter from Highway 99E to Looney Lane.	0.51	City of Albany	$ 2,689,000	Modernization
A131	Scravel Hill Rd Improvements	Scravel Hill Rd	US 20 north to UGB	Add sidewalk, curb, and gutter from US 20 (Santiam Hwy) to the urban growth boundary with a three-lane section from US 20 to north of Knox Butte Road and a two-lane section from north of Knox Butte Road to the UGB. Project cost assumes ROW for the three-lane section will be dedicated.	2.3	City of Albany	$ 9,699,000	Modernization
A132	Quarry Rd Improvements	Quarry Rd	North Albany Rd to Springhill Dr	Add sidewalk, curb, and gutter from North Albany Road to Springhill Drive.	0.78	City of Albany	$ 3,493,000	Modernization
A134	Goldfish Farm Rd Improvements	Goldfish Farm Rd	Dogwood Ave to US 20	Add sidewalk, curb, and gutter from Dogwood Avenue to US 20.	0.7	City of Albany	$ 4,444,000	Modernization
A138	US 20 Improvements	US 20	I-5 east to UGB	Add sidewalk, curb, gutter, and shoulder bike lanes to US 20 from Interstate 5 to the urban growth boundary	1.3	City of Albany	$ 2,068,000	Modernization
A140	US 20 Superelevation and Widening	US 20	US 20 bridge-head to North Albany Rd	Correct superelevation issues at intersection along US 20. Widen US 20 for a third westbound through lane between the north US 20 bridge-head and North Albany Road.	0.32	City of Albany	$ 3,122,000	Roadway Capacity Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A148	Bain Street/Waverly Lake Trail	New Trail Connection	Bain St to OR99 path	Construct a bike/ped bridge over Cox Creek to connect Bain Street to the existing Oregon 99E multi-use path under-crossing.	0.05	City of Albany	$ 153,000	New Multi-Use Path
A154	Springhill Dr Sidewalks	Springhill Dr	Quarry Dr to railroad line	Construct sidewalks on both sides of Springhill Drive between Quarry Drive and the railroad line.	0.56	City of Albany	$ 542,000	Sidewalk Infill
A156	99E: Burkhart to Waverly Ped Crossing	99E	Between Burkart St and Waverly Dr	Construct pedestrian crossing improvement on Oregon 99E between Burkhart Street and Waverly Drive	-	City of Albany	$ 129,000	Pedestrian Crossing Improvement
A157	Ferry St Sidewalks	Ferry St	Queen Ave to 34th Ave	Eliminate the sidewalk gaps on Ferry Street between Queen Avenue and 34th Street	1	City of Albany	$ 725,000	Sidewalk Infill
A158	Columbus St Sidewalks	Columbus St	Del Rio Ave to 34th Ave	Eliminate the sidewalk gap on Columbus Street between Del Rio Avenue and 34th Avenue.	0.56	City of Albany	$ 277,000	Sidewalk Infill
A159	Geary St Sidewalks	Geary St	Santiam Rd to 34th Ave	Eliminate the sidewalk gaps on Geary Street between Santiam Road and 34th Avenue.	1.73	City of Albany	$ 791,000	Sidewalk Infill
A160	Airport Rd Sidewalks	Airport Rd	99E and I-5 SB off-ramp	Construct sidewalk on both sides of Airport Road between Oregon 99E and I-5 SB off-ramp. Construct sidewalk on the west side of Airport Road between I-5 SB off-ramp and US 20	0.92	City of Albany	$ 485,000	Sidewalk Infill
A161	Killdeer St Sidewalks	Killdeer St	Airport Rd to Pacific Blvd	Eliminate the sidewalk gaps on Killdeer Street.	0.32	City of Albany	$ 174,000	Sidewalk Infill

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A167	Interstate 5/OR 99E/Knox Butte	Knox Butte Rd/I-5 Ramps	Knox Butte Rd/I-5 Interchange Area	I-5 EIS includes Knox Butte interchange options and area management plan including 99E/Albany Avenue & Knox Butte/Century Drive. EIS will be followed by Design/ROW Acquisition, development of an Interchange Area Management Plan (IAMP), and Reconstruction. Total project cost is an estimate of the potential city contribution to the project	-	City of Albany	$ 100,000	Study
A168	Interstate 5 / US 20 (Santiam)	I-5/US 20	I-5/US 20	I-5 EIS includes Santiam interchange options and area management plan including Hwy20/Fescue/Spicer & Hwy 20/Airport Rd. EIS will be followed by Design/ROW Acquisition, development of an Interchange Area Management Plan (IAMP), and Reconstruction. Total project cost is an estimate of the potential city contribution to the project.	-	City of Albany	$ 100,000	Study
A182	Hwy 99/9th Ave/Geary St Safety Upgrades	Hwy 99/9th Ave/Geary St	Hwy 99/9th Ave/Geary St	Intersection safety upgrades	-	City of Albany	$ 300,000	Intersection Safety Improvement
A183	Hwy 99/Pacific Ave/Geary St Signal Safety Upgrade	Hwy 99/Pacific Ave/Geary St	Hwy 99/Pacific Ave/Geary St	Signal safety upgrade	-	City of Albany	$ 50,000	Intersection Safety Improvement
A187	Looney Ln Sidewalk	Looney Ln	Belmont Ave to Campbell Ct	Add sidewalk on east side	0.12	City of Albany	$ 75,000	Sidewalk Infill

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A188	Liberty St Sidewalk	Liberty St	Queen Ave to 24th Ave	Fill in sidewalk gaps.	0.19	City of Albany	$ 125,000	Sidewalk Infill
A189	Lexington St Sidewalk	Lexington St	Grand Prairie Rd to 30th Ave	Fill in sidewalk gaps.	0.12	City of Albany	$ 55,000	Sidewalk Infill
A191	Del Rio Ave Sidewalk	Del Rio Ave	Waverly Dr to Shortridge St	Fill in sidewalk gaps.	0.27	City of Albany	$ 150,000	Sidewalk Infill
A192	24th Ave West Sidewalk	24th Ave	Elm St	Fill in sidewalk gaps.	0.32	City of Albany	$ 135,000	Sidewalk Infill
A193	28th Ave Sidewalk	28th Ave	Pine St to Geary St	Fill in sidewalk gaps.	0.1	City of Albany	$ 40,000	Sidewalk Infill
A194	Belmont Ave Sidewalk	Belmont Ave	Looney Ln to Piedmont Pl	Fill in sidewalk gaps.	0.1	City of Albany	$ 50,000	Sidewalk Infill
A195	24th Ave Reconstruction	24th Ave	Jackson St to Geary St	The project will reconstruct 0.66 miles of 24th Avenue. The existing pavement is heavily deteriorated. In addition to new pavement the project will construct infill sidewalks to improve access to Sunrise Elementary School, upgrade curb ramps at intersections to meet current ADA standards, and construct bicycle boulevard improvement as identified in Albany's TSP. The project is on 24th Avenue and will extend 0.66 miles from Jackson Street east to Geary Street.	0.96	City of Albany	$ 1,100,000	Rehabilitation
A196	21st Ave Sidewalk	21st Ave	Waverly Dr to Center St	Fill in sidewalk gaps.	0.26	City of Albany	$ 130,000	Sidewalk Infill

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A197	7th Ave Sidewalk	7th Ave	Jackson St to Madison St	Fill in sidewalk gaps.	0.27	City of Albany	$ 300,000	Sidewalk Infill
A198	Columbus St Sidewalks North	Columbus St	Waverly to Becca Ct	Fill in sidewalk gaps.	0.38	City of Albany	$ 300,000	Sidewalk Infill
A206	Albany Area Pavement Preservation and Maintenance	All Albany Area MPO collectors and arterials	Various Locations within the Albany Area MPO Boundary	Pavement preservation and maintenance projects will be identified on an ongoing basis consistent with prioritization process adopted by AAMPO (ongoing).	-	Albany Area MPO	$ 25,109,100	Preservation
MC1	Main St widening	Main St	Hwy 99E east to UGB	Widen shoulders on both sides	0.89	City of Jefferson	$ 20,000	Bike Improvement
MC6	Hwy 99E/North Ave Signal	Hwy 99E/North Ave	Hwy 99E/North Ave	Add northbound and westbound right-turn lanes and traffic signal.	-	City of Jefferson	$ 275,000	Intersection Capacity Improvement
J2	5th St extension	5th St	North Ave to Jefferson-Scio Dr	Complete collector connection from North Ave to Jefferson-Scio Dr	0.05	City of Jefferson	$ 800,000	New Roadway
J8	OR 164 Sidewalk	OR 164	Santiam River Bridge to north of Union St	New sidewalks on east side	0.18	City of Jefferson	$ 36,000	Sidewalk Infill
J14	Greenwood St Sidewalk	Greenwood St	Main St to 3rd St	New sidewalks on both sides	0.16	City of Jefferson	$ 37,500	Sidewalk Infill
J21	High St Sidewalks	High St	Main St to 3rd St	Fill in sidewalk gaps.	0.13	City of Jefferson	$ 135,000	Sidewalk Infill
J24	7th St Sidewalks	7th St	Maple Ct to Greenwood Dr	Fill in sidewalk gaps.	0.45	City of Jefferson	$ 200,000	Sidewalk Infill
T2	McFarland Dr Bikeway	McFarland Dr	99E to Old Hwy 34	Add shoulder bikeways	0.91	City of Tangent	$ 33,000	Bike Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
T4	McFarland Dr Bike Lanes	McFarland Dr	Hwy 34 to Lake Creek Dr	Add shoulder bike lanes	1.15	City of Tangent	$ 174,000	Bike Improvement
T5	Old Hwy 34 On-Street Bike Lane	Old Hwy 34	Looney Ln to 99E	Add on-street bike lane	0.52	City of Tangent	$ 214,000	Bike Improvement
T6	Tangent Dr On-Street Bike Lane	Tangent Dr	99E to City Limits	Add on-street bike lane (City Portion)	1	City of Tangent	$ 149,000	Bike Improvement
T13	Hwy 99E Sidewalks	Hwy 99E	Old Hwy 34 to south City Limits	Install sidewalks	2.66	City of Tangent	$ 1,088,000	Sidewalk Infill
T17	McFarland Dr Sidewalks	McFarland Dr	UGB to N Lake Creek Rd	Install curb, gutter, and sidewalks on both sides	0.19	City of Tangent	$ 112,000	Modernization
T18	N Lake Creek Dr Sidewalks	N Lake Creek Dr	Meadow Lark Loop to west UGB	Install curb, gutter, and sidewalks on the south side	0.85	City of Tangent	$ 79,000	Modernization
T20	Old Hwy 34 Sidewalks	Old Hwy 34	Looney ln east to UGB	Install curb, gutter, and sidewalks on the south side. Install on north side between Looney Ln and approximately 500' east of railroad tracks	0.69	City of Tangent	$ 881,000	Modernization
T22	Tangent Dr Sidewalks	Tangent Dr	Hwy 99E east to UGB	Install curb, gutter, and sidewalks on both sides	1	City of Tangent	$ 515,000	Modernization
T32	Tangent Dr Rail Crossing Bike/Ped Improvements	Tangent Dr	Tangent Dr Rail Crossing	Improvements to Ped/Bike rail crossing facilities	-	City of Tangent	$ 500,000	Pedestrian Crossing Improvement
T33	Birdfoot Dr Rail Crossing Bike/Ped Improvements	Birdfoot Dr	Birdfoot Dr Rail Crossing	Improvements to Ped/Bike rail crossing facilities	-	City of Tangent	$ 500,000	Pedestrian Crossing Improvement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
T34	Old Hwy 34 Rail Crossing Bike/Ped Improvements	Old Hwy 34	Old Hwy 34 Rail Crossing	Improvements to Ped/Bike rail crossing facilities	-	City of Tangent	$ 500,000	Pedestrian Crossing Improvement
T37	OR 99E Pedestrian Crossing	OR 99E	North Lake Creek to Tangent Drive	Install pedestrian crossing	-	City of Tangent	$ 100,000	Pedestrian Crossing Improvement
LC1	Closure of Columbus St Hwy 34 Access	Columbus St	Columbus St/Hwy 34	Right-in Right-out only	-	Linn County	$ 50,000	Intersection Safety Improvement
LC2	Seven Mile Ln Improvements	Seven Mile Ln	Columbus St to I-5 Bridge	Improvement of Seven Mile Lane from Columbus to I-5 bridge	1.15	Linn County	$ 3,000,000	Modernization
LC6	Truax Creek Bridge Replacement	Old Salem Rd	Truax Creek	Project adds bike lanes and a sidewalk to a portion of the road in relation to the bridge replacement. (Only the AAMPO funded portion of larger bridge replacement project.)	-	Linn County	$ 281,000	Modernization
LC8	Clover Ridge Rd Improvements	Clover Ridge Rd	Knox Butte Rd to AAMPO Boundary	Clover Ridge Road going north from Knox Butte Road with ODOT's closure of Century Drive	0.86	Linn County	$ 2,000,000	Modernization
LC10	Tangent Dr Improvements	Tangent Dr	99E to City Limits	Add curb, gutter, sidewalk	1	Linn County	$ 1,200,000	Modernization
LC13	Grand Prairie Road Bridge Widening	Grand Prairie Rd	I-5 Bridge	Widen Bridge to provide safe passage for Bicycles and Pedestrians	-	Linn County	$ 2,000,000	Bridge Replacement
LC16	Goldfish Farm Rd Bridge Replacement	Goldfish Farm Rd	Cox Creek	Bridge Replacement and Widening	-	Linn County	$ 400,000	Bridge Replacement

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AAMPO RTP: Financially Constrained Project List								
ID	**Project Name**	**Roadway/ Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
LC17	Clover Ridge Road Bridge Replacement	Clover Ridge Road	Truax Creek	Widen and replace bridge to include sidewalks and bike lanes and stormwater treatment	-	Linn County	$ 1,500,000	Bridge Replacement
LC19	Queen Avenue ADA Transition Requirements	Queen Avenue	Queen Ave to Riverside Drive	Curb, gutter sidewalk and ADA improvements	0.39	Linn County/City of Albany	$ 1,500,000	Modernization
M1	Old Salem Road ADA Transition Improvements	Old Salem Road	City of Albany to Duraflake Entrance	Add Curb Gutter and Sidewalk and ADA improvements to meet current ADA Requirements	1.65	City of Millersburg	$ 2,000,000	Modernization
M2	Woods Rd Reconstruction Phase 1	Woods Rd	North of Alexander Lane	Two Phases: Reconstruct Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	1.18	City of Millersburg	$ 750,000	Modernization
M3	Woods Rd Reconstruction Phase 2	Woods Rd	South of Alexander Lane	Two Phases: Reconstruct Woods Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	1.18	City of Millersburg	$ 750,000	Modernization
M8	Old Salem Rd Sidewalk Improvements	Old Salem Rd	I-5 SB Off-Ramp to Nygren Road	Construct new sidewalks along west side of Old Salem Road, north of Nygren Road	2.6	City of Millersburg	$ 200,000	Sidewalk Infill
M9	Morning Star Road Reconstruction - Urban Conversion	Morningstar Rd	Old Salem Road to Millersburg Drive	Reconstruct Morningstar Rd to arterial cross-section (bike lanes, curb, gutter, sidewalk)	0.1	City of Millersburg	$ 650,000	Modernization

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Aspirational Project List

Should additional funding become available, the Aspirational Project List identifies a pool of projects developed in addition to the Financially Constrained Project List to address the region's transportation need for the next 20 years.

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Figure 8-2: Aspirational Project List

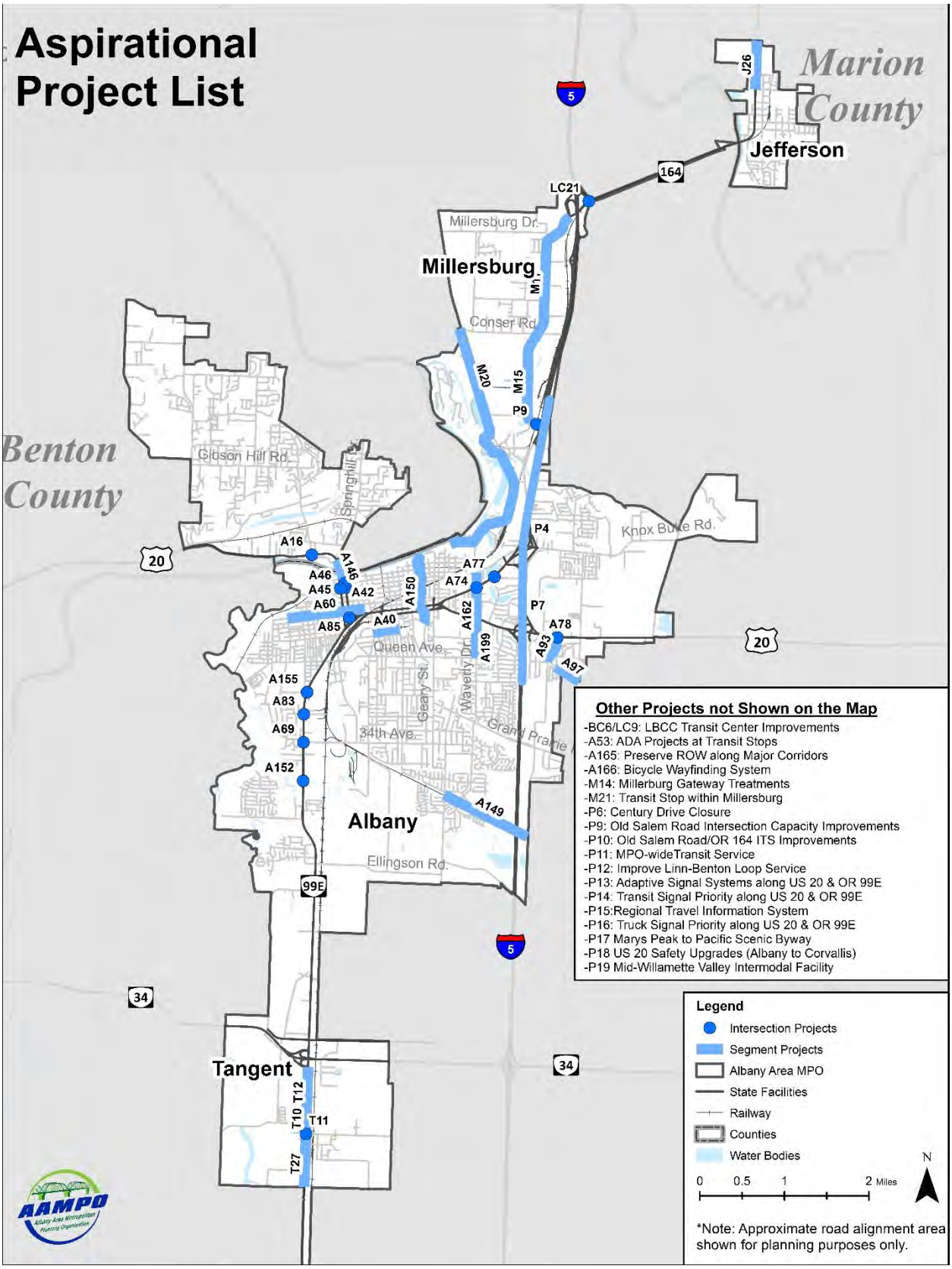

Table 8-2: Aspirational Project List

AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
BC6	LBCC Transit Center	LBCC Transit Center	LBCC Albany campus	Safety Improvement	-	City of Albany	$500,000	Transit
A16	US 20/North Albany Road Intersection Capacity Upgrade	US 20/North Albany Road	US 20/North Albany Road	On North Albany Road: eliminate split-phasing, convert southbound right to shared through-right lane & convert southbound through-left to left-only lane, creating dual southbound left-turns. Install westbound right-turn overlap phasing. Implement actuated-coordinated signal control, and develop signal coordination between Springhill Road and North Albany Road for better traffic progression along US 20 during peak periods.	-	City of Albany	$40,000	Intersection Capacity Improvement
A40	12th Ave (West) Bike Boulevard	12th Ave	Hill St to Jackson St	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on 12th Avenue from Hill Street to Jackson Street. Signs will be added to direct bicyclists to the existing path near the Boys and Girls Club.	0.32	City of Albany	$32,000	Bike Improvement

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A42	US 20 (Lyon St)/2nd Ave Intersection Capacity Upgrade	US 20 (Lyon St)/2nd Ave	US 20 (Lyon St)/2nd Ave	Restripe for a new 100-foot eastbound exclusive left-turn lane, removing a portion of on-street parking on 2nd Avenue. Extend cycle length to 70 seconds, and develop timing plans with offsets that facilitate northbound and eastbound progression.	-	City of Albany	$23,000	Intersection Capacity Improvement
A45	US 20 (Lyon St)/1st Ave Intersection Capacity Upgrade	US 20 (Lyon St)/1st Ave	US 20 (Lyon St)/1st Ave	Convert northern westbound through lane to a shared thru-right lane on 1st Avenue. Close crosswalk on north leg of intersection. Restripe for a new 100-foot northbound exclusive left-turn lane, removing a portion of on-street parking on west side of Lyon Street. Extend cycle length to 70 seconds, and develop timing plans with offsets that facilitate northbound and westbound progression.	-	City of Albany	$22,000	Intersection Capacity Improvement

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A46	US 20 (Ellsworth St)/2nd Ave Intersection Capacity Upgrade	US 20 (Ellsworth St)/2nd Ave	US 20 (Ellsworth St)/2nd Ave	Restripe for a new southbound exclusive left-turn lane on Ellsworth, removing a portion of on-street parking on eastside of Ellsworth Street. Initially restripe only 100 feet from intersection, but may need to extend to 250 feet (full block length) due to 2030 projected queuing (Cost estimates are based on 250 feet restriped lane). Extend cycle length to 70 seconds, and develop timing plans with offsets that facilitate southbound and westbound progression. It will also include a bike signal phase to get WB cyclists on 1st across the highway, and allow for retention of the ped crosswalk at the same location.	-	City of Albany	$17,000	Intersection Capacity Improvement
A53	ADA Accessibility Projects	N/A	All Albany	Improved Pedestrian Crossings at Transit Stops	-	City of Albany	$430,000	Pedestrian Crossing Improvement
A60	7th Ave Bike Boulevard	7th Ave	Takena St to Cool! Swim Park	Install bike boulevard treatments including wayfinding, traffic calming, and intersections treatments as deemed necessary on 7th Avenue from Takena Street to Cool! Swim Park.	0.93	City of Albany	$95,000	Bike Improvement

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A69	OR 99E/34th Ave Intersection Capacity Upgrade	OR 99E/34th Ave	OR 99E/34th Ave	Switch southbound left-turn to protected phasing and install a 125-foot northbound right-turn lane and northbound right-turn overlap phasing. Right-turn lane length adjusted from 200 feet to 125 based on ROW considerations. Install second westbound 125-foot left-turn lane on 34th Avenue. Assumes current YMCA access is relocated east along 34th Avenue to edge of property. Other option is to convert YMCA access on 34th to right-in, right-out and develop full 200 foot WB left-turn lanes on 34th. Install a second southbound left-turn lane.	-	City of Albany	$648,000	Intersection Capacity Improvement
A74	OR 99E/Waverly Ave Intersection Capacity Upgrade	OR 99E/Waverly Ave	OR 99E/Waverly Ave	Install second westbound left-turn lane on OR 99E & second southbound receiving lane on Waverly Avenue. Install exclusive northbound right-turn lane and overlap signal phasing. Obtain right-of-way for an exclusive southbound right-turn lane at time impacted parcel redevelops and construct when warranted (cost for this improvement identified separately under other costs).	-	City of Albany	$959,000	Intersection Capacity Improvement
A77	OR 99E/Killdeer Ave Intersection Capacity Upgrade	OR 99E/Killdeer Ave	OR 99E/Killdeer Ave	Install 100 foot eastbound right-turn lane on Hwy 99E. Only if needed to meet OHP mobility standards.	-	City of Albany	$3,207,000	Intersection Capacity Improvement

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AAMPO RTP: Aspirational Project List

ID	Project Name	Roadway/Trail	Location	Description	Length (miles)	Area	Cost	Project Type
A78	US 20/Timber St Signal	US 20/Timber St	US 20/Timber St	Develop a traffic signal once warrants are met and once Timber Street extension (link project #L4) is complete. Install 125 foot eastbound right-turn lane and overlap phasing. Install third eastbound through lane when warranted by Highway 20 traffic volumes.	-	City of Albany	$571,000	Intersection Capacity Improvement
A83	OR 99E/29th Ave Intersection Capacity Upgrade	OR 99E/29th Ave	OR 99E/29th Ave	Restripe both eastbound and westbound approaches to include an exclusive left-turn lane and a shared through-right on 29th Ave. Increase curb return radius and relocate signal poles as needed.	-	City of Albany	$106,000	Intersection Capacity Improvement
A85	OR 99E/Lyon St Intersection Capacity Upgrade	OR 99E/Lyon St	OR 99E/Lyon St	NB Ramp: Install a second northbound left-turn lane from the 99E off-ramp and a second receiving lane NB on Lyon Street. SB Ramp: Install second NB through lane on Lyon Street.	-	City of Albany	$205,000	Intersection Capacity Improvement
A93	Timber St Extension	Timber St	US 20 to Three Lakes Rd	Extends Timber Street south of US 20 to connect to the Three Lakes Rd/Spicer Dr intersection. The design and alignment review will be completed with the I-5 Corridor Study (project S10). Alternate routes for the Industrial Way ingress/egress will be considered.	0.33	City of Albany	$2,708,000	New Roadway
A96	Spicer Dr Extension (West of Timber St)	Spicer Drive	Circle Dr to Timber St	Extend Spicer Drive east from Circle Drive to Timber Street.	0.12	City of Albany	$982,000	New Roadway

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AAMPO RTP: Aspirational Project List

ID	Project Name	Roadway/Trail	Location	Description	Length (miles)	Area	Cost	Project Type
A97	Spicer Dr Extension (East of Timber St)	Spicer Drive	Timber St to Goldfish Farm Rd	Extend Spicer Drive east from Timber Street to Goldfish Farm Road.	0.33	City of Albany	$1,666,000	New Roadway
A146	Albany-Corvallis Multiuse Path River Crossing	New Trail	From Springhill Rd to across the Lyon Street bridge	Construct bike/ped bridge over the Willamette River and extending to Springhill Road using the existing US 20 (Lyon Street) bridge	-	City of Albany	$761,000	New Multi-Use Path
A149	Lebanon Trail	New Trail	Columbus St east to UGB	Construct a multi-use path parallel to the railroad tracks south of Del Rio Avenue from Columbus Street to the Urban Growth Boundary to provide for a future connection to Lebanon.	1.11	City of Albany	$581,000	New Multi-Use Path
A150	Periwinkle Trail Extension	Periwinkle Trail	10th Ave to Willamette River	Extend Periwinkle Creek Trail north from the existing terminus at 10th Avenue to the Willamette River.	0.91	City of Albany	$1,528,000	New Multi-Use Path
A152	99E/Oak Creek Ped Crossing	99E/Oak Creek Trail	99E/Oak Creek Trail	Construct hybrid pedestrian signalized crossing improvement at Oregon 99E/Oak Creek Trail	-	City of Albany	$129,000	Pedestrian Crossing Improvement
A155	99E/24th Ave Ped Crossing	99E/24th Ave	99E/24th Ave	Construct a pedestrian signalized crossing improvement at Oregon 99E/24th Avenue.	-	City of Albany	$129,000	Pedestrian Crossing Improvement
A162	Waverly Dr Sidewalks	Waverly Dr	Salem Ave to Queen Ave	Construct sidewalks to fill gaps on Waverly Drive between Salem Avenue and Queen Avenue.	1.01	City of Albany	$88,000	Sidewalk Infill
A165	Major Corridors	Hwy 99, US 20, Geary St, and others	Hwy 99, US 20, Geary St, and others	Preserve ROW along busy corridors (Hwy 99E, US 20, Geary, and others listed in Memo #6C) with redevelopment to plan for growth near 2030.	-	City of Albany	*	Study

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
A166	Wayfinding	N/A	All Albany	Develop a plan to provide a wayfinding system for cyclists on on-street and off-street bikeways. The plan should identify locations, text and design of wayfinding signs.	-	City of Albany	$25,000	Study
A199	Waverly Dr Rehabilitation	Waverly Dr	Santiam Hwy to Queen Ave	Project includes a 2-inch asphalt-grind inlay, updated curb ramps, and improved street lighting. Consider replacing 12-inch AC water line on this segment of road ahead of or in conjunction with this project.	0.46	City of Albany	$600,000	Preservation
J26	OR 164 Modernization	OR 164	North Ave to Talbot Rd	Add curb, gutter, sidewalk and bike lanes	0.58	City of Jefferson	$7,600,000	Modernization
T10	Hwy 99E On-Street Bike Lane	Hwy 99E	Hwy 34 to Post Office	Add on-street bike lane	1.23	City of Tangent	$26,000	Bike Improvement
T11	Hwy 99E/Tangent Dr Signal	Hwy 99E/Tangent Dr	Hwy 99E/Tangent Dr	Add traffic signal	-	City of Tangent	$180,000	Intersection Capacity Improvement
T12	Hwy 99E Raised Median	Hwy 99E	North of N Lake Creek Rd	Install raised median barrier north of N Lake Creek Dr	0.20	City of Tangent	$87,000	Roadway Safety Improvement
T27	Hwy 99E Turn Lane	Hwy 99E	Hwy 34 south to UGB	Install center left turn lane between existing 5-lane section near Hwy 34 and south UGB	1.16	City of Tangent	$207,000	Roadway Capacity Improvement
LC9	LBCC Transit Center	LBCC Transit Center	LBCC Campus	Transit Center at LBCC Campus (Linn County funded portion) - including multimodal and bicycle access into the LBCC campus	-	Linn County	*	Transit

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
LC21	OR 164/I-5 NB Ramps New Signal	OR 164/I-5 NB Ramps	OR 164/I-5 NB Ramps	Install new signal	-	Linn County	$2,000,000	Intersection Capacity Improvement
M14	Millersburg gateway treatments	Millersburg gateway treatments	City of Millersburg Entrance	Provide gateway treatments at northern and southern end of Millersburg (Old Salem Rd)	-	City of Millersburg	*	Roadway Capacity Improvement
M15	Reconstruct Old Salem Rd	Old Salem Road	I-5 SB Off-Ramp to Nygren Road	Reconstruct Old Salem road to arterial cross-section (bike lanes, curb, gutter, sidewalk) [M8 sidewalk construction on the Financially Constrained Project list]	13728.00	City of Millersburg	$25,735,503	Modernization
M17	Old Salem Road Shared-Use Path	Old Salem Road	I-5 SB Off-Ramp to Nygren Road	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)	13728.00	City of Millersburg	$2,401,027	New Multi-Use Path
M20	"Four Lakes" Trail	"Four Lakes" Trail	City of Millersburg	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	3.28	City of Millersburg	$824,057	New Multi-Use Path
M21	Transit Stop	City of Millersburg	City of Millersburg	Identify general location of future transit stops and amenities	-	City of Millersburg	$33,759	Transit
P6	Century Drive Closure	Century Dr	Knox Butte to Dunlap	Terminate Century Drive at Knox Butte and create a cul-de-sac (see P7)	-	City of Albany	$8,480	Road Closure

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
P9	Old Salem Road/Old Salem Road Intersection Capacity Improvements	Old Salem Road/Old Salem Road	Old Salem Road/Old Salem Road	PLACEHOLDER [The idea is to - Improve capacity (add turn lanes) at intersection of Old Salem Rd at Old Salem Rd]	-	City of Millersburg	*	Intersection Capacity Improvement
P10	Old Salem Road/OR 164 ITS Improvements	Old Salem Road/OR 164	Old Salem Road/OR 164	PLACEHOLDER [Old Salem Rd/OR 164 as an alternate/parallel route to I-5 – increase signage/ITS]	-	City of Millersburg	*	Roadway Improvement
P11	Transit Service between Jefferson, Millersburg and Albany	Old Salem Road/OR164	Old Salem Road/OR164	PLACEHOLDER [Provide Transit service to Millersburg and Jefferson along Old Salem Rd and OR 164. This could include a look along Millersburg Drive and Alexander Lane]	-	Albany Area MPO	*	Transit
P12	Improve Linn Benton Loop	OR 34	OR 34	PLACEHOLDER [Enhance transit service between Albany and Corvallis]	-	Linn County	*	Transit
P13	Adaptive Signals	US 20, OR99E	AAMPO Area	PLACEHOLDER [Install/Implement Adaptive Signals Systems along US 20 and OR99E]	-	Albany Area MPO	$30,000/ per intersection	Roadway Improvement
P14	Transit Signal Priority	US 20, OR99E	AAMPO Area	PLACEHOLDER [Implement TSP at key intersections along transit routes. If possible identify locations for queue jumps]	-	Albany Area MPO	$50,000/per approach	Transit
P15	Regional Traveler Information System	I-5, US 20, OR 99E	AAMPO Area	PLAXEHOLDER [Install real-time traveler information system, including railroad crossing times]	-	Albany Area MPO	*	Roadway Improvement
P16	Truck Signal Priority	US 20, OR99E	AAMPO Area	PLACEHOLDER [Implement truck signal priority at key intersections along transit routes]	-	Albany Area MPO	$50,000/per approach	Roadway Improvement

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AAMPO RTP: Aspirational Project List								
ID	**Project Name**	**Roadway/Trail**	**Location**	**Description**	**Length (miles)**	**Area**	**Cost**	**Project Type**
P17	Marys Peak to Pacific Scenic Byway	Along OR 34	I-5 to Waldport	The proposed scenic byway stretches from I-5 in Linn County, through Tangent on to, Corvallis, Philomath, and Alsea in Benton County, then to Tidewater, and Waldport along OR 34 in Lincoln County with spurs branching out to Marys Peak and Alesa Falls	-	Albany Area MPO	*	New trail
P18	US 20 Safety Upgrades	US 20	City of Albany to City of Corvallis	US 20 Safety Upgrades. To be funded through House Bill 2017. Note: Majority of the improvements to be constructed will be in Benton County outside the AAMPO area.	-	Albany Area	$20,000,000	Safety
P19	Mid-Willamette Valley Intermodal Facility	-	To be determined	Construct an intermodal facility a specific location has not been determined, however Millersburg has been identified as a potential candidate site.	-	To be determined	$25,000,000	Freight

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Transit Development Plan

The Transit Development Plan provides guidance for transit operational improvements for the Albany area. It provides details on three scenarios that create a vision, projects, and strategies for transit over the short, medium, and long-term time frames. The Transit Development Plan[41], which will be approved by the MPO Board separately from this RTP, is consistent with the RTP goals, policies, and recommended projects. The short-term scenario is considered part of the Financially Constrained package for the RTP. Medium and long-term scenarios, as well as supporting programs and policies, are considered aspirational. Ultimately, the City of Albany (via the Albany Transit System) and other local and regional transit providers have the responsibility of implementing guidance from the Transit Development Plan, coordinating with other transit providers as needed, and maintaining the plan as new data become available.

- **Short-Term (1–3 years):** This scenario continues covering nearly all areas served today but reduces frequency to every 90 minutes. The longer frequencies address low on-time performance by adding running time to each route. See Figure 8-3
- **Medium-Term (5–10 years):** This scenario assumes one additional vehicle, and an 80 percent increase in service hours. There would be six routes covering much of the same service area as today, at 60-minute headways. See Figure 8-4
- **Long-Term (15–25 years):** The unconstrained scenario lays out a vision for a frequent and connected system. This scenario offers two routes with 30-minute headways, three at 60 minutes, plus one peak-hour commuter route to Jefferson. It adds four times more service hours. See Figure 8-5

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[41] Albany Area Regional Transportation Plan – Transit Development Plan, Nelson\Nygaard, November 1, 2017.

Figure 8-3: Short-Term Network

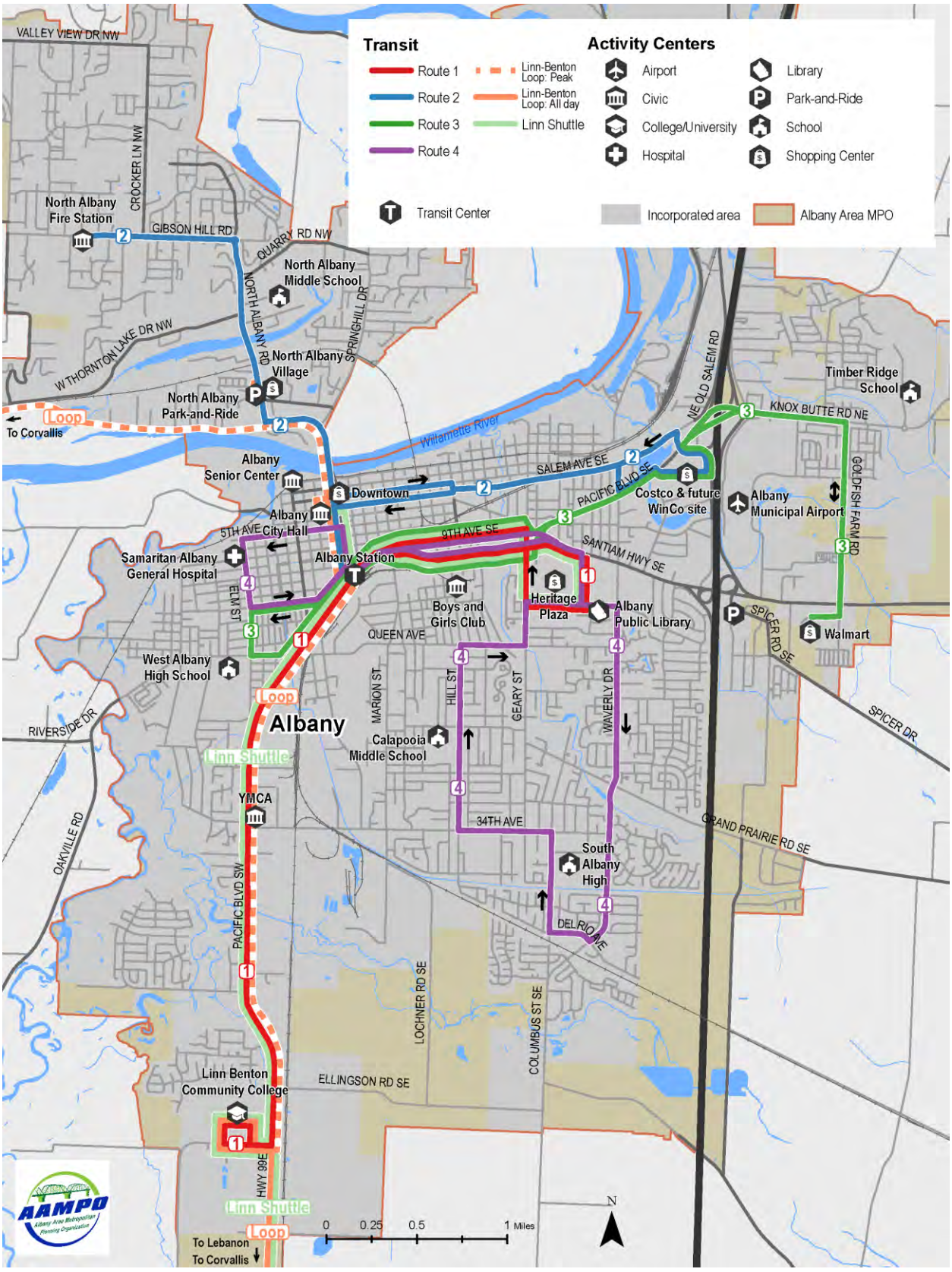


Figure 8-4: Medium Term Network

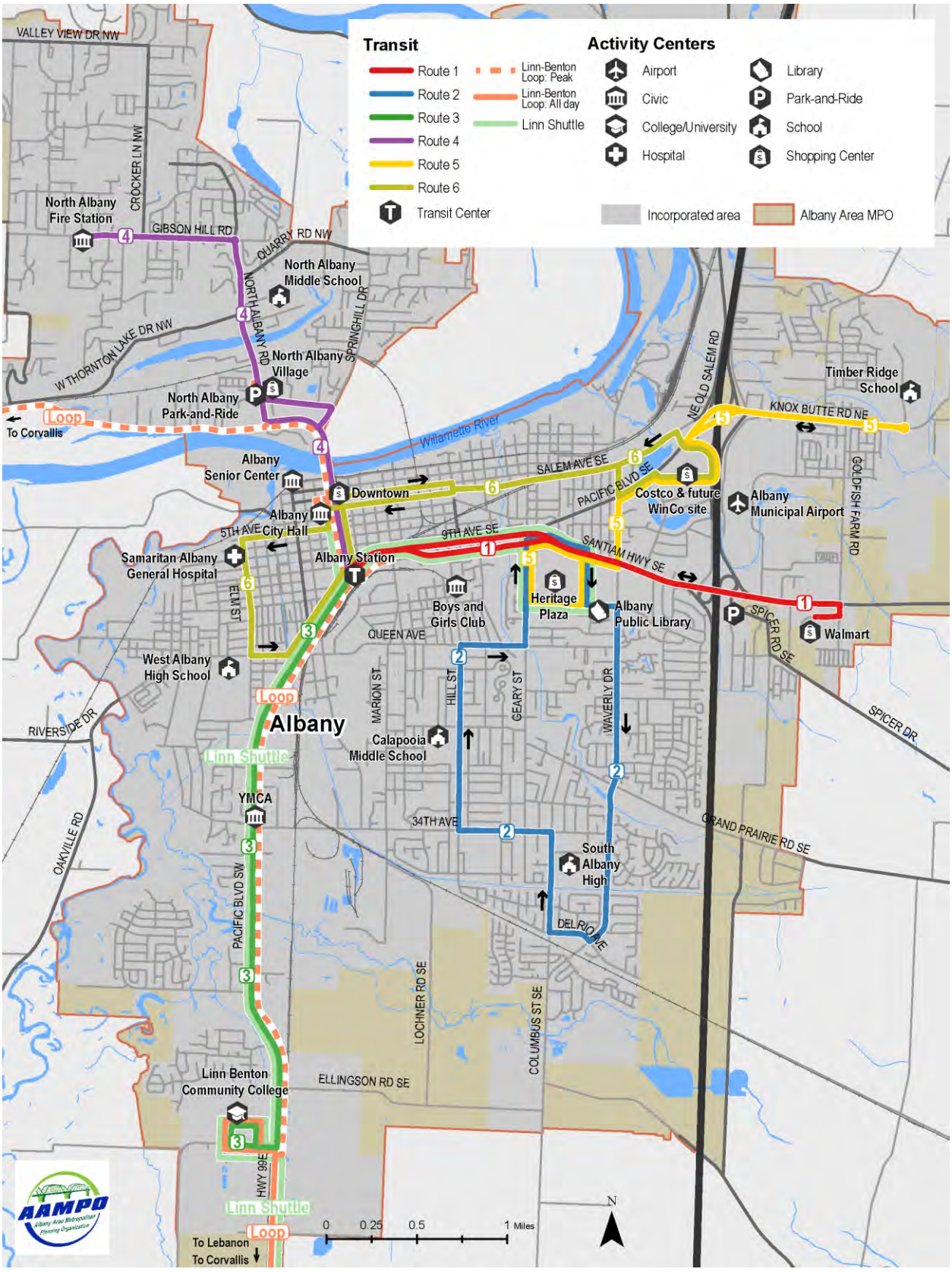
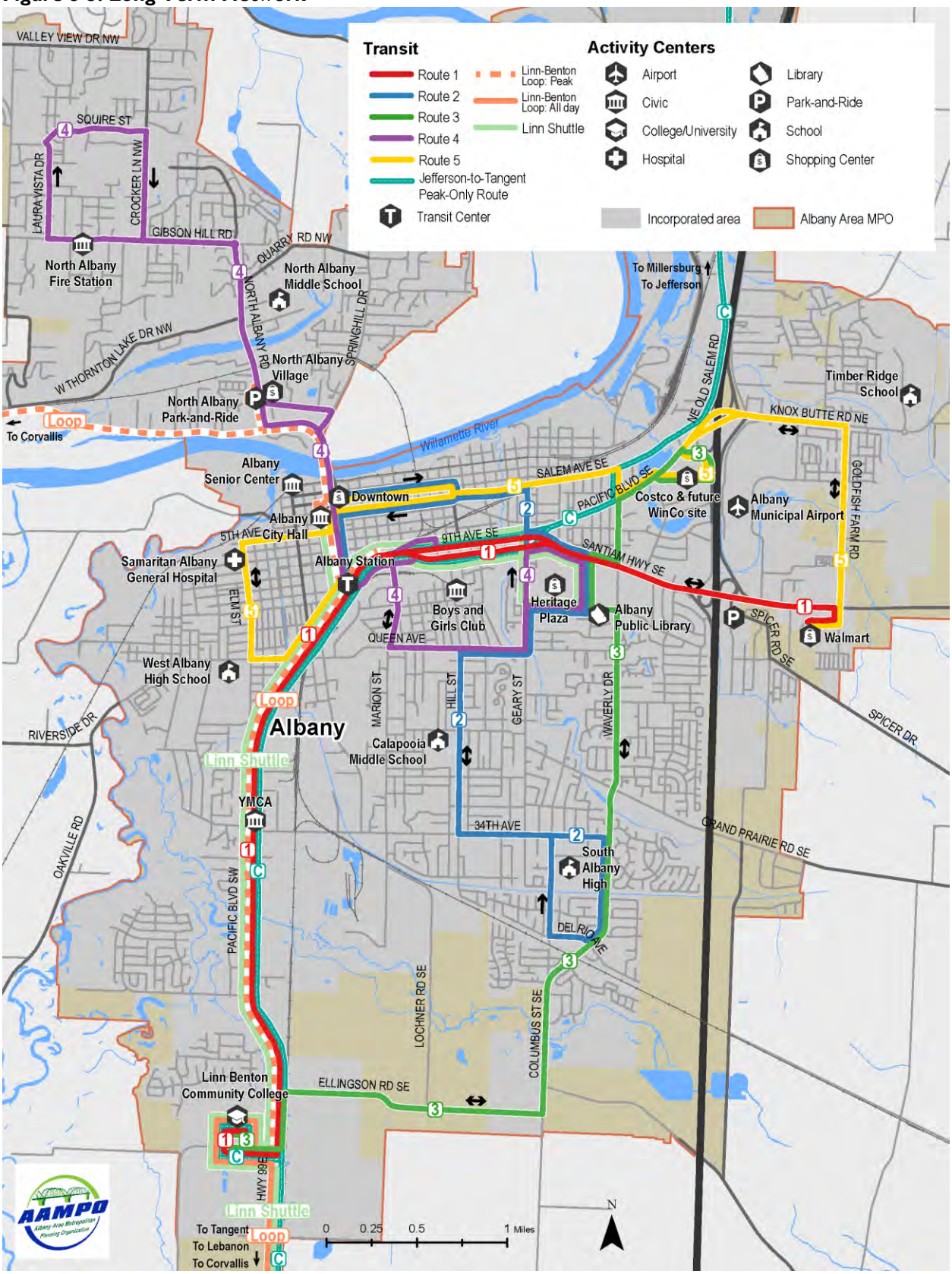


Figure 8-5: Long Term Network



Key Programmatic Recommendations

Successful transit systems provide balanced fare prices and pass programs, clear and relevant public information, and effective technology. These policies and programs help ensure that the system is accessible for people of all incomes, convenient, understandable, and efficient. The transit program elements apply in all future service scenarios.

Public Information and Marketing

If the public is not aware of how the system works, or how to board a bus, the public investment in the service will see few benefits. Marketing includes efforts to educate the public on where, when, and how to use transit. The following strategies elevate ATS' profile in the community.

- Advertise in multiple formats and channels.
- Remove language barriers for Spanish-speaking riders.
- Offer travel training.

System Branding

Maintaining a single brand for vehicles, bus stops and materials increases the visibility of the transit service, develops public recognition and acceptance of the service, and informs the public that all services and stops work together as a single system. This is especially important for ATS because it operates multiple transit service products (ATS local routes, the Loop, and Albany Call-A-Ride), and has transit service interacting closely with other transit services in the area.

ATS has indicated that it needs a refresh of their logo and branding. The best time for such a change is when there is a noticeable change in service, such as a route restructure or improvement in service frequency. ATS should consider a refresh of ATS' brand at the same time they implement a service change, particularly the Short-Term or Medium-Term phase. It could help ATS to use the branding to distinguish between its service products to clarify the management, funding and operating conditions resulting in the different service and policy structures in each service.

System and Route Maps

Maps and schedules are the primary tool people use to obtain information about ATS. The accessibility, legibility and simplicity of these maps and schedules enhance comprehension of the system. ATS' current map is good quality, showing all street names and indicating time points. The following recommendation could improve the existing maps and access to information.

- Reduce number of timepoints to 10.
- Replace timepoint icons on map with numbers or letters to correspond with timepoint labels in the schedule.
- Replace labels for points of interest with actual names of places.
- Add more major destinations to the map. Use stop-level ridership or public requests to identify additional destinations.

- Add the Loop, or show connections to the Loop, on the map. Many ATS passengers use the Loop, and transfers between the two services can be facilitated by clearly identifying where these connections occur.
- Create route-specific maps to provide details on stop locations and key destinations along the route.

Technology

Technology for public transportation and related travel options is changing rapidly and in ways that are difficult to predict over the long-term. ATS plans to implement some or all of the strategies below, while maintaining a flexible approach to improving the transit system with new technologies as appropriate to the system. The following technology strategies will improve service delivery.

- Traveler information system hardware
- Automatic passenger counter
- Customer Information

Fares

The base fare for ATS is $1 per trip. Transfers between Routes 2 and 3 at Albany Station or at the Jackson Street Transfer Stop are free. Fare-paying Loop passengers can also board Route 3 without any additional charge if they transfer from Loop at LBCC and travel to Albany Station.

Albany can implement a transfer system that allows passengers to transfer without any additional charge to another route within 90 minutes. This can be handled inexpensively with paper transfers, or ATS could invest in magnetic swipe cards, mobile apps and other methods to enable transfers.

In terms of how much passengers pay to use ATS, the $1.00 cost per trip is comparable to its peers. Additionally, the survey indicated that 54 percent of ATS passengers use a free college pass to board. This suggests than an increase in the fare is unlikely to provide a significant increase in fare revenue, as it would impact less than half of all passengers.

Therefore, it is recommended that the fares remain unchanged for the short-term. ATS is an important service that many low-income households and all-purpose riders depend upon. An increase to the cost of this service is likely to place an increased financial burden on passengers, especially those who do not have access to a free fare, and may reduce overall ridership.

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Chapter 9: Evaluation and System Performance

Environmental Screening

During the project development and evaluation process, the environmental impacts were assessed for each project package based on air quality, greenhouse gas emissions and natural and cultural resources at risk. In addition, *Moving Ahead for Progress for the 21st Century* (MAP-21), established environmental-specific performance measures to provide a performance and outcome-based program to help states prioritize transportation investments to be consistent with the seven national goals. The Environmental Screening section includes a discussion of the potential environmental impacts of the proposed project packages.

Methodology and Results

To determine the impact on the environment, travel volume and delay outputs from the CALM travel model were utilized with sketch-level tools to estimate the air quality and greenhouse gas emissions under the Financially Constrained project package. A high-level spatial analysis was used to estimate the impact to natural and cultural resources at risk for each project package.

Air Quality

Transportation decision making can impact air quality, as regulated under the Clean Air Act, in a variety of ways including the emission of Criteria Air Pollutants (e.g. carbon monoxide, ozone, and particulate matter) during the construction and operation of transportation projects.

The annual emissions for each project package were estimated using a simplified version of the EPA Motor Vehicle Emission Simulator (MOVES). VMT by mode data from the CALM travel model was used to provide the main inputs into the emissions model. The emissions model also contains key assumptions about the future vehicle fleet, assuming less old high-emissions vehicles on the road by the year 2040. Table 9-1 identifies expected reduction in total emissions for the Financially Constrained project package for the AAMPO area.

Table 9-1: Air Quality Results

Scenario	Criteria Air Contaminants*						Air Toxics**		
	NO_X	SO_2	$PM_{2.5}$	CO	VOCs	Total	Benzene	Diesel PM	Total
Financially Constrained	0.059	0.001	0.002	0.317	0.004	0.384	0.102	1.006	1.108

*Criteria Air Contaminants reported in thousands of annual short tons

**Air Toxics reported in annual short tons

Greenhouse Gas Emissions

Greenhouse gas emissions refers to the energy consumed and greenhouse gases emitted during the design and construction of transportation projects, as well as during transportation operations. Transportation decision making can impact energy consumption and greenhouse gas emissions in a variety of ways, including the decision of the types of capital projects to invest in (highway, transit, bike, or pedestrian, etc.), the types of programs to invest in (e.g. transportation demand management programs), and/or policies to implement (e.g. road pricing or parking fees that can discourage single occupancy vehicle travel), among others.

The life-cycle CO_{2E} was used as the greenhouse gas emissions measurement. The CO_{2E} emissions scenario were calculated using the same process as used for air quality (simplified version of MOVES). The greenhouse gas emissions for the Financially Constrained project package are summarized in Table 9-2.

Table 9-2: Greenhouse Gas Emissions Results

Scenario	Annual Life Cycle CO_{2E} (millions of metric tons)
Financially Constrained	0.1036

Resources at Risk

Resources at risk refers to the presence and diversity of species (both plant and animal) as well as the conservation of critical habitat. Transportation decision making can influence biodiversity in several ways, including decisions regarding where and how to develop (impacts to habitat), creating impacts to the environment that are harmful to threatened and endangered species (air, water, and noise pollution, etc.), and construction and design techniques (split profile roadways, wildlife crossings, etc.), among others.

The following environmental and cultural resources as risk were analyzed:

- Endangered Animals
- Fish Habitats
- Endangered Plants
- Vegetation
- Wildlife Habitats
- Wetlands
- Geological Hazards (including hazardous materials locations)
- Parks
- Historic Buildings

Project impacts on the resources listed above were evaluated through weighted criteria based on project type (i.e. new roadway, roadway/intersection widening) and proximity to resources. Each project was assigned a weighted score representing the total impacts to natural, built, and cultural resources for each scenario.

Both project packages received a high score due to the potential construction impacts to one primary natural resource risk: Hazardous materials sites (mainly existing or old gas stations). There are many projects in the central Albany area and along key commercial corridors (US 20, OR 99E). Many of these projects would occur near sites with potential underground pollution

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plumes, which, if exposed, could create major environmental run-off and groundwater issues. These potential impacts were identified as key consideration in project development for implementing capital improvements.

Summary

The environmental information collected as part of the AAMPO Area transportation planning process can be used to identify and document potentially affected environmental resources. This information can be used to inform future decisions to minimize environmental impacts of any transportation improvement being considered.

Regional Intersection Mobility

Intersection operations were analyzed based on the 2000 Highway Capacity Manual[42] for signalized intersections and 2010 Highway Capacity Manual[43] for unsignalized intersections. Of the 28 study intersections, there are four unsignalized intersections and three signalized intersections that are not expected to meet their respective mobility targets under the 2040 average weekday p.m. peak hour (Financially Constrained) conditions. An additional four locations (eleven total) that would not meet their respective mobility targets during the 2040 seasonal peak (Financially Constrained) conditions.

However, intersection operations are expected to improve under both the 2040 average weekday p.m. peak hour and 2040 seasonal peak (Financially Constrained) conditions at three intersections Knox Butte Road/Century Drive & I-5 NB Off Ramp, Queen Avenue/Pacific Highway (OR 99E) and Springhill Drive/Albany-Corvallis Highway (US 20). In addition, intersection operations are expected to improve under the 2040 average weekday p.m. peak hour (Financially Constrained) conditions at the Waverly Drive/Santiam Highway intersection.

Assuming the Albany Area MPO grows in accordance with its current adopted land use plan several intersections along state highways (I-5, US 20, OR 99E, OR 164) and Knox Butte Road will not be able to meet ODOT's v/c ratio-based mobility targets. In this situation (which is common in communities with roadways that experience high travel demands and have limited funding and/or significant constraints for improvements), adoption of alternative mobility targets is likely appropriate. Alternative mobility targets reflect realistic expectations for roadway performance at the end of the 20-year planning horizon, based on traffic projections. Adopting realistic alternative targets can provide a more reasonable target to help balance performance expectations with local economic and growth needs.

[42] *2000 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.

[43] *2010 Highway Capacity Manual*, Transportation Research Board, Washington DC, 2000.

Regional Performance Metrics

The performance metrics adopted by this AAMPO RTP provide a gauge for assessing how well decisions further regional and national goals. They will help the MPO to monitor transportation system performance and progress toward achieving the RTP Goals and Objectives as the recommendations are implemented. The performance metrics are consistent with MAP-21 requirements and the Oregon Transportation Planning Rule (TPR).

Performance Measures Overview

MAP-21 established a performance- and outcome-based program. The objective of this program is for States and MPOs to invest resources in projects that collectively make progress toward the achievement of the national goals.

Under MAP 21, USDOT established performance measures for states and MPOs to follow along with targets to support the measures. The performance metrics are grouped into three categories safety, infrastructure and system performance. The performance metrics included in order to fulfill MAP-21 requirements are as follows:

Safety

- Number of fatalities
- Rate of fatalities (fatalities per 100 million VMT)
- Number of serious injuries
- Rate of serious injuries (serious injuries per 100 million VMT)
- Number of non-motorized fatalities and non-motorized serious injuries

Infrastructure

- Percentage of pavements of the Interstate System in Good condition
- Percentage of pavements of the Interstate System in Poor condition
- Percentage of pavements of the non-interstate NHS (National Highway System) in Good condition
- Percentage of pavements of the non-interstate NHS in Poor condition
- Percentage of NHS bridges classified as in Good condition
- Percentage of NHS bridges classified as in Poor condition

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System Performance

- Percent of the person-miles traveled on the Interstate that are reliable
- Percent of the person-miles traveled on the non-Interstate NHS that are reliable
- Truck Travel Time Reliability (TTTR) Index
- Annual hours of peak hour excessive delay per capita
- Percent of non-SOV travel
- Total Emissions Reduction

MPOs are required to report performance progress every four to five years. MPOs must report on the condition and performance of the transportation system, progress achieved in meeting performance targets, evaluate how the preferred scenario has improved conditions and performance and how local policies and investments have impacted costs necessary to achieve performance targets.

At the time of completing this RTP, ODOT and MPOs within Oregon have not established a data reporting system with reliable data sources and consistent reporting. Therefore, at this time actual performance against the measures and targets have not been established. This will be a requirement for future AAMPO work programs.

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Chapter 10: Next Steps

This AAMPO RTP addresses planning needs to meet federal requirements. However, this plan does not solve all identified transportation issues or meet all of the requirements for achieving state compliance. The following issues should be considered when developing future AAMPO work programs to address the remaining needs:

- **Alternate Mobility Targets/Performance Measures** – the regional facility mobility analysis found multiple locations where year 2040 system performance would not meet ODOT or local agency mobility targets. Future AAMPO work programs or RTP Updates should consider reviewing regional mobility targets and adopting new targets or alternative performance measures to improve the ability to manage the system and assists agencies in implementing the RTP.
- **Willamette River Crossing Capacity** – the planned improvements in this RTP do not fully address congestion issues near the Willamette River crossing of Highway 20. While an investment package including a new Willamette River crossing was included in the RTP development process, it became clear that the needs and benefits/impacts of such an improvement were of a larger-regional scale (e.g., including both AAMPO and CAMPO). A larger-regional study of improvement options for US 20 and OR 34 could be considered.
- **Oregon Transportation Planning Rule (TPR) Compliance** – a key component of meeting current Oregon TPR requirements to facilitate the adoption of a state-compliant Regional Transportation System Plan (RTSP) includes demonstrating a reduction in vehicle miles travelled (VMT) per capita, or completing a process to develop an Integrated Land-Use and Transportation Plan (ILUTP) that would include a scenario planning process. Through this RTP development process, it was determined that meeting these requirements for AAMPO may be unreasonable. Therefore, AAMPO should continue to work with state agencies in reviewing and possible updating the TPR requirements. In addition, a scenario-planning process to develop an ILUTP may be required in the future.
- **MAP-21 Performance Measure Reporting -** at the time of completing this RTP, ODOT and MPOs within Oregon have not established a data reporting system with reliable data sources and consistent reporting. Therefore, at this time actual performance against the measures and targets have not been established. This will be a requirement for future AAMPO work programs, including both considerations for both annual reporting and regular RTP update reporting.

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Transit Development Plan

DATE: November 1, 2017

TO: Albany Area Metropolitan Planning Organization RTP Project Management Team

FROM: Stephanie Wright, Nelson\Nygaard
Jamey Dempster, Nelson\Nygaard
Paul Leitman, Nelson\Nygaard

SUBJECT: Albany Area Metropolitan Planning Organization Transit Development Plan
P14180-004

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Executive Summary

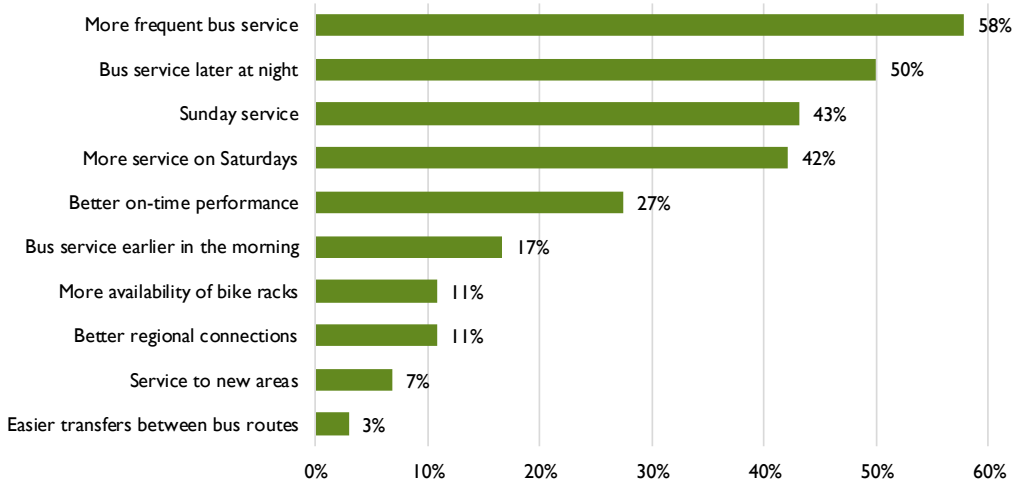
The Albany area is growing due in part to good access to job centers in the Willamette Valley, an affordable housing market, and growing educational institutions. Albany acts as a regional hub; Albany Station is one of the busiest transit stations in Oregon. Yet the local fixed-route system is small for a city of Albany's size, with just two buses running at a given time. Albany's population as of 2016 is 53,000. With a more than 30% increase in residents and employees expected by the year 2040, a convenient and connected regional and local public transportation system will help transport future residents and employees using sustainable means.

The Transit Development Plan is a guide for regional investment in public transportation. The Transit Development Plan focuses on public transportation services operated by the City of Albany: **Albany Transit System, Albany Call-A-Ride, and the Linn-Benton Loop.**

The strategies presented in this transit plan provide incremental improvements to make the local bus services faster; easier for riders and prospective riders to understand; and more convenient.

Outreach to community organizations, transit riders, and drivers revealed improvements needed to encourage people to take transit. This includes more frequent service, service at later times in the evenings, weekend service, and better on-time performance.

Requested service improvements, Fall 2014



Source: Fall 2014 On-Board Survey

Other key findings include:

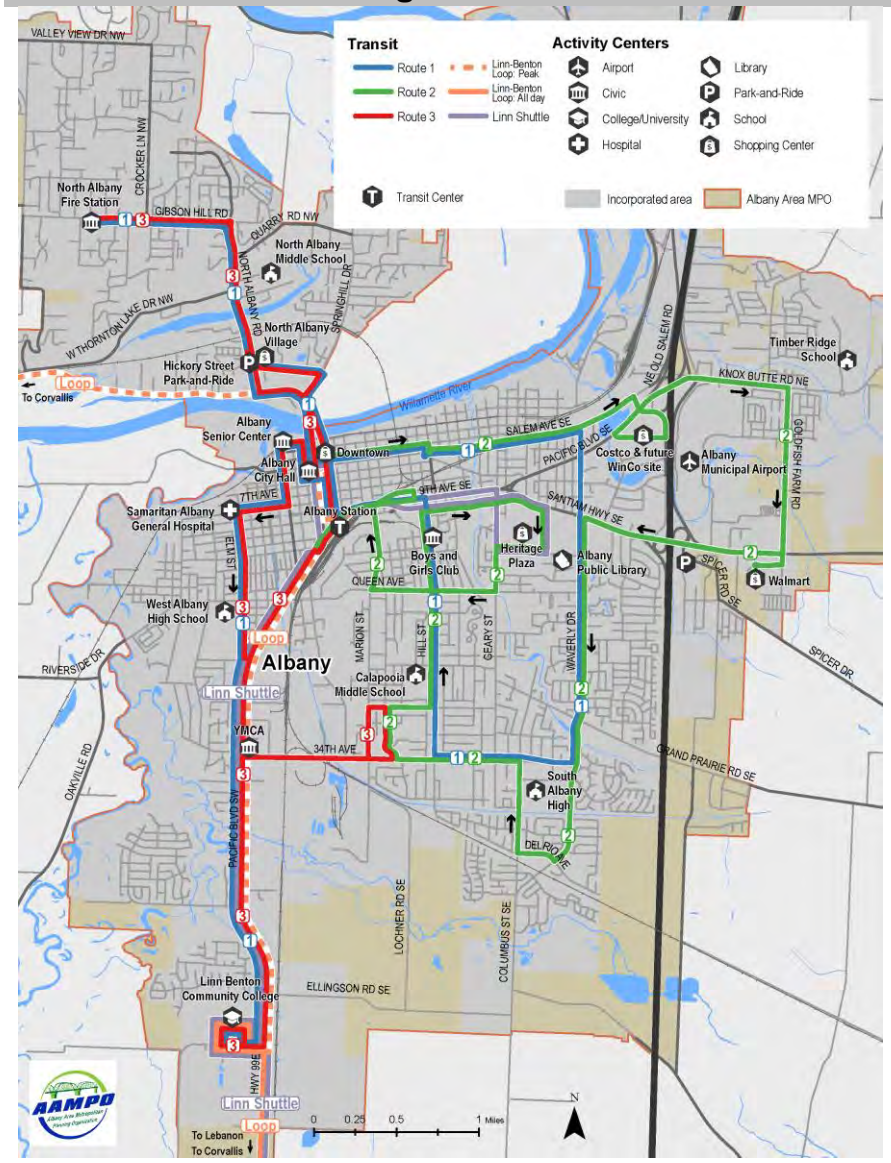
- **Ridership is increasing on regional services, but not on ATS.** Local ridership has plateaued, while service on the Loop and Linn Shuttle continues increasing, showing the need for enhanced regional public transportation.
- **Fixed-route service in Albany struggles with on-time performance and serving riders all day.** In general, buses are running behind schedule. Service breaks in the morning disrupt travel patterns.
- **Fixed-route service in Albany is minimal.** For a community of its size, fixed-route service is small, with just two buses running during the weekday and no service on weekends.
- **Regional connections are important to the region.** The Linn-Benton Loop carries more passengers each day than all of Albany's local routes, combined. Additionally, there are many people who live in Albany but commute to work or school in Corvallis, and students who take classes in both cities.
- **Small communities in the region are looking for transit service.** Local fixed-route bus service is limited only to the City of Albany, with no services in Millersburg, Jefferson or Tangent. Service for older adults and people with disabilities is available in Albany and Millersburg through Albany Call-A-Ride.
- **Investments in technology are necessary but currently unfunded.** Today's transit customers expect easy access to information in online and mobile platforms. To properly monitor and evaluate service, technology systems are needed on ATS vehicles.

The Transit Development Plan offers three service scenarios to guide Albany area's short- to long-range public transportation strategies. Each scenario offers incremental changes to keep pace with the City of Albany's growing role as a hub for the mid-Willamette Valley.

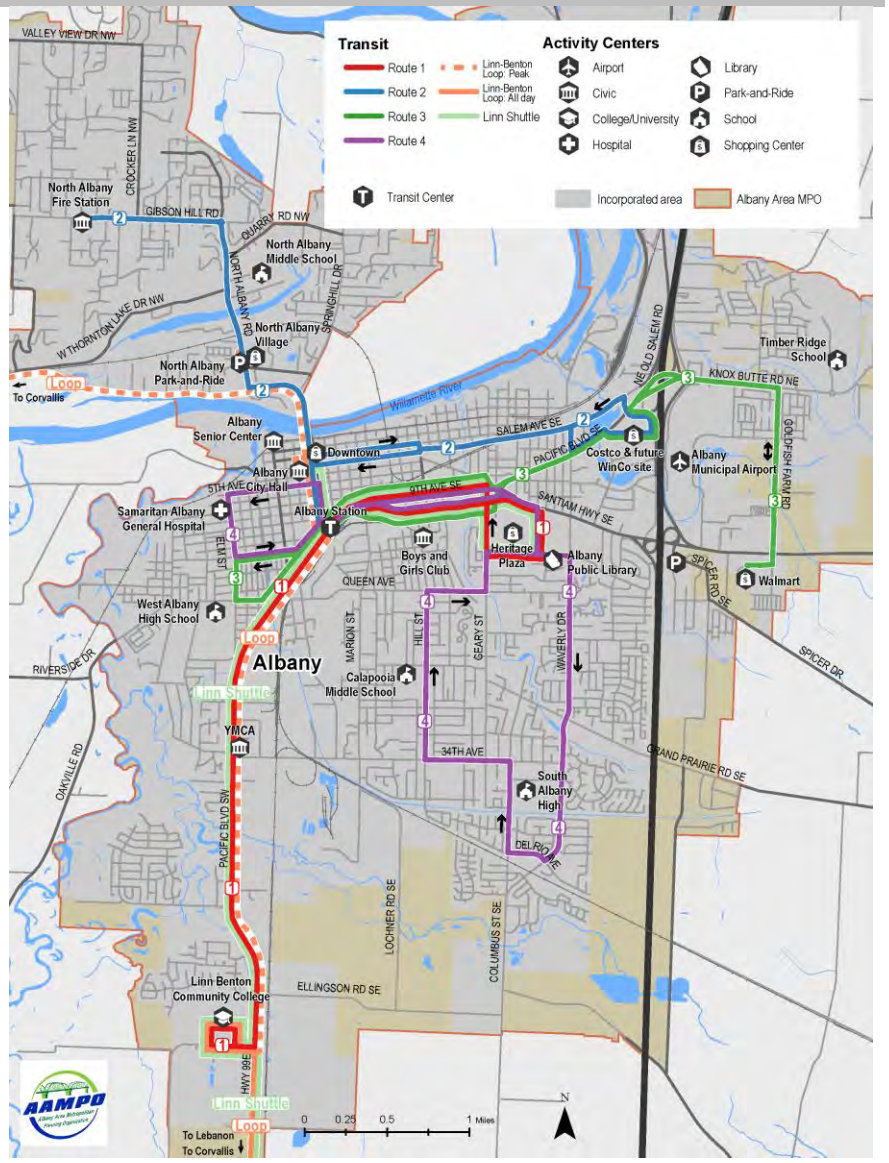
FUTURE TRANSIT SCENARIO HIGHLIGHTS

Short term	Medium Term	Long Term
▪ Make system simple to understand and navigate with four routes running all-day ▪ Improve reliability while retaining coverage. Extend frequencies to every 90 minutes ▪ Update system maps, branding and marketing ▪ Improve connections with regional transit services at Albany Station and Linn-Benton Community College ▪ Add evening weekday service	▪ Improve frequencies with a 6-route system with buses every 60 minutes ▪ Install automatic vehicle locators and other on-board equipment to improve efficiency and customer information ▪ Develop a shared regional website for public transportation	▪ Increase service to 30-minute frequency on some routes ▪ Expand CAR service to Jefferson and Tangent ▪ Build a new maintenance facility accommodate a larger system ▪ Explore coordinated changes to increase efficiency and reach of the Linn-Benton Loop ▪ Coordinate schedules with Linn Shuttle to provide frequent service along Highway 99 from Linn-Benton Community College to Albany Station

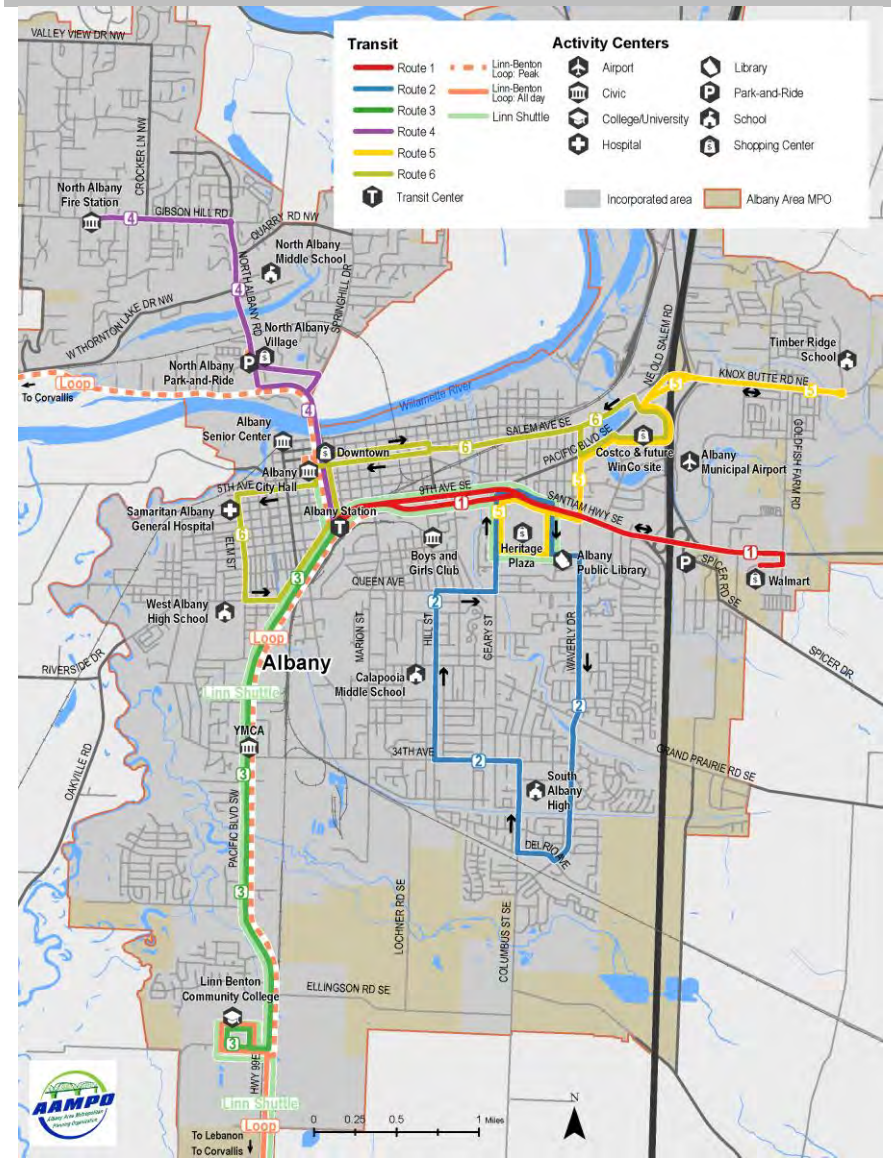
Existing ATS Routes



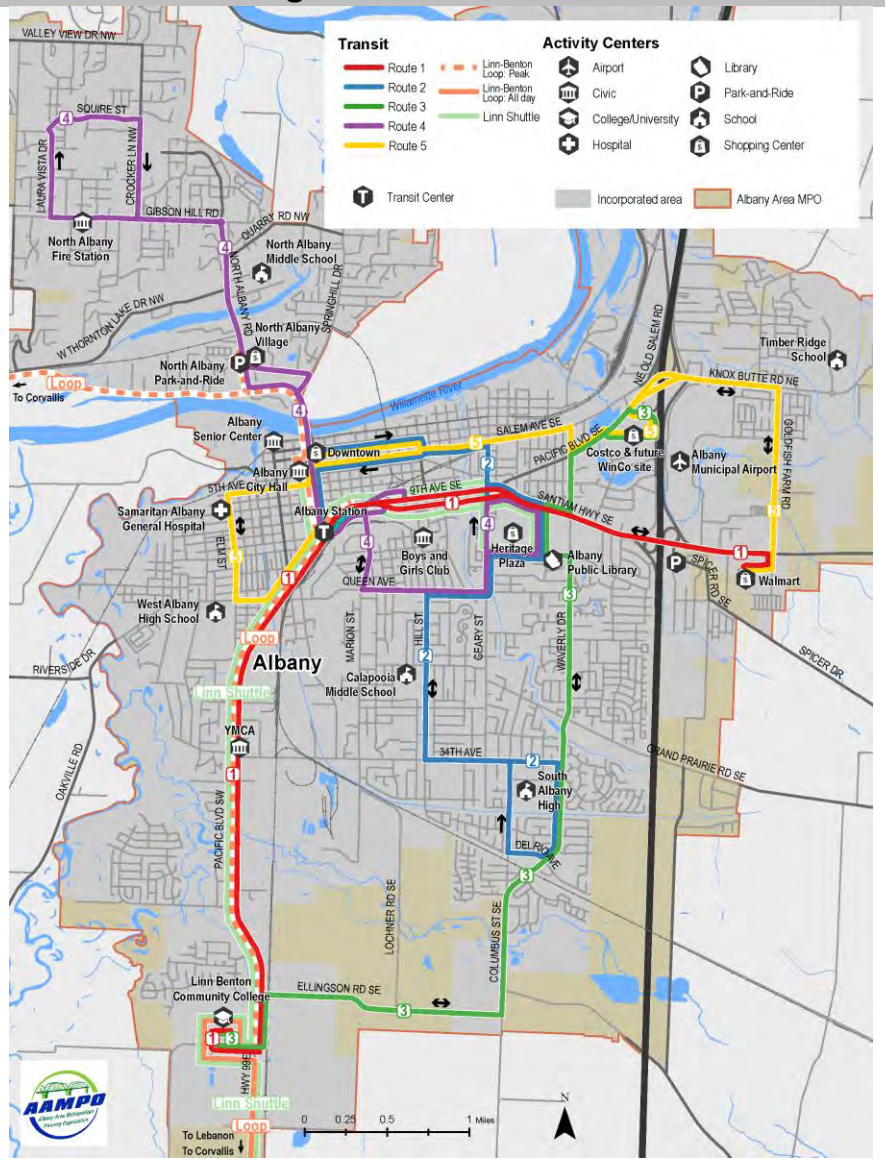
Short-Term Future Scenario



Medium-Term Future Scenarios



Long-Term Future Scenario



1 Introduction

The Albany area is growing quickly; the city expanded at more than double the rate of neighboring Corvallis from 2000 to 2015. Albany's proximity to job centers in Salem and Corvallis and its lower housing costs continues attracting new residents. This growth increases travel demand both regionally and locally. Transit service today is designed to serve a small portion of the community. In the future, expanded transit that draws new riders and better serves existing riders will help transport future residents and employees using sustainable means.

The Transit Development Plan (TDP) addresses regional transit needs and serves as a guide for regional investment in transit in the future. Throughout this document, the term "Albany area" is used to refer to the jurisdictions that comprise the AAMPO (Albany, Jefferson, Millersburg, and Tangent, and portions of Benton and Linn Counties). The TDP provides a long-range, 20-year vision for transit and short and medium-term steps that can be taken to achieve this vision. A focus of the TDP is making transit more convenient and reliable, by reducing travel times and providing better schedule adherence.

The Plan consists of 10 chapters:

1. **Introduction**
2. **Service Area Profile** provides an overview of Albany area communities, including an analysis of demographics and typical travel patterns.
3. **Transit Services Today** provides an overview of the transit services that operate within the Albany area, as well as services that connect the Albany area with other communities.
4. **Community Outreach** summarizes the results of various public engagement efforts that were used to determine the community's needs and desires for transit service.
5. **Operations Analysis** provides detailed information on the routes and services that operate within the Albany area, with a focus on route performance and trends.
6. **Needs Assessment** summarizes the key takeaways from the first five chapters and identifies the key challenges and potential needs of the existing transit system.
7. **Goals, Performance Measures, and Standards** documents the framework for decision-making and lays out strategies to monitor system performance and improve service quality.
8. **Future Transit System** recommends transit scenarios for short, medium, and long-term time frames, including route alignment, schedule, and frequency.
9. **Transit Policies and Programs** provides recommendations for the non-service side of transit operations that include marketing, technology, fares, and bus stop amenities.
10. **Implementation Schedule** summarizes recommendations by phase and provides order of magnitude costs.

For the purposes of this document, the Plan focuses on fixed-route services and regional transit services. Although Albany Call-A-Ride is referenced in the Plan, it is not a focus of the

recommendations, which are primarily designed for application to the Albany Transit System (ATS) fixed-route services.

2 Service Area Profile

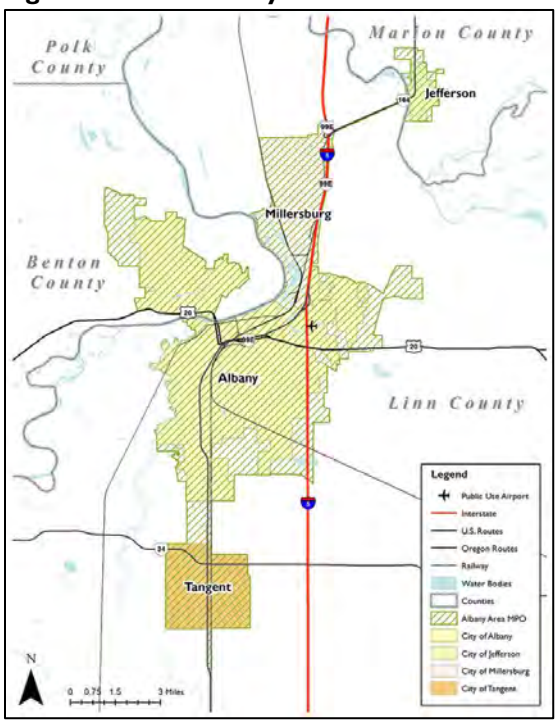
Public transportation services are shaped by the size, character, and type of community they are meant to serve. This chapter provides an overview of communities within AAMPO, including an overview of the MPO's planning framework, an analysis of demographics, and maps of typical travel patterns. As communities grow and change, public transportation must also evolve. This chapter provides an overview of projected growth in population and employment and implications for transit.

Planning Framework

Albany Area MPO

AAMPO is the federally-required regional transportation planning organization for the Albany area. The MPO is fairly new; it was established in 2013 to facilitate distribution of federal transportation dollars and to coordinate local transportation planning. AAMPO covers the Cities of Albany, Jefferson, Millersburg, and Tangent, which cover portions of Linn, Benton, and Marion Counties (Figure 1). AAMPO is staffed by the Oregon Cascades West Council of Governments (OCWCOG), the intergovernmental entity responsible for a variety of community planning, transportation coordination, and services delivery tasks for Lincoln, Benton, and Linn Counties.

Figure 1 Albany Area MPO



Source: DKS Associates

Transit Services in the Albany Area

Numerous transit agencies serve the Albany area. The following terminology is used throughout the document to describe these services.

- **Local fixed-route** refers to service operated entirely within AAMPO communities. This service is operated by ATS. Service is centered around Albany Station, which is served by local and regional buses as well as Amtrak.
- **Local Paratransit** service is provided by Albany Call-A-Ride, and is available to residents of Albany who have a disability or are 60 years of age or older, and to residents of Millersburg who have a disability or are 60 years of age or older. ATS operates Albany Call-A-Ride.
- **Regional** services refers to service operated between AAMPO and neighboring communities. These include fixed routes like the Linn-Benton Loop (Loop) and the Linn Shuttle. ATS operates the Loop but it is funded by multiple agencies. Benton County paratransit (Dial-A-Bus and Corvallis-Albany Connection) also provides regional services that connect North Albany (which is part of the City of Albany but is located in Benton County) and Albany Station.
- **Long-Haul** services include public and private operators who serve Albany Station and travel with limited stop service to places like Lincoln City on the coast, Portland, and other farther-off destinations.

Concurrent Planning Processes

The TDP focuses on public transportation for the general public within AAMPO. Other planning efforts are currently underway that focus on services in neighboring jurisdictions and/or for special populations that have implications for the Albany area.

- **Linn County and Benton County Coordinated Human Services Public Transportation Plans** focus on services for people with low income, older adults and people with disabilities throughout each county. These services have dedicated funding sources and the plans seek strategies to reduce costs by coordinating between health, social service and transportation providers.
- **Linn County and Benton County TSPs** focus on transportation projects in the rural parts of each county including opportunities for addressing public transportation needs.
- **Millersburg TSP** focuses on transportation projects in the City of Millersburg.
- **Lebanon TDP** focuses on the administration and operation of bus service within Lebanon.
- **Corvallis TSP** focuses on transportation projects in the City of Corvallis, including automobile, freight, bicycle and pedestrian transportation investments.
- **Corvallis TDP** focuses on the administration and operation of bus service within Corvallis.

Demographic Analysis

This section reviews market and demographic information for AAMPO, focusing on population and employment distribution, and population groups that typically have the greatest demand for transit services.

Population and Employment

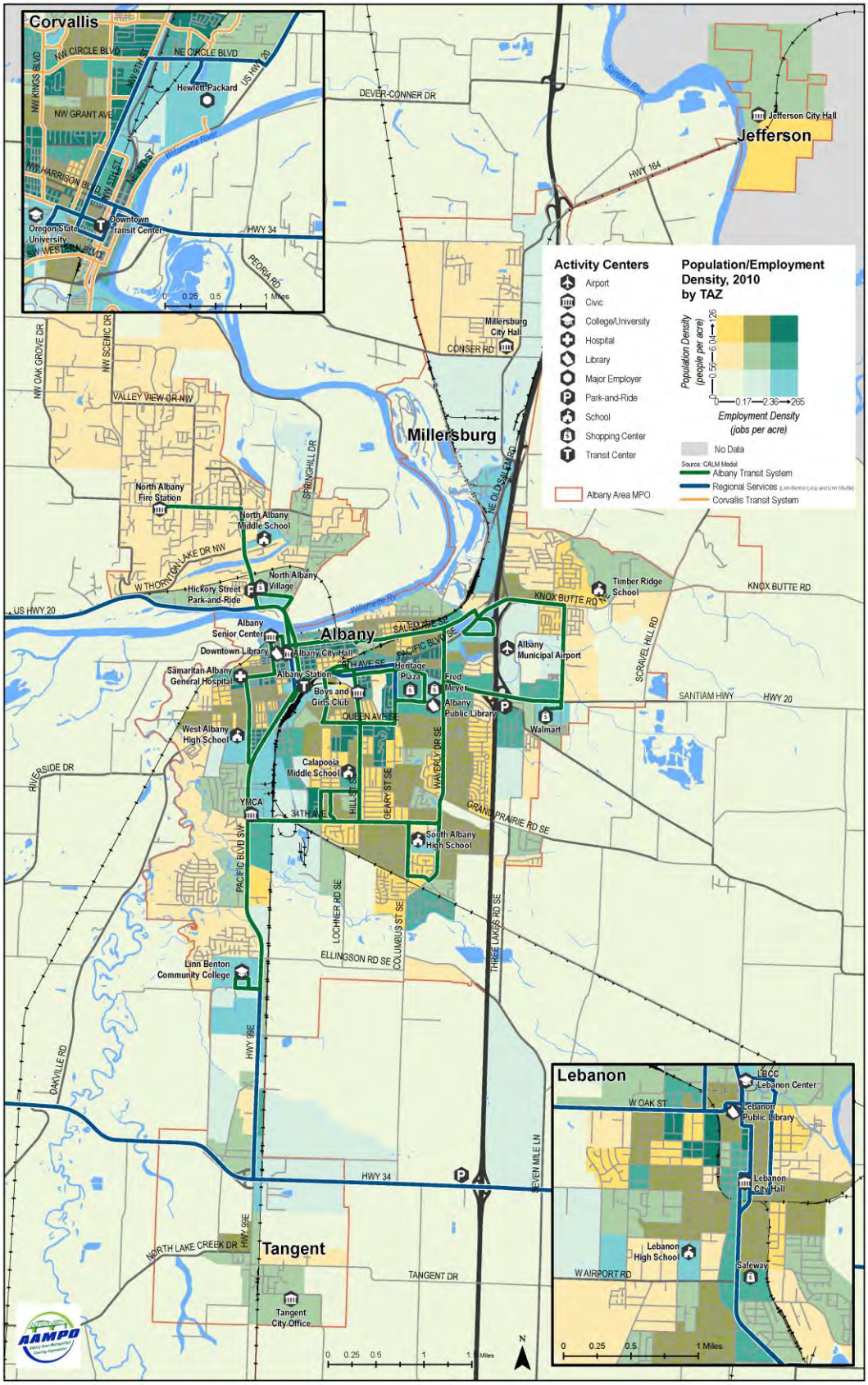
The density of people and jobs determines the types of transit a community can support. In high-density areas, service running on a fixed alignment and schedule (referred to as a fixed-route) can efficiently transport people between origins and destinations. In lower-density areas, curb-to-curb, advance schedule service (referred to as paratransit) may be more cost-effective. This section provides an analysis of population and employment, but ultimately the decision about what defines "cost-effective" – or what types of service to provide in the Albany area – is a local choice based upon funding availability and community preferences.

AAMPO is home to approximately 57,300 residents and supports 22,900 jobs, according to 2010 data from the Corvallis Albany Lebanon Model (CALM). The CALM model is a travel demand model that was developed and is maintained by the Oregon Department of Transportation's (ODOT) Transportation Planning Analysis Unit (TPAU). It estimates vehicle traffic for the years 2010 and 2040 for a region that includes the Corvallis and Albany Area MPOs and Lebanon.

Population is primarily concentrated within the City of Albany. The highest population densities are between Waverly Drive and Marion Street, and between Queen Avenue and 34th Avenue. Other areas with high concentrations of people are the neighborhoods southwest of Downtown Albany along Salem Avenue, and near Knox Butte Road and Goldfish Farm Road. Most employment centers are located outside Albany, thus there are two-thirds fewer jobs in Albany than there are residents, and residential densities are higher than employment densities. Appendix A shows individual maps of the density of people and jobs.

A map of combined population and employment densities is shown in Figure 2. Darker colors indicate higher density of people and/or jobs. Green shading indicates a higher mix of population and employment, whereas yellow or blue shading indicates areas with more population or more employment respectively. Transit service flourishes in places with high population and employment densities, as people travel in all directions between destinations. Places that have high concentrations of jobs, for example, might support peak-only commuter-focused routes while areas with high concentrations of population might support park-and-ride or commuter service, depending on how dispersed peoples' destinations are. The map shows that central Albany — from downtown to Heritage Plaza — has the highest densities. Low-density residential land uses in North Albany and along Knox Butte Road are apparent with their light yellow shading, and the higher employment concentrations in Millersburg, near Heritage Plaza, and along Pacific Highway between Linn Benton Community College (LBCC) and Tangent, show up with blue and light green shading.

Figure 2 Population/Employment Density, 2010



Source: CALM Model

Transit-Dependent Populations

In addition to population and employment density, specific demographic groups tend to rely more upon transit. Youth, older adults, people with low incomes, people with disabilities, and households without access to a vehicle have higher rates of transit use than the general public, and often make up a significant portion of transit ridership. The change in population and the growth or reduction in each of these groups directly affects transit demand.

Between 2000 and 2015, the City of Albany grew by 26% from approximately 41,000 residents to 52,000 residents. This is faster than the overall growth of either Linn County—15%—or Corvallis—11%. During this same time, the region experienced increases in youth, people who identify as Hispanic/Latino, people of color, people below the poverty line, and people with a disability. Table 1 shows the change in population and change for each of these demographic groups within the City of Albany between 2000, 2010, and 2015

Table 1 Demographic Changes (City of Albany)

Demographic Category	Number			Percent			Change (2000-2015)	
	2000	2010	2015	2000	2010	2015	Number	Percent
Total Population	40,852	50,158	51,511	100.0%	100.0%	100.0%	10,659	26.1%
Youth (persons aged 10-17)	4,653	5,428	5,625	11.4%	10.8%	10.9%	972	20.9%
Older Adults (persons aged 65+)	7,509	6,589	7,003	18.4%	13.1%	13.6%	-506	-6.7%
Hispanic/Latino	2,489	5,700	6,008	6.1%	11.4%	11.7%	3,519	141.4%
People of Color	4,491	8,567	9,351	10.9%	17.1%	18.2%	4,860	108.2%
Low-Income Population	4,684	8,291	10,050	11.6%	17.3%	19.8%	5,366	114.6%
Persons with a Disability	7,351	7,773	8,282	19.8%	15.6%	16.3%	931	12.7%
Households Without a Vehicle	1,465	1,415	1,384	9.1%	7.4%	7.0%	-81	-5.5%
Population Speaking English Less than "Well"	655	1,160	540	1.7%	2.6%	1.1%	-115	-17.6%

Notes: People of Color includes non-white persons of one race, persons of two or more races, and Hispanic/Latinos of any race. Low-income population are those earning below the federal poverty level. Disability is for the civilian non-institutionalized population aged 5 years or older. Population speaking English less than "well" is based on persons aged 5 years or older. For data sources, see Appendix A.

Travel Patterns

Transit riders need to travel between the same destinations as the general public. Thus by looking at overall travel patterns and existing transit services, gaps and opportunities can be assessed.

Based on U.S. Census Bureau 2014 Longitudinal Employer-Household Dynamics (LEHD) data, nearly one-third of Albany residents also work in Albany; the rest commute elsewhere. Top work locations outside of Albany include Corvallis and Salem. Several hundred Albany residents also commute to Millersburg (460) or Tangent (212). There is very little work travel happening between Millersburg/Jefferson and Tangent. Table 2 shows top commute flows for AAMPO jurisdictions.

Table 2 Commute Patterns for Albany Area Workers (2014)

Home Location	Work Location						
	Albany	**Corvallis**	**Salem-Keizer**	**Portland**	**Millersburg**	**Tangent**	**Jefferson**
Albany	6,861	3,551	2,188	857	460	212	33
Jefferson	157	49	363	81	16	11	34
Millersburg	168	73	77	0	28	3	4
Tangent	64	118	35	75	3	15	0
Total	**7,250**	**3,791**	**2,663**	**1,013**	**507**	**241**	**71**

Source: U.S. Census Bureau, LEHD.

Mode Split

Residents in the Albany area predominately commute to work by car. Approximately 80% of residents travel to work by driving alone, and fewer than 1% of residents commute by transit. Table 3 shows the mode split for each city within the Albany area, as well as the overall mode split for all four cities combined.

Table 3 Percent Mode Split

Mode	Albany	Millersburg	Jefferson	Tangent	Overall
Drive alone	79.2%	80.9%	83.8%	83.8%	79.5%
Carpool	10.0%	13.3%	3.5%	3.5%	9.9%
Transit	0.6%	0.1%	0.3%	0.3%	0.5%
Bicycle	0.8%	0.5%	0.0%	0.0%	0.8%
Walk	3.4%	0.0%	1.3%	1.3%	3.2%
Taxi, motorcycle or other)	1.7%	0.0%	3.3%	3.3%	1.7%
Work at home	4.3%	5.1%	8.0%	8.0%	4.4%
Total	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

Source: U.S. Census Bureau, ACS 2011-2015 5-Year Estimates Table B08006

Future Growth

The CALM model projects population, jobs, and traffic to the year 2040. The estimates are based on future population and employment growth, changing development patterns, and future growth in traffic through the region.

Population and Employment

By 2040, the Corvallis-Albany area is forecast to grow by approximately 47,000 people, of which 20,000 new residents will be located in the existing AAMPO boundaries. This represents a growth rate of 34% in the Albany area compared to 2010. Employment is expected to increase at a faster pace; 10,000 new jobs are forecast in the Albany area, an increase of almost 50% from 2010.

The data shows that Albany's share of population in the Corvallis-Albany area will increase slightly, while the employment share will decrease by a similar amount. This demonstrates a potential housing-job imbalance in which more jobs will continue to cluster in Corvallis while more housing will remain in Albany. The future transportation network will need to address this imbalance by providing convenient ways to connect residents with employment opportunities.

In total, by 2040 the Albany area may be home to 80,000 people and 34,000 jobs. Most of the residential growth will be concentrated within Albany. Jefferson and Millersburg will add a significant amount of employees (Table 4).

Table 4 Future Population and Employment (2040)

Data	Albany	Millersburg	Jefferson	Tangent	AAMPO
Population	65,122	1,848	6,352	1,585	77,638
Households	26,586	680	2,180	558	31,143
Employees	27,787	3,937	581	1,165	33,974

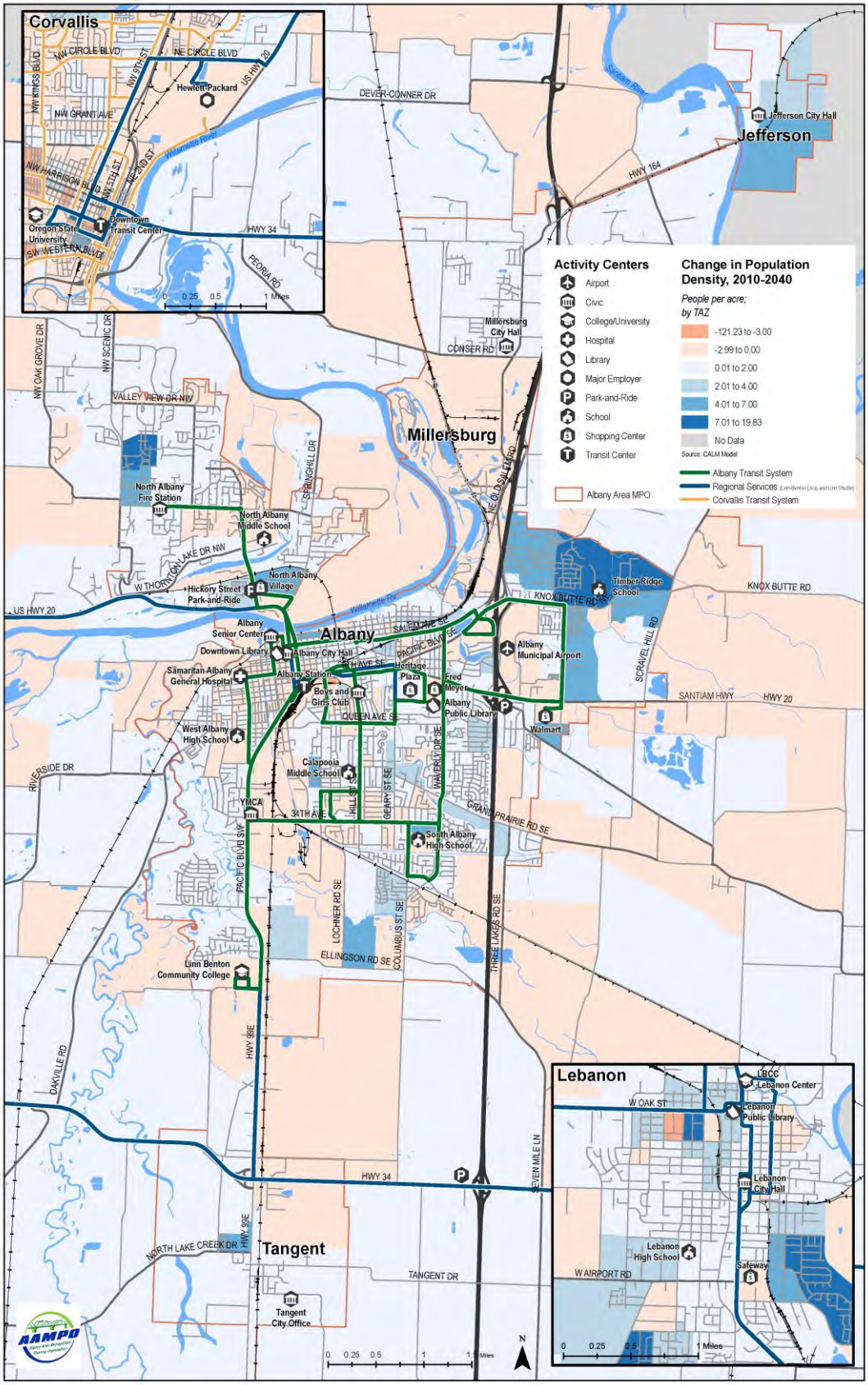
Source: CALM Model

Note: AAMPO values include unincorporated parts of the Albany Area.

Projected growth will be spread fairly evenly throughout the region. The areas in AAMPO with the largest increase in residents per acre are expected to be located on the eastern edge of Albany (near the Timber Ridge School north of Knox Butte Road), south of Albany (near Lochner Road and Ellingson Road), in parts of North Albany, and in the southern half of Jefferson. Areas with the greatest increase in employment density are located in Downtown Albany and south of 9th Avenue between Hill Street and Geary Street. In general, most of these areas are not currently well-served by transit, and should be considered for future transit expansion.

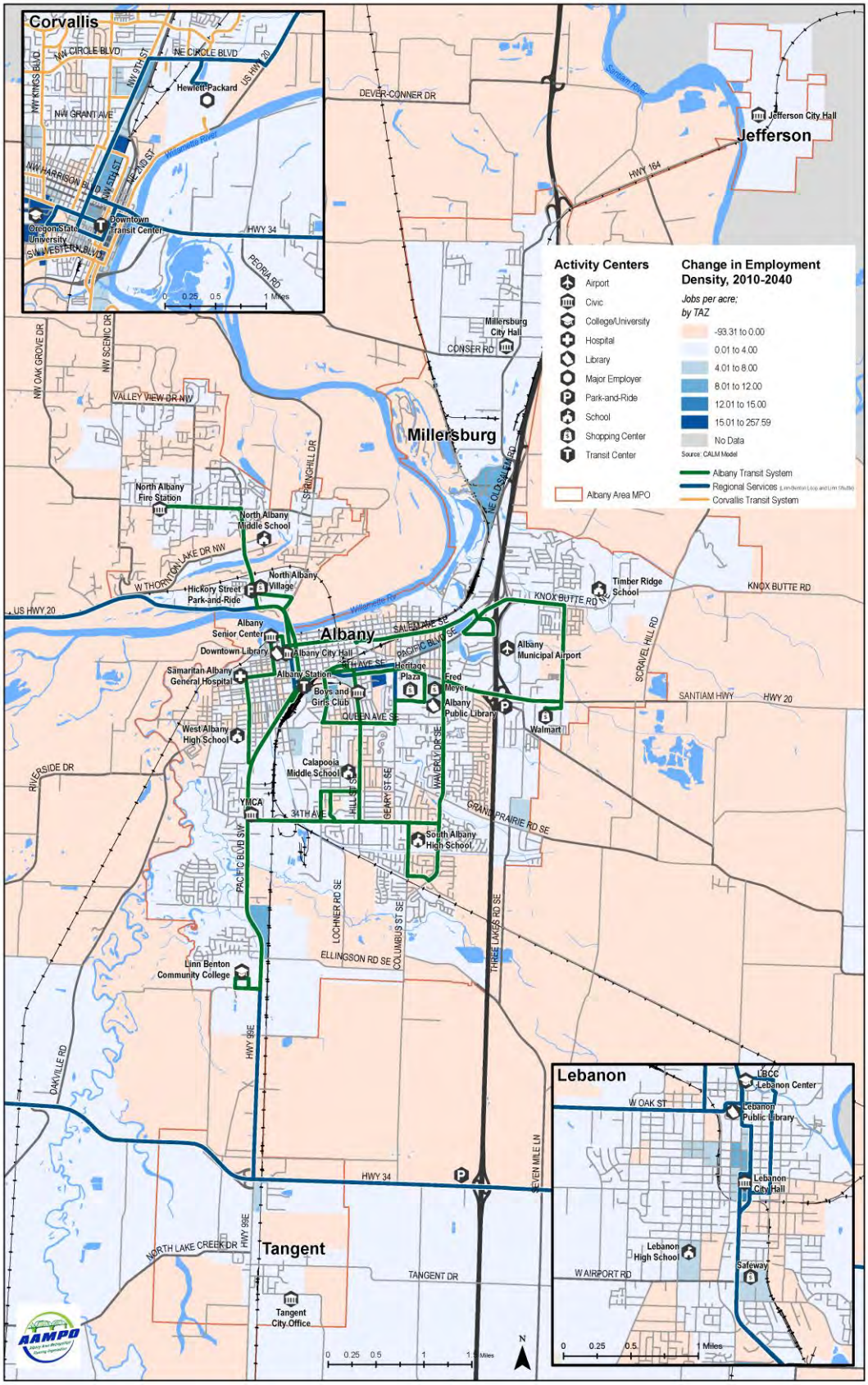
Figure 3 shows the projected change in population density between 2010 and 2040, and Figure 4 shows the projected change in employment density between 2010 and 2040.

Figure 3 Change in Population Density, 2010 to 2040 (Projected)



Source: CALM Model

Figure 4 Change in Employment Density, 2010 to 2040 (Projected)



Source: CALM Model

Regional Travel Patterns

The CALM model estimates 40,000 vehicle trips during the PM peak hour in 2010, of which nearly half (18,450) had a destination or origin in the Albany area. Most travel was within the City of Albany, with 17,480 trips or 95% of trips starting and ending in the city boundaries. In 2040, these values are projected to increase to 57,322 vehicle trips in the CALM model area, 26,540 trips to/from/within AAMPO, and 24,570 trips to/from/within Albany.

Table 5 shows that the total increase in trips in the CALM model will be spread fairly evenly throughout the region. Trips will increase by large percentages in Jefferson and Millersburg, but these communities had a low number of trips as the 2010 base.

Table 5 Vehicle Trip Distribution (PM Peak Hour)

	2010	2040	Change	% Change
CALM Model Trips				
Total CALM Model Trips	40,055	57,322	17,267	43%
AAMPO Trips	18,451	26,544	8,093	44%
Albany Trips	17,480	24,569	7,089	41%
Jefferson Trips	529	1,641	1,112	210%
Millersburg Trips	717	1,312	594	83%
Tangent Trips	686	880	194	28%
Share of Trips				
AAMPO share of CALM	46%	46%	0%	-

Source: CALM Model

Note: Trips refer to any trips that start or end in a geography. The sum of two or more rows of data may result in double-counting of trips.

Albany Area Travel Patterns

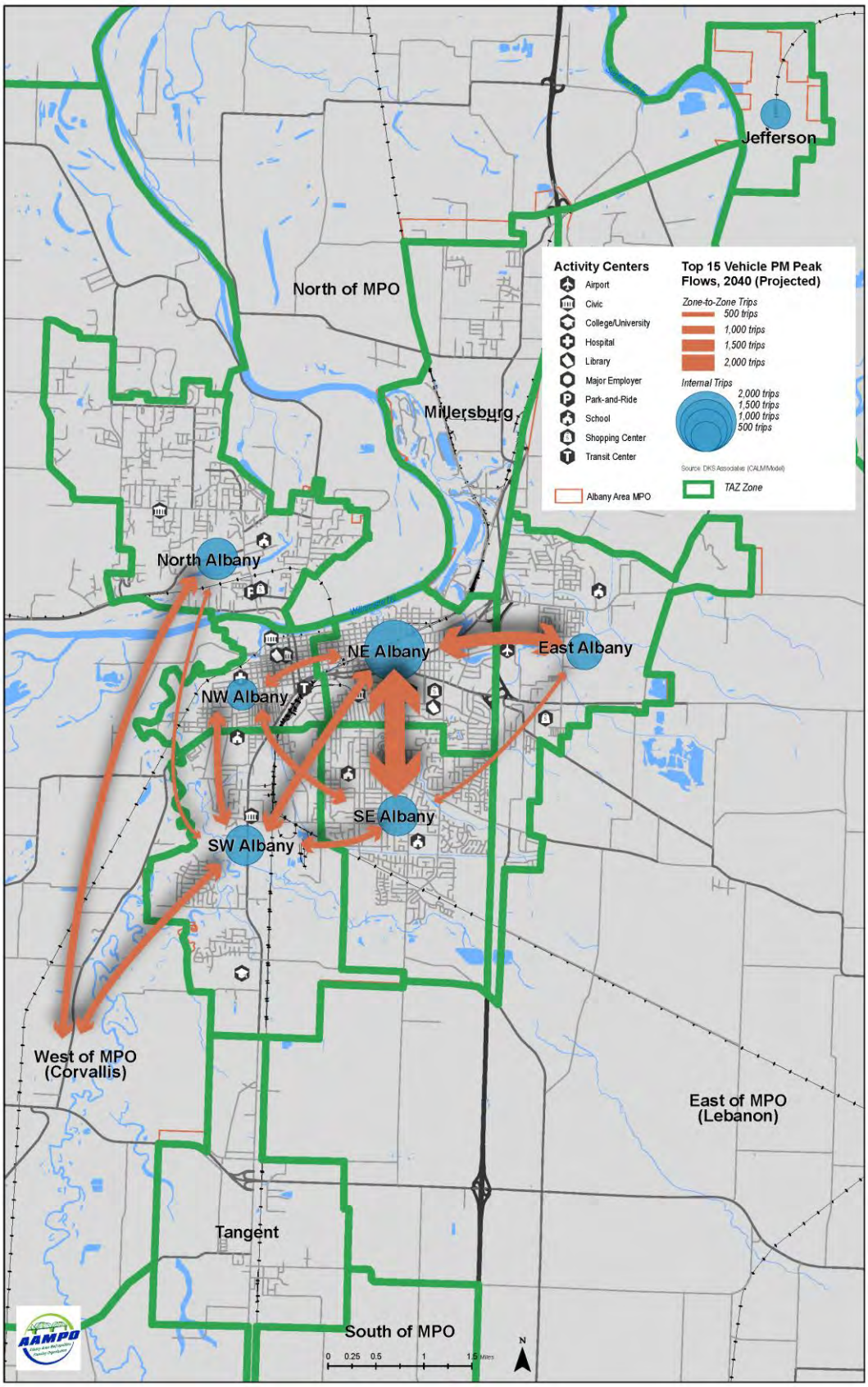
The region is categorized into five primary origin and destination zones[1], with the Albany area MPO zone broken down into nine more detailed zones[2]. Figure 5 shows the top 15 travel flows within the Albany area and between the Albany area and other zones in the CALM area. It excludes any trip pair or flow to/from areas outside the CALM model (i.e. Salem, Portland).

The largest flows within the Albany Area MPO are between NE Albany and SE Albany, within NE Albany, between East and NE Albany, and between NE and SW Albany. These patterns are very similar to the 2010 travel pattern estimates; however, there is expected to be significant growth in travel within Millersburg, Jefferson, and East Albany. While total travel to/from Millersburg, Jefferson, and Tangent will not be among the highest in the Albany area, they will be part of the fastest growing travel flows. For example, travel between Millersburg and Jefferson is projected to grow 449% from 2010 to 2040, from 21 trips to 114 trips per day.

[1] Albany Area MPO, North of MPO, East of MPO (includes Lebanon), South of MPO, and West of MPO (includes Corvallis).

[2] North Albany, East Albany, NW Albany, NE Albany, SW Albany, SE Albany, Jefferson, Millersburg and Tangent. See Appendix A for more details on these Albany Area sub-area zones.

Figure 5 Top 15 Albany Area Daily Travel Flows, 2040 (Projected)



Source: CALM Model

3 Transit Services Today

Numerous transit providers serve the AAMPO region. Services center around Albany Station, which is the second-busiest transit hub in Oregon. This chapter provides an inventory of available services, which have been divided into four categories:

- Local Fixed-Route – Routes running on a set timetable and alignment, operated by ATS.
- Local Paratransit – Service operating curb-to-curb for older adults and people with disabilities through advance scheduling, operated by ATS.
- Regional – Fixed-route service linking areas in the CALM region, including the Loop and the Linn Shuttle, as well as paratransit service between Albany and Corvallis.
- Long-Haul Service – Fixed-route service operating with limited stops from Albany Station to farther-off destinations like Portland and the coast.

After the service inventory, this chapter provides an organizational and performance assessment of the local fixed-route, local paratransit, and regional categories.

Service Inventory

Local Fixed-Route Transit Services

ATS is the local fixed-route service in Albany. ATS operates three routes, Monday through Friday, between 6:30 a.m. and 6:15 p.m. (Table 6).

Table 6 Summary of Primary Albany Area Fixed Routes

Route	Major Destinations	Service Span	Frequency
ATS Route 1 – Early Morning	• Albany Station • LBCC • Samaritan Albany General Hospital	6:30 a.m. – 8:30 a.m.	60 min
ATS Route 2 – Regular East	• Albany Station • Downtown Albany • Samaritan Albany General Hospital • West Albany High School • LBCC	9:00 a.m. – 6:15 p.m.	60 min
ATS Route 3 – Regular West	• Albany Station • Walmart • South Albany High School • Heritage Plaza	9:00 a.m. – 6:15 p.m.	60 min

Route 1 operates in the morning peak from 6:30 a.m. until 8:30 a.m., and serves most of the city, including North Albany, Salem Avenue, Waverly Drive, Hill Street, Downtown Albany, Elm Street, Pacific Boulevard, and LBCC.

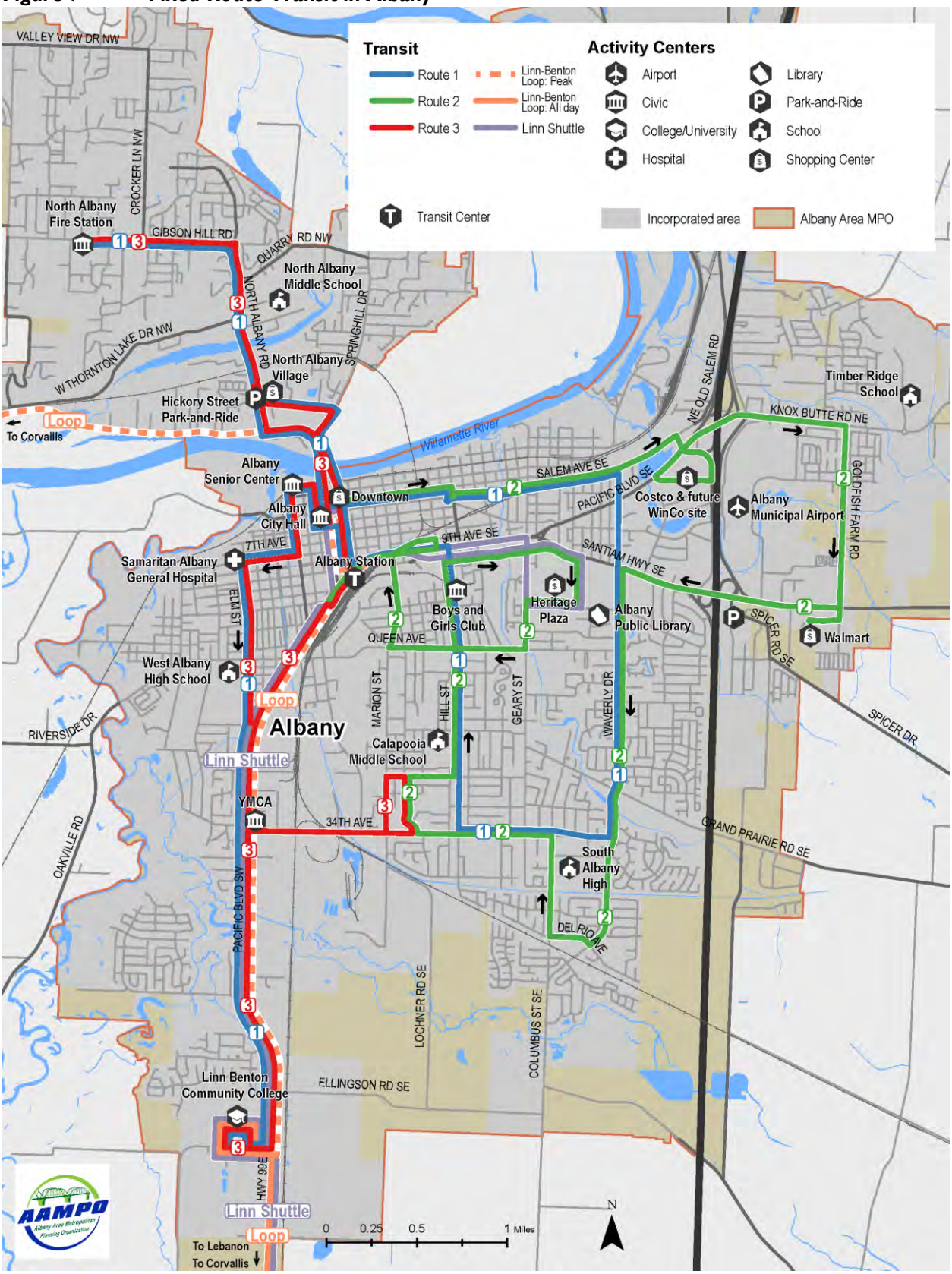
Routes 2 and 3 operate for the remainder of the day from 9 a.m. until 6:15 p.m. Route 2 serves the eastern half of Albany, including Salem Avenue, Killdeer Avenue, Knox Butte Road, Goldfish Farm Road, Walmart, Waverly Drive, South Albany High School, Hill Street, Heritage Plaza, and Queen Avenue. Route 3 serves the western half of Albany, including North Albany, Downtown Albany, Elm Street, Pacific Boulevard, and LBCC. The schedules are designed to provide timed transfers at the start and end (Albany Station), and middle (Jackson Street) of the routes. Route 3 is timed to meet the Loop at LBCC.

Figure 6 Passengers on ATS

Source: Nelson\Nygaard

The routes operate in large, one-way loops, with portions of the routes providing bi-directional service (see Figure 7). These routes provide high coverage throughout most of the city, especially where demand for transit services are highest—such as LBCC, Heritage Plaza, and Walmart. Travel times can be long, due to the looping nature of the routes. During most of the day, ATS operates two buses. Due to the good coverage of the system, this means service only runs hourly.

Figure 7 Fixed-Route Transit in Albany



Local Paratransit Services

Albany Call-A-Ride

The City of Albany provides curb-to-curb ADA paratransit and demand-response service for Albany residents who are at least 60 years old, Millersburg residents who are at least 60 years old, and Albany or Millersburg residents who have a disability. The Albany Call-A-Ride program is staffed primarily by volunteer drivers and dispatchers.

Albany Call-A-Ride operates Monday through Friday, from 6:30 a.m. to 6:30 p.m., and on Saturdays from 8:00 a.m. to 6:00 p.m. Dispatch is available from 9:00 a.m. to 4:00 p.m., Monday through Friday. The service provides trips within Albany, the City of Millersburg, and within ¾-miles of Albany city limits.

Connections are possible through proper scheduling. The Albany Call-A-Ride service can connect riders to the Corvallis-Albany Connection, the Loop, and the Linn Shuttle. Requesting a ride to Albany Station allows access to Amtrak and other intercity transit services.

Senior Medical-Shopper Shuttle

The City of Albany provides a special services deviated fixed-route shuttle. It operates between senior housing locations, retail stores, grocery stores, and medical facilities. The service is open to the general public with no age restrictions, although it is designed around the needs of seniors.

The service operates on Tuesday and Thursday from 8 a.m. to 4:15 p.m., with service approximately every 75 minutes. The shuttle stops at 10 locations within Albany, operating as a large loop. The route allows deviations of up to five minutes off the route. Free transfer slips to ATS are also provided.

Regional Transit Services

A variety of services also operate in Albany. The Loop, Linn Shuttle, and Corvallis to Amtrak Connection provide regional service on fixed routes and schedules. Other services, such as Benton County Dial-A-Bus and Corvallis to Albany Connection provide paratransit connections between Albany and Corvallis. Figure 9 provides an overview of these services.

Regional Fixed Routes

Linn-Benton Loop

The Loop is an intercity service connecting Albany with Corvallis. Service operates Monday through Friday from 6:25 a.m. until 7:00 p.m., and on Saturday from 8:00 a.m. until 6:00 p.m. A one-way fare costs $1.50. Students of LBCC and OSU, and employees of Hewlett-Packard and Samaritan Hospital ride free.

The Loop has multiple variants:

- AM peak (6:25 – 10:00 a.m.): Service runs counterclockwise from Albany Station to Corvallis via Highway 20. The route serves the North Albany Park-and-Ride, Hewlett-

Packard, Oregon State University (OSU), and the Corvallis Downtown Transit Center (DTC). The route then travels back to Albany via Highway 34 and serves LBCC and Albany Station.

- AM and PM express (6:40 a.m. – 8:45 a.m. and 3:00 p.m. – 5:00 p.m.): Service runs express just between DTC and LBCC via Highway 34. It does not serve OSU or any flag stops along Highway 34.
- Midday (10:00 a.m. – 3:00 p.m.): The Loop travels between OSU/DTC and LBCC via Highway 34.
- PM peak (3:00 p.m. – 7:00 p.m.): Service runs identical to the AM peak, but in the opposite (clockwise) direction.
- Saturday (8 a.m. – 6 p.m.): Service runs counterclockwise from Albany Station to Corvallis via Highway 20. The route serves the North Albany Park-and-Ride, 9th Street in Corvallis, and the DTC. The route does not serve Hewlett-Packard or OSU. The route travels back to Albany via Highway 34 and serves LBCC, Albany Station, and Heritage Plaza, before continuing to North Albany Park-and-Ride. Since ATS does not run on weekends, the Loop is the only fixed-route service available to Albany residents on Saturdays.

ATS operates the Loop through a service agreement with the Linn Benton Loop Board. The Board is organized under an intergovernmental agreement[3] between three primary funding partners including AAMPO, Corvallis Area MPO, and LBCC. OSU is a primary funding partner, but did not join the Board. Each organization appoints a representative to the Loop Board, which has the authority to oversee the Loop budget, operating plans, and other activities. The Board is guided by a Technical Advisory Committee (TAC) that includes representatives from additional local and state partners.

[3] See Oregon Revised Statue 190 for information on intergovernmental agreement authority.

Figure 8 Loop at LBCC

Source: Nelson\Nygaard

Linn Shuttle

The Linn Shuttle provides service between Sweet Home, Lebanon, and Albany, with stops at LBCC, Downtown Albany and Heritage Plaza. The Linn Shuttle operates seven roundtrips trips per day between Sweet Home and Albany, and two LBCC Express trips between Lebanon and LBCC that operate when LBCC is in session. The Linn Shuttle operates on a scheduled route except for pre-approved unscheduled stops. It provides service Monday through Friday, 6:25 a.m. to 7:30 p.m. The Linn Shuttle costs $1 per trip.

Corvallis to Amtrak Connector

In August 2017, Benton County—in partnership with ODOT, Benton County Dial-A-Bus, and Amtrak Cascades—began piloting a new regional service called the Corvallis to Amtrak Connector. The one-year pilot provides service between Corvallis and Albany Station. The Corvallis to Amtrak Connector is specifically timed to meet Amtrak bus and train service in both north and southbound directions Thursday through Monday and on holidays. The Connector operates five round trips per day, and has five stops in Corvallis in addition to Albany Station. The service costs $5 per trip. The service differs from the Loop in that it operates on weekends, serves Albany Station on each trip, and charges a fare for OSU and LBCC students (the Loop is fareless for these students)

Regional Curb-to-Curb Services

Benton County Dial-A-Bus

Benton County Dial-A-Bus is a demand-response paratransit service available to residents of Benton County who are 60 years of age or older, or are residents with a documented disability.

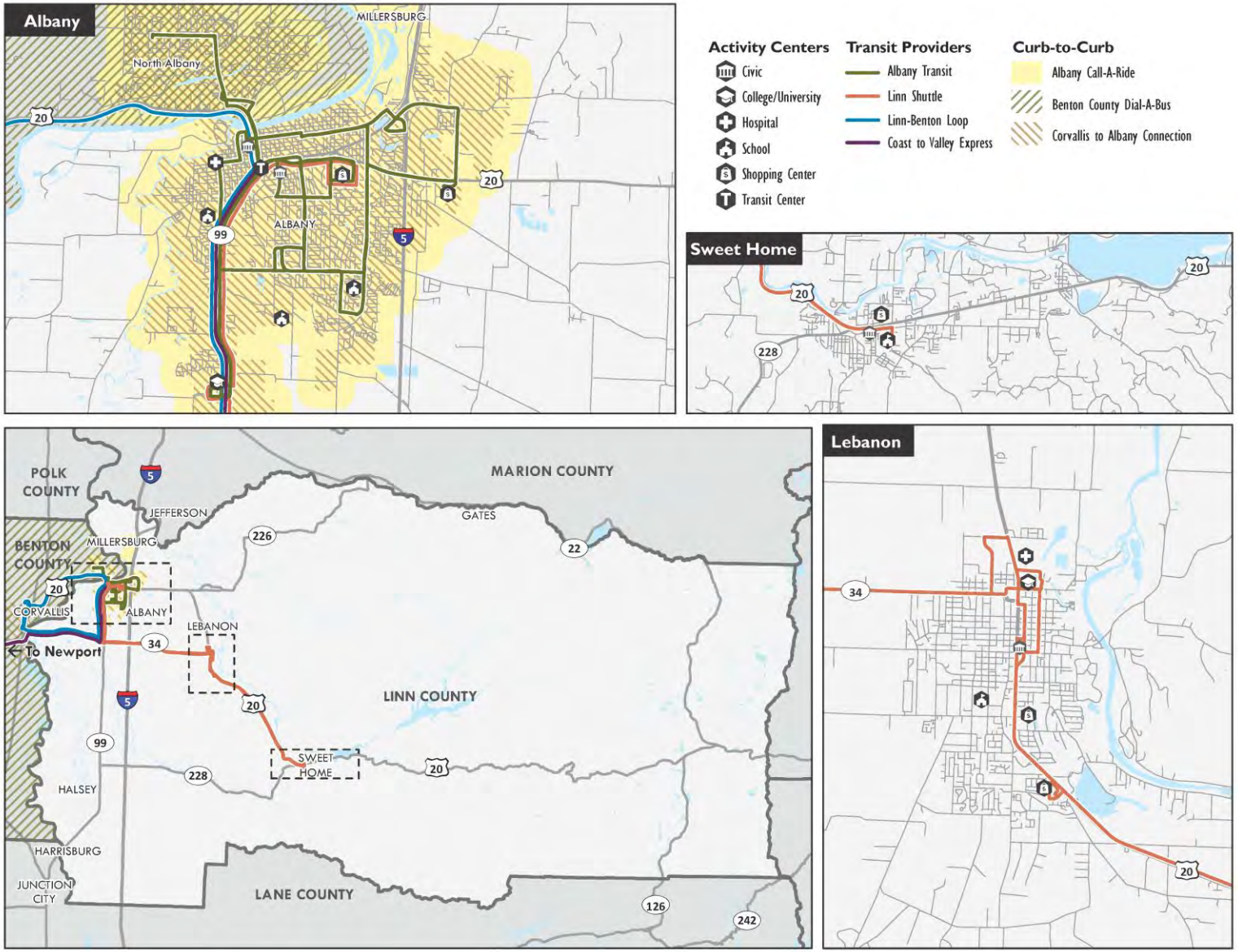
North Albany is the only part of the Albany area that is within Benton County, therefore, residents of North Albany who meet this criteria are eligible to access Benton County Dial-A-Bus.

Benton County Dial-A-Bus is available seven days a week: 8:00 a.m. to 7:00 p.m. on weekdays, 8:30 a.m. to 6:00 p.m. on Saturdays, and 8:30 a.m. to 2:30 p.m. on Sundays. The service is only available for trips within Benton County (passengers can travel from Corvallis to North Albany, and within North Albany, but not from North Albany to other parts of the Albany area). The service costs $4 per ride for trips in North Albany, or to Corvallis. Costs increase to $5.25 for service from North Albany to outlying areas of southern Benton County.

Corvallis to Albany Connection

The Corvallis to Albany Connection provides curb-to-curb service between Corvallis city limits and Albany city limits for people 60 years of age or older and people with a disability who cannot access fixed-route transportation. The service operates three days per week (Monday, Wednesday, and Friday), with five roundtrip runs per day on a set schedule between 7:30 a.m. and 6 p.m. Unlike the Benton County Dial-A-Bus, this service can be used for paratransit service between any location in Corvallis and any location in Albany. For passengers traveling between Corvallis and Millersburg, they would need to transfer to the Albany Call-A-Ride. No paratransit service is available to/from Tangent, Jefferson, or other non-incorporated areas of the Albany area within Linn County. The service costs $4 per ride.

Figure 9 Regional Services in the Albany Area



Long-Haul Regional Services

Albany Station is a major transportation hub for the mid-Willamette Valley. In addition to providing regional connections throughout Linn and Benton Counties, Albany Station is served by long-distance intercity rail and bus services. Amtrak, Cascades POINT, Bolt Bus, and the Coast to Valley Express all serve Albany Station and provide connections to other communities in the Willamette Valley and other locations along the West Coast.

Amtrak

Amtrak provides rail service on two lines: Amtrak Cascades and Coast Starlight. The Amtrak Cascades is a service between Seattle and Eugene, with stops in Tacoma, Olympia, Portland, Salem, and Albany. It operates two daily southbound trips to Eugene (the morning trip originates in Portland, and the afternoon trip originates in Seattle), and two daily northbound trips to Seattle (both originating in Eugene).

The Coast Starlight provides daily service between Seattle and Los Angeles, with stops in Tacoma, Olympia, Portland, Salem, Albany, Eugene, Klamath Falls, Redding, Sacramento, Oakland, San Jose, Santa Barbara, and Burbank, among other stops serving smaller communities.

Cascades POINT

Cascades POINT is a bus service that supplements Amtrak Cascades rail service by providing additional trips between Eugene and Portland. Cascades POINT operates six trips in each direction through Albany Station, seven days a week. Cascades POINT is the designated Amtrak Thruway service for the Willamette Valley.

Bolt Bus

Bolt Bus provides service seven days a week between Seattle, Portland, Albany, and Eugene. Bolt Bus operates one roundtrip between Seattle and Eugene each day, with an additional roundtrip between Portland and Eugene on Tuesday and Wednesday, and an additional three roundtrips between Portland and Eugene Thursday through Monday. Passengers can connect with other Bolt Buses in Portland for more frequent Bolt service to Portland, Bellingham, or Vancouver.

Coast to Valley Express

The Coast to Valley Express is an inter-city service operated by both Benton and Lincoln Counties. The route operates between Albany and Newport along Highway 20 with stops in Corvallis, Philomath, Eddyville, and Toledo. The service operates seven days per week from 6:20 a.m. to 7:30 p.m. with four roundtrips per day, two of which serve the Albany area. In addition to the Corvallis to Amtrak Connector, the Coast to Valley Express is the only service between Corvallis and Albany that operates on Sunday. Trips between Corvallis and Albany cost $2 per trip.

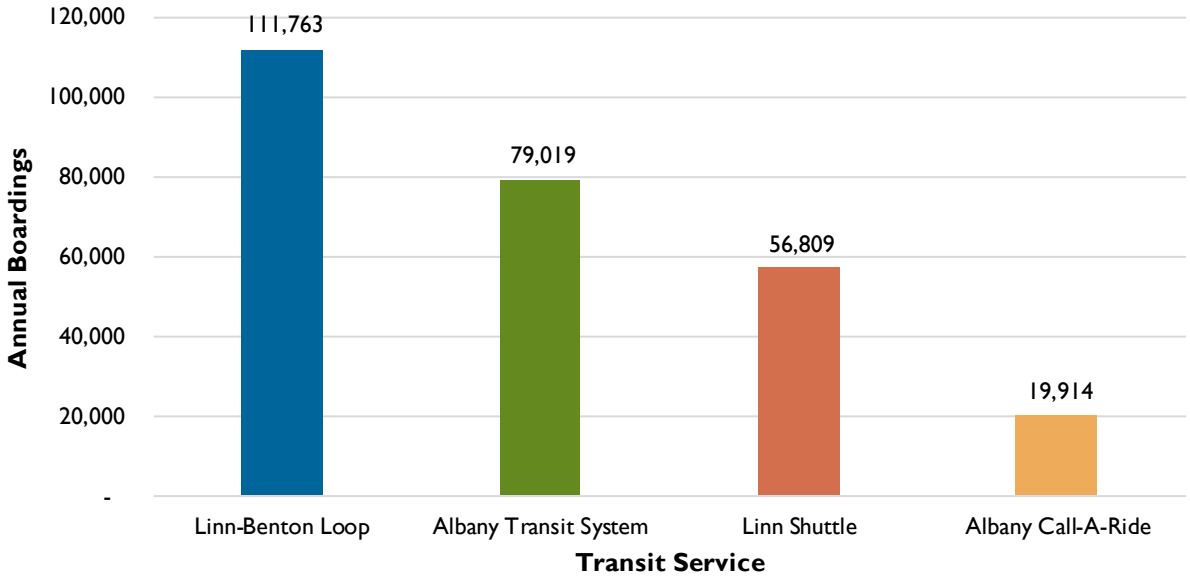
Figure 10 Coast to Valley Express at Corvallis Downtown Transit Center

Source: Nelson\Nygaard

Ridership

Four services are most relevant to AAMPO: ATS fixed route, Albany Call-A-Ride, the Linn Shuttle, and the Loop. Of these four services, the Loop carried the most riders with more than 110,000 passengers in Fiscal Year (FY) 2015-2016. This was more than any of the other services. ATS carried the second most number of passengers, approximately 80,000. The Linn Shuttle carried fewer, approximately 57,000. The Albany Call-A-Ride carried the least passengers—approximately 17,000, or almost one-fifth of ATS' ridership, which is to be expected given its paratransit design. See Figure 11.

Figure 11 Annual Boardings (FY 2015-2016)

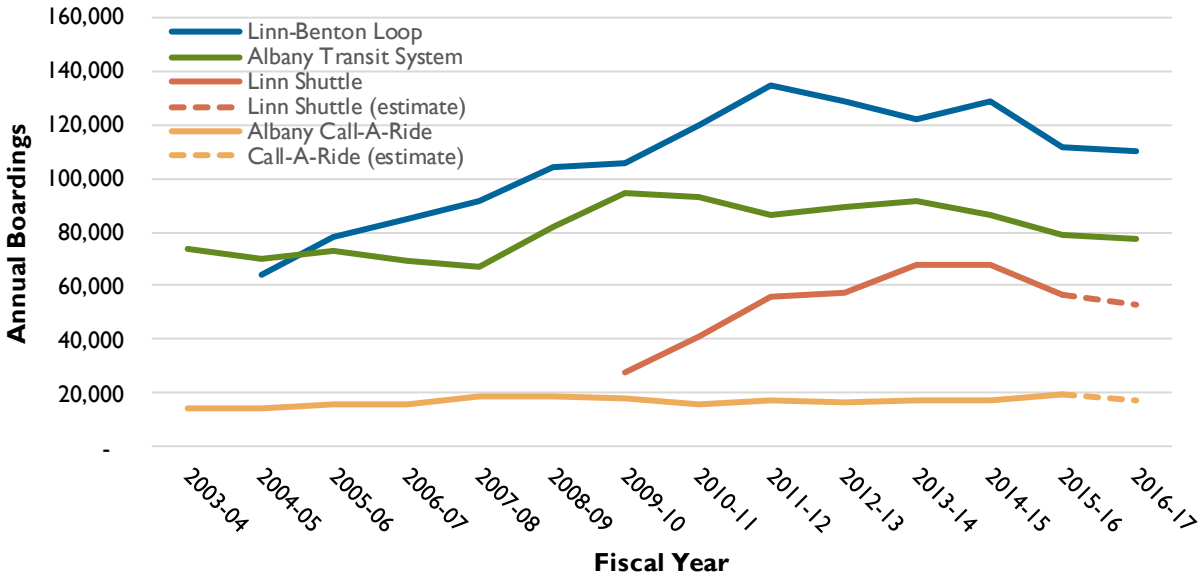


Source: City of Albany; Sweet Home Senior Center.
Note: Albany Call-A-Ride data for FY 2014-2015 includes Medical Shopper Shuttle.

Since FY 2010, the Loop ridership has grown considerably while ATS' ridership has decreased marginally. Figure 12 shows the ridership trends for these services between FY 2004 and FY 2017.

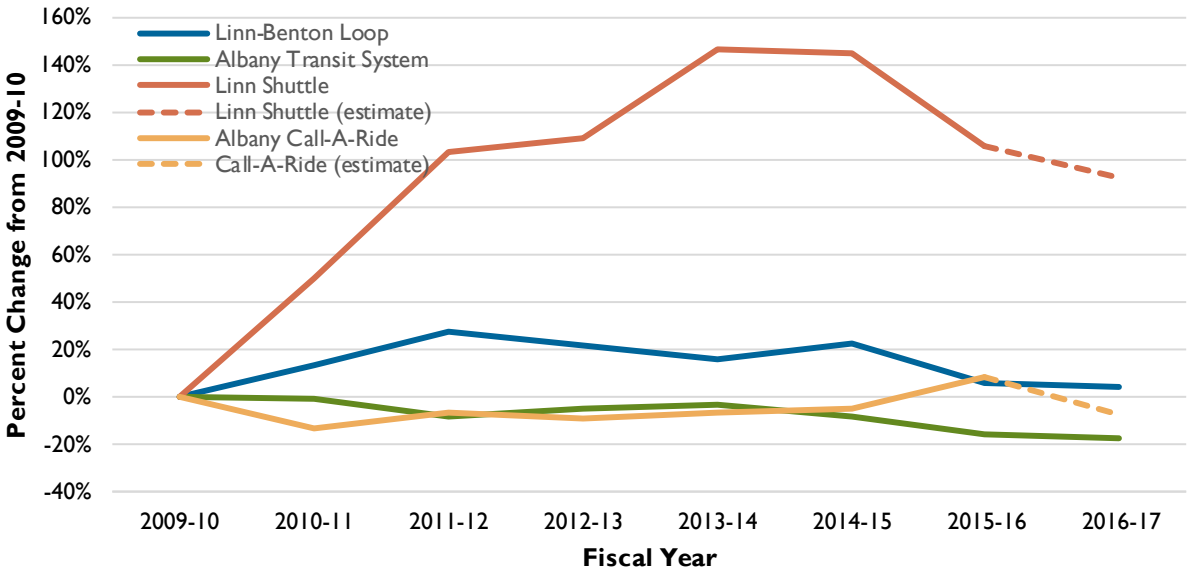
The Linn Shuttle has also experienced notable ridership increases during the past few years, growing from less than 30,000 annual boardings in FY 2010, to more than 60,000 in FY 2015, approaching the ridership of ATS. In the past few years, growth on the Linn Shuttle has outpaced growth on the other three services combined. Figure 13 shows the percent change in boardings from a base of FY 2010.

Figure 12 Annual Boardings by Fiscal Year



Source: City of Albany; Sweet Home Senior Center

Figure 13 Percent Change in Boardings from FY 2010



Source: City of Albany; Sweet Home Senior Center

Funding

The City of Albany Transit Fund provides funding for ATS, Albany Call-A-Ride, and the Loop. Between FY 2006-07 and FY 2015-16 the fund grew by more than $1 million. The FY 2014-15 budget included more than $800,000 for capital investments (Table 7).

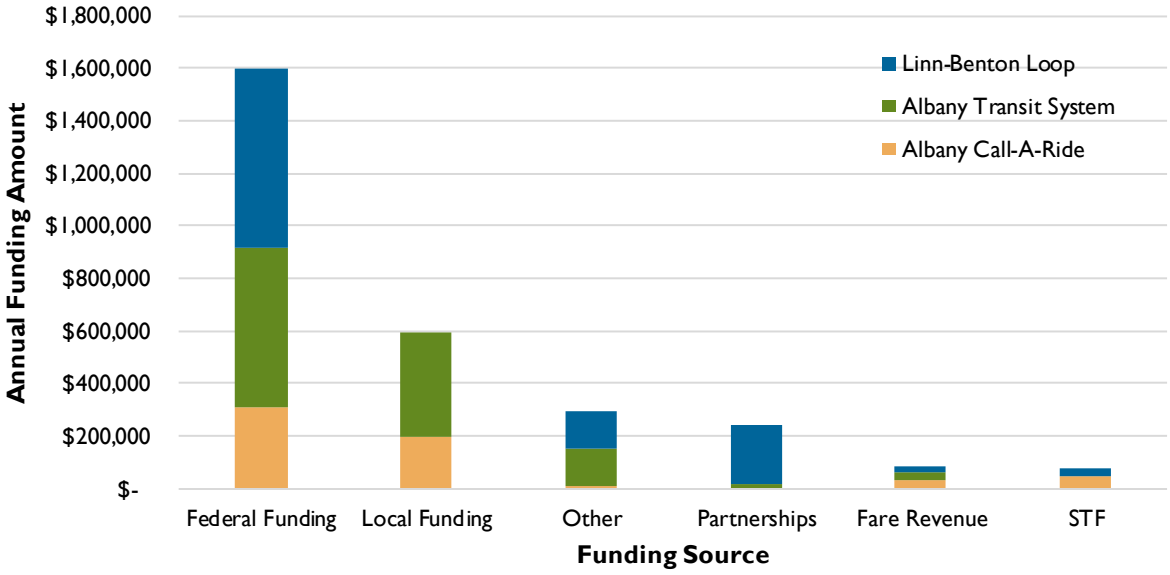
Table 7 City of Albany Public Transit Fund

Fiscal Year	Total Budget
2006-07	$933,377
2007-08	$970,287
2008-09	$1,034,952
2009-10	$1,370,965
2010-11	$1,286,075
2011-12	$1,672,568
2012-13	$1,657,786
2013-14	$1,827,555
2014-15	$2,679,900
2015-16	$2,010,200

Source: City of Albany adopted budget for Fiscal Year 2015/2016

In FY 2016-17, the City's General Fund accounted for approximately one-fifth of the transit fund with federal funds contributing approximately 55%. Federal Transit Administration (FTA) Section 5307, 5309, 5310 are the primary federal resources.[4] Figure 14 highlights the nature and level of funding for each of the services operated by the City of Albany in FY 2016-17. Of particular note is the "partnerships" category. LBCC and OSU both have partnerships and pass programs with the City of Albany. Their contributions provide $223,400 in funding for the Loop, and $18,000 in funding for ATS.[5] These funds offset the operations cost to the City of Albany, and allow students, faculty, and staff at LBCC and OSU to ride for free.

Figure 14 City of Albany Transit Funding, by Source and Service Type, FY 16-17



Source: City of Albany Budget FY 2016-17
Note: Partnerships are pre-paid fare revenue for OSU and LBCC students.

[4] Funding sources include: FTA 5307 (urbanized area); FTA 5310 (elderly and those with a disability); Oregon Special Transportation Fund (STF for elderly, low-income and those with a disability).
[5] In FY 2016-17, ATS received $3,000 from OSU and $15,000 from LBCC. The Loop received $111,700 each from OSU and LBCC.

Capital

Fleet

Albany's transit fleet consists of 13 vehicles. Six vehicles are used for ATS and the Loop. They are 35- and 40-foot buses that range in age between two and 14 years old. Seven vehicles are used for Albany Call-A-Ride service. These vehicles include minibuses and minivans ranging from two to nine years old. Table 8 lists the vehicle inventory, and Figure 15 shows one of the Loop vehicles at LBCC. The vehicle replacement schedule is located in Appendix B. The 2003 Gillig – which is ATS' oldest vehicle – will be replaced with a new vehicle in late 2017 (433-17). Once this vehicle is replaced, the highest priority vehicle for replacement will be the 2005 Gillig, as it will become the oldest vehicle in the fleet.

Table 8 Vehicle Inventory

Vehicle Number	Year	Make	Model	Length
ATS				
455-05	2005	Gillig	Low Floor	35 ft
480-10	2010	ElDorado	EZ Ride II	35 ft
481-15	2015	Gillig	Low Floor	35 ft
The Loop				
428-03	2003	Gillig	Low Floor	40 ft
431-10	2010	ElDorado	EZ Ride II	35 ft
432-15	2014	Gillig	Low Floor	40 ft
Albany Call-A-Ride Vehicles				
830-10	2008	Dodge	G. Caravan	<20 ft.
825-11	2009	Dodge	G. Caravan	<20 ft.
831-14	2010	Ford	Cutaway	25 ft.
823-09	2011	Ford	Cutaway E-450	20 ft.
826-11	2011	Dodge	G. Caravan	<20 ft.
827-08	2011	Chevy	Uplander	<20 ft.
820-11	2015	Dodge	G. Caravan	<20 ft.

Source: Albany Transit System

Figure 15 Loop Vehicle at LBCC

Source; Nelson\Nygaard

Facilities

The primary transit facility in Albany is Albany Station (shown in Figure 16). It not only serves as the transit center for Albany, but also as a major transportation hub for the mid-Willamette Valley, providing connections for regional and intercity services. For ATS, Albany Station is where passengers transfer between routes, where bus routes start and end, and where operators take their break.

Figure 16 Albany Station

Source; Nelson\Nygaard

Park-and-Rides

Three park-and-ride facilities are located in the Albany area. These are recognized in the ODOT Transportation Options inventory and include:

- The North Albany Park-and-Ride—located on Hickory Street west of North Albany Road—has 30 spaces. The park-and-ride is served by Routes 1, 3, and the Loop.
- The Spicer Road Park-and-Ride—is located at the Phoenix Inn near Santiam Highway and I-5—is served by the Hut Airport Shuttle.
- The South Albany Park-and-Ride is composed of two lots just west of Highway 34 and I-5. It primarily serves carpools and vanpools.

In 2017, OCWCOG initiated a Regional Park-and-Ride Plan, in partnership with ODOT, which will provide greater detail on the condition and use of these facilities, as well as potential amenities for existing and future Park and Ride sites, and suggested priority locations for future site development.

Vehicle Maintenance Facility

Buses are currently stored at a facility located at the Fire Station on 34th Avenue near Marion Street. ATS has identified the need to build a transit-specific maintenance facility as the present location lacks capacity for fleet expansion. The City of Albany is currently investigating options for building a new maintenance facility. Two sites have been selected and the City has begun saving funds to purchase a property.

Inventory of Stops and Shelters

As of July 2017, ATS served 83 stops in Albany. Of these stops, 17 had both shelters and benches. A stop assessment conducted in January 2013 showed that all bus stops, except for three, are in good condition. The three benches and shelters in poor condition were installed in 1999 and are located along 34th Avenue. See Appendix B for an inventory of bus stop amenities and the results from the 2013 stop assessment.

Bus stops not only serve as the point where passengers board or alight vehicles; they provide service information for passengers. In Albany, all bus stop signs indicate the routes that serve that stop, but only stops located at a timepoint have additional schedule information for each route. Figure 17 presents examples of a stop without a bench or shelter (left), and a stop with a bench, shelter, and schedule information (right).

Figure 17 ATS Bus Stops

Source: Nelson\Nygaard

Technology

ATS currently employs several technologies in its operations. ATS has an onboard security video system on new vehicles. ATS uses RouteMatch computer-aided scheduling and dispatch software to schedule and track paratransit trips. ODOT maintains the ATS General Transit Feed Specification (GTFS) data at no local cost to support online trip planning.

Fares

Each of the transit services in the Albany area use a different fare structure (Table 9).

Table 9 Fares for Albany Area Transit Services

Fare Type	Single-Ride Ticket	10-Ride Card	20-Coupon Book	Monthly Pass
ATS (Routes 1, 2 and 3)				
Adult (18–59 years)	$1.00	-	$17.00	$30.00
Senior/Youth/Disabled	$0.50	-	$8.50	$15.00
Children (5 and younger)	Free	-	-	-
LBCC / OSU ID	Free	-	-	-
Loop				
Adult	$1.50	-	$25.50	$45.00
Senior/Youth/Disabled	$0.75	-	$12.75	$22.50
LBCC / OSU / HP / Samaritan Hospital ID	Free	-	-	-
Albany Call-A-Ride				
All passengers	$2.00	-	-	-
Linn Shuttle				
Standard	$1.00	$10.00	-	-
LBCC ID	Free	-	-	-

Note: Seniors are classified as people aged 60 or above. Youth are aged 6 through 17.

The single-ride fare on ATS is $1.00 for adults aged 18–59, and $0.50 for seniors (60 and older), youth (6–17) or disabled individuals. Children 5 and younger ride free. Coupon Books are also available for passengers who want to purchase 20 single-ride tickets in bulk. Passengers may also purchase a monthly pass that is valid for unlimited rides in one month. A monthly pass costs the same as 30 single trips.

Passengers who travel on the Loop pay $1.50 (or $0.75 for reduced fares) to travel between Albany and Corvallis. Passengers who travel on the Loop during midday service can use the Loop fare to transfer for free to Route 3 at LBCC if their final destination is Albany Station. Passengers who start at Albany Station and transfer to the Loop at LBCC only have to pay an additional $0.50 ($0.25 for reduced fares) to continue to Corvallis. Passengers who transfer to/from the Loop but do not start or end their trip at Albany Station are not entitled the free transfer and are required to pay the additional fare.

Albany Call-A-Ride and the Linn Shuttle fare structures are simpler than ATS and the Loop. Each Albany Call-A-Ride ride is $2.00, and each Linn Shuttle ride is $1.00. The Linn Shuttle provides 10-ride cards, but this costs the same as 10 single-ride tickets.

Passengers with an ID card from LBCC can ride for free on ATS, the Loop and the Linn Shuttle[6]. Passengers with OSU IDs can ride for free on ATS and the Loop. Passengers with a Samaritan Health Services or Hewlett-Packard ID card, ride for free on the Loop only.

[6] Passengers showing a LBCC ID card must have a valid term sticker to board for free.

4 Community Outreach

Community Outreach in the Albany area included an on-board passenger survey, a community survey, and discussions with community groups and bus operators. The sections provide key findings from these efforts.

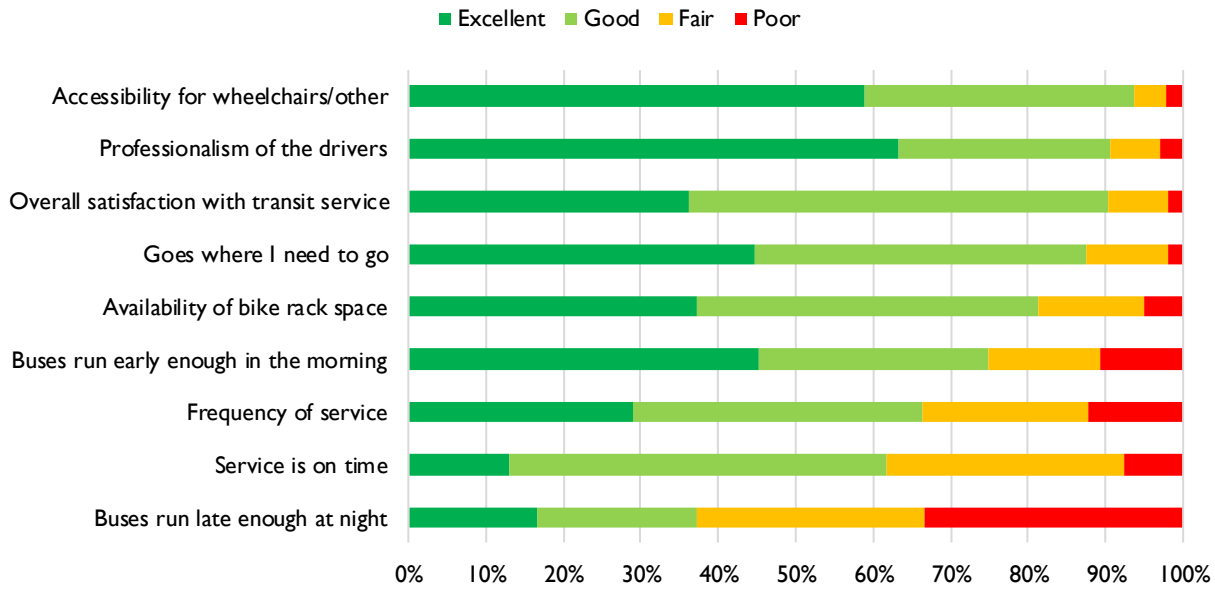
Transit Surveys

On-Board Passenger Survey

The passenger survey was conducted in fall 2014, and was available for passengers as a self-administered survey on all ATS routes, the Loop, and the Linn Shuttle. Passengers were asked to complete the questionnaire while on board the bus. The survey was conducted over a period of four days. Based on ridership data collected on those same days, it is estimated a survey was completed for approximately 29% of boardings.

The responses for ATS passengers (see Figure 18) found that people are generally satisfied with many aspects of ATS, including accessibility, coverage, and bike rack availability. At least a quarter of respondents rated morning start time, frequency of service, and on-time performance as fair or poor. The area of most dissatisfaction for passengers was service at night, with 63% of respondents believing service was not late enough.

Figure 18 Rating of Service (ATS)

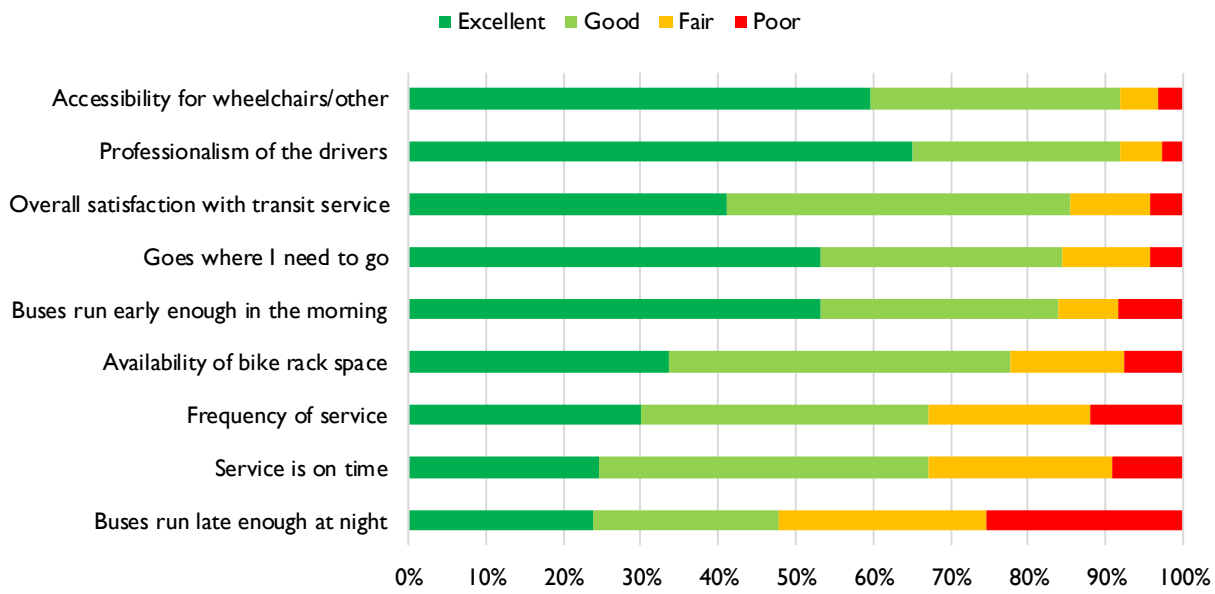


Source: Fall 2014 On-Board Survey; 107 responses

Linn-Benton Loop passengers has similar levels of satisfaction with the service (see Figure 19). However, passengers on the Linn-Benton Loop tended to rate service marginally better than ATS

passengers. This difference is minimal and overall there were no major differences between the two services.

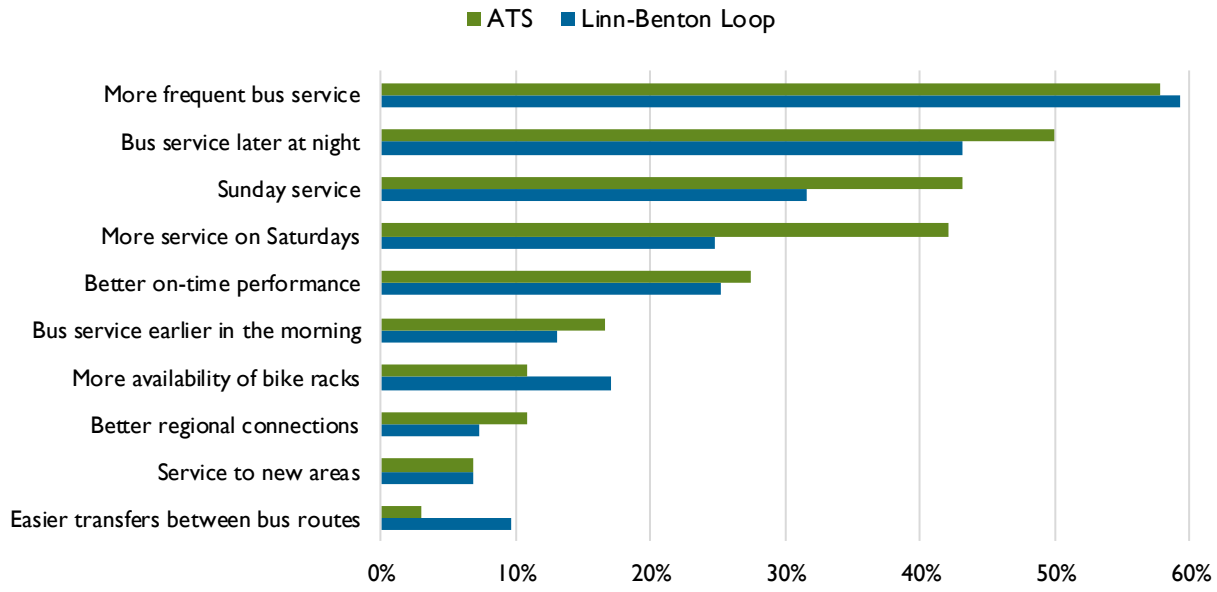
Figure 19 Rating of Service (Linn-Benton Loop)



Source; Fall 2014 On-Board Survey; 221 responses

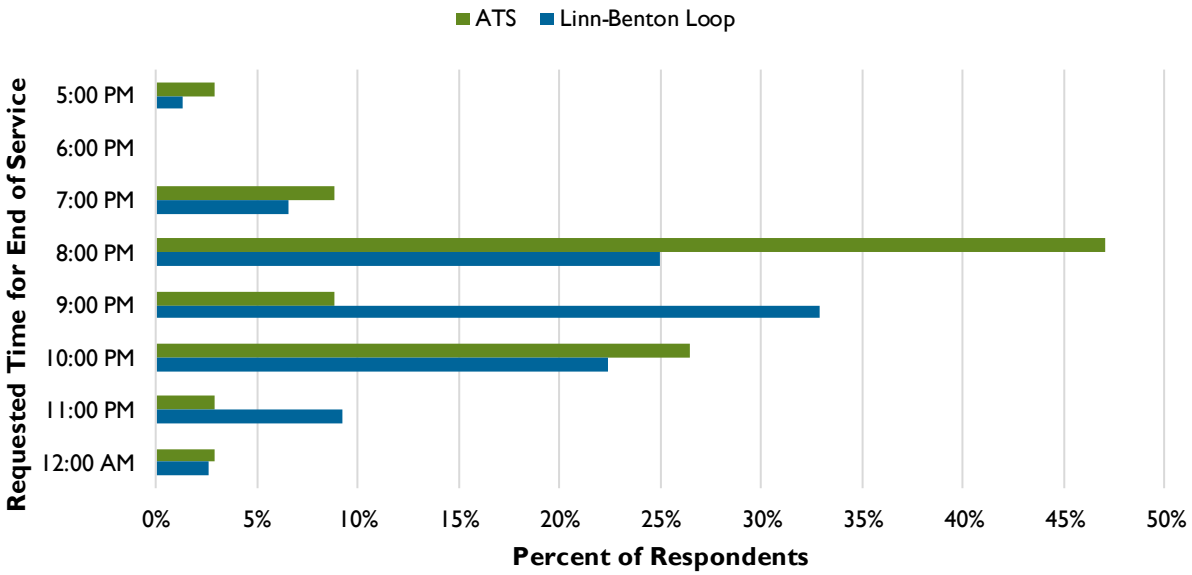
An additional question on the survey asked respondents to select their top three service improvements out of a list of 10 (see Figure 20). The top improvements identified by ATS and Linn-Benton Loop passengers were more frequent service, service operating later in the day, service on weekends, and improved on-time performance. Of the passengers who said they wanted service later at night, the majority indicated they wanted service to end between 7 p.m. and 10 p.m., with the most respondents indicating 8 p.m. for ATS service, and 9 p.m. for Linn-Benton Loop (see Figure 21).

Figure 20 Top Service Improvements (ATS and Linn-Benton Loop)



Source: Fall 2014 On-Board Survey; 102 ATS responses and 206 Loop responses

Figure 21 Requested Time for End of Service (ATS)



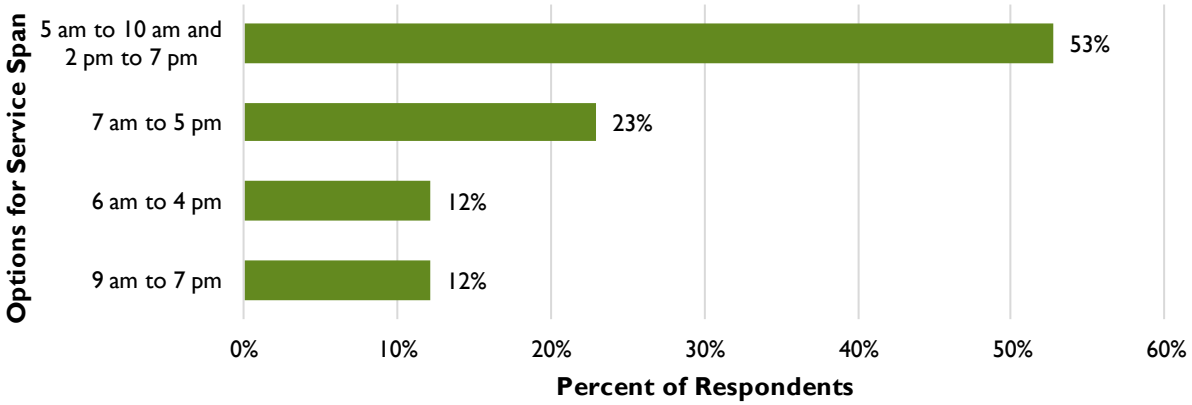
Source: Fall 2014 On-Board Survey; 34 ATS responses and 76 Loop responses

Community Survey

In June 2017, an additional passenger survey was conducted at Albany Station, on-board buses, and with community groups in rural communities. The survey asked about various topics, including some specifically regarding transit services. The survey was intended to give direction to ATS about specific operational considerations, such as span of service.

Figure 22 shows the responses to a question regarding the desired span of service with a limitation of only 10 hours per day. More than half of respondents wanted to see service begin earlier and operate later with a service gap midday. Few respondents wanted service to end by 4 p.m. or begin after 9 a.m.

Figure 22 Preferred Span of Service



Source: June 2017 Albany Outreach Survey; 74 responses

Community Input

In addition to surveys with passengers and the public, the project team met with bus operators, Albany area transportation stakeholders, and conducted focus groups. Each of these groups provided their thoughts on what methods and strategies would improve service, and what the community's existing and future needs are.

Figure 23 ATS Operator

Source: Nelson\Nygaard

- **Low frequency and limited span of service are primary limitations of the system.** A major concern with the existing system is that headways are too long, service does not operate on the weekends, and service starts too late in the morning and ends too early in the evenings. There was an understanding that these issues are a major factor that limits transit's usefulness to more people, and limits potential for ridership growth.
- **Traffic delay and congestion were noted as primary concerns.** Particularly, railroad crossings were identified as causing the most delay. All bus routes in Albany cross major railroad crossings and can wait between 10 and 20 minutes when a train passes. Because the routes cycle in 60 minutes, this can cause delays for a few trips before operators can get back on schedule. On Salem Road, a bus is delayed two or three times each month, while the crossing on 34th Street occurs about once every couple of months.
- **Fares can be complicated and difficult to understand.** Bus operators noted that many passengers are confused by the fare structure. As Albany grows and the transit service expands, the operators suggested a new or modified fare structure should be implemented to simplify the payment process.
- **A housing-jobs imbalance in the Corvallis-Albany area is resulting in longer commutes and more population growth in Albany.** A combination of development

regulations and housing costs has pushed people from Corvallis into Albany to live, despite their employment remaining in Corvallis. This results in longer commutes and trip destination pairs that cannot be served conveniently by transit. Over the next 25 years, the transit system will need to address this and change accordingly.

- **Pedestrian access and safety are important factors that need to be addressed to ensure adequate access to transit, and improve the overall transportation network.** Many stakeholders noted that multimodal solutions are needed for Albany to address its future congestion issues. Some predicted that as congestion increases, automobile drivers may seek unsanctioned routes through neighborhoods to bypass the congestion. This may hinder safety and comfort for people who travel by foot or bicycle (many of whom also use transit for their mobility). Therefore, the stakeholders indicated a need for improved crosswalks and sidewalk connectivity to increase roadway safety, make more areas of the city accessible to the population, and to enhance the walkability of commercial districts. Despite these needs, many questioned the sustainability of financing for these investments. A secure source of funding is necessary to repair, maintain, and construct the transportation network that many desire.
- **Smaller regional communities depend upon services in Albany for health care, education, shopping, and other personal needs.** Albany is a popular destination for basic shopping needs with the Heritage Mall, Fred Meyer, Costco, and Walmart. The new Albany WinCo is expected to increase regional travel demand into Albany. Additionally, many people travel into Albany for medical appointments, general health care needs, and educational opportunities at LBCC.
- **Some members of the community have limited English proficiency and may need information presented in another language.** Stakeholders identified multi-lingual bus operators, signage, and information provided in more than one language and displaying information with universal imagery as a way of providing improved access to people with limited English proficiency.

5 Operations Analysis

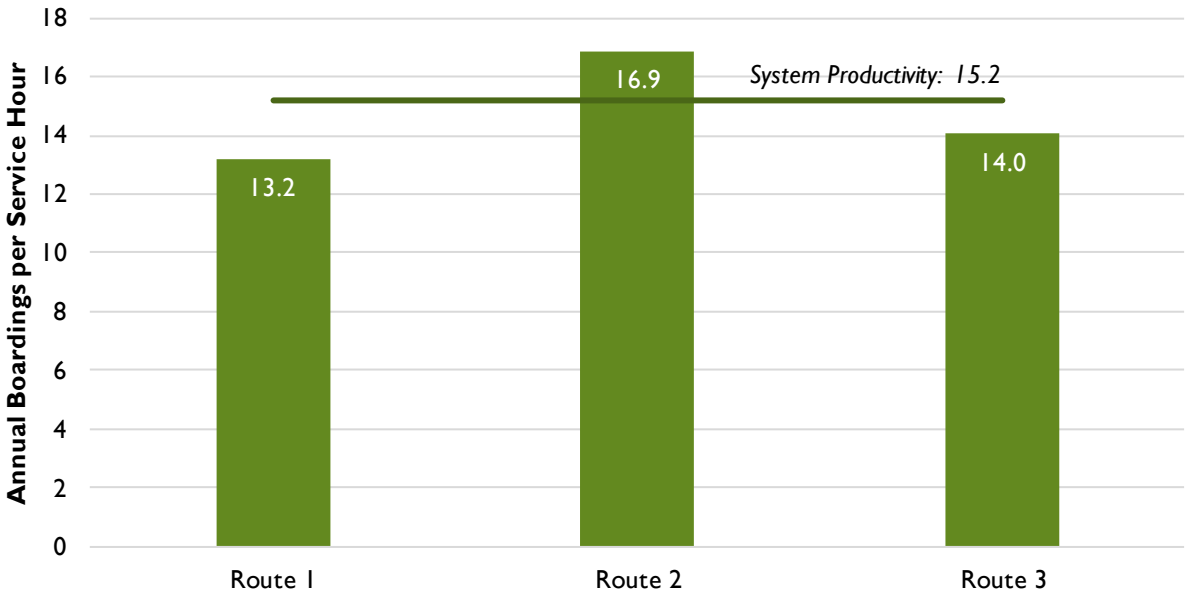
This chapter provides an in-depth review of ATS, the Loop, Albany Call-A-Ride, and the Linn Shuttle. Additional detailed data on each route are provided in Appendix C.

System Assessment and Historical Trends

Albany Transit System

With approximately 80,000 annual boardings, and 5,100 annual service hours, ATS' productivity is approximately 15 boardings per hour. Route 2 is the most productive route, with approximately 17 boardings per hour. Route 1 is the least productive, at approximately 13 boardings per hour. Figure 24 shows productivity by route, with the system productivity overlaid on top for comparison.

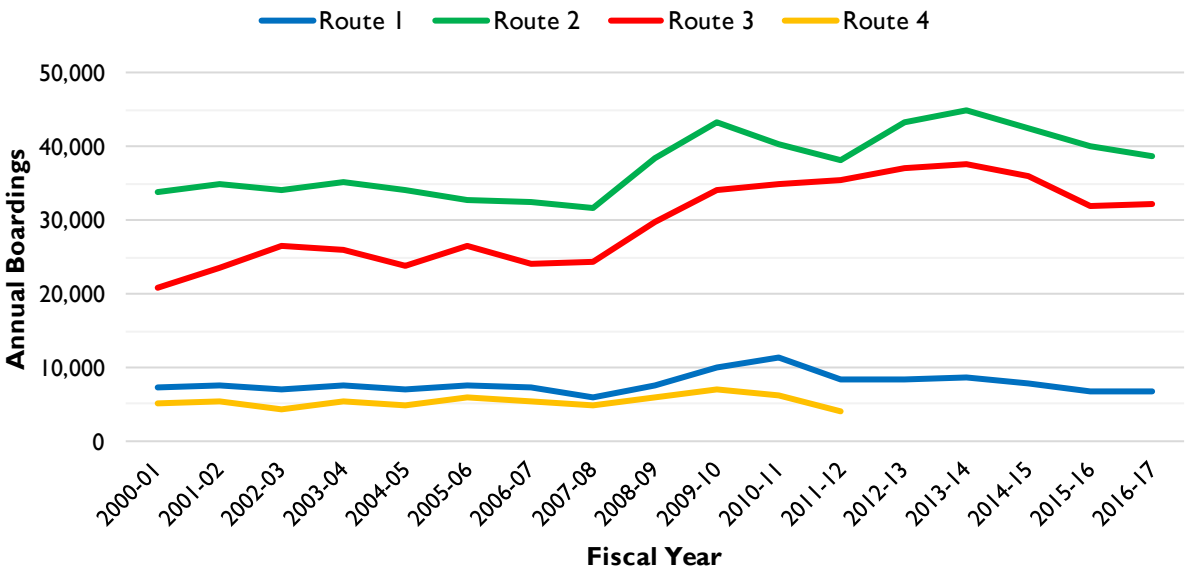
Figure 24 Annual ATS Productivity (Boardings per Service Hour), by Route



Source: City of Albany; based on FY 2016-17 data

As the system-level ridership trends from Chapter 3 show, ridership on ATS has grown over the past decade, but has slowed in recent years. Figure 25 shows the ridership on all ATS routes from FY 2000–2001 through 2016–17. Route 4, which operated as the late afternoon/early evening route was discontinued in March 2012 and replaced with a longer span of service on Routes 2 and 3.

Figure 25 Annual ATS Ridership, by Route



Source: City of Albany

Figure 26, Figure 27 and Figure 28 show the ridership by stop for Routes 1, 2, and 3.

Figure 26 Route 1 Ridership by Stop (Fall 2014)

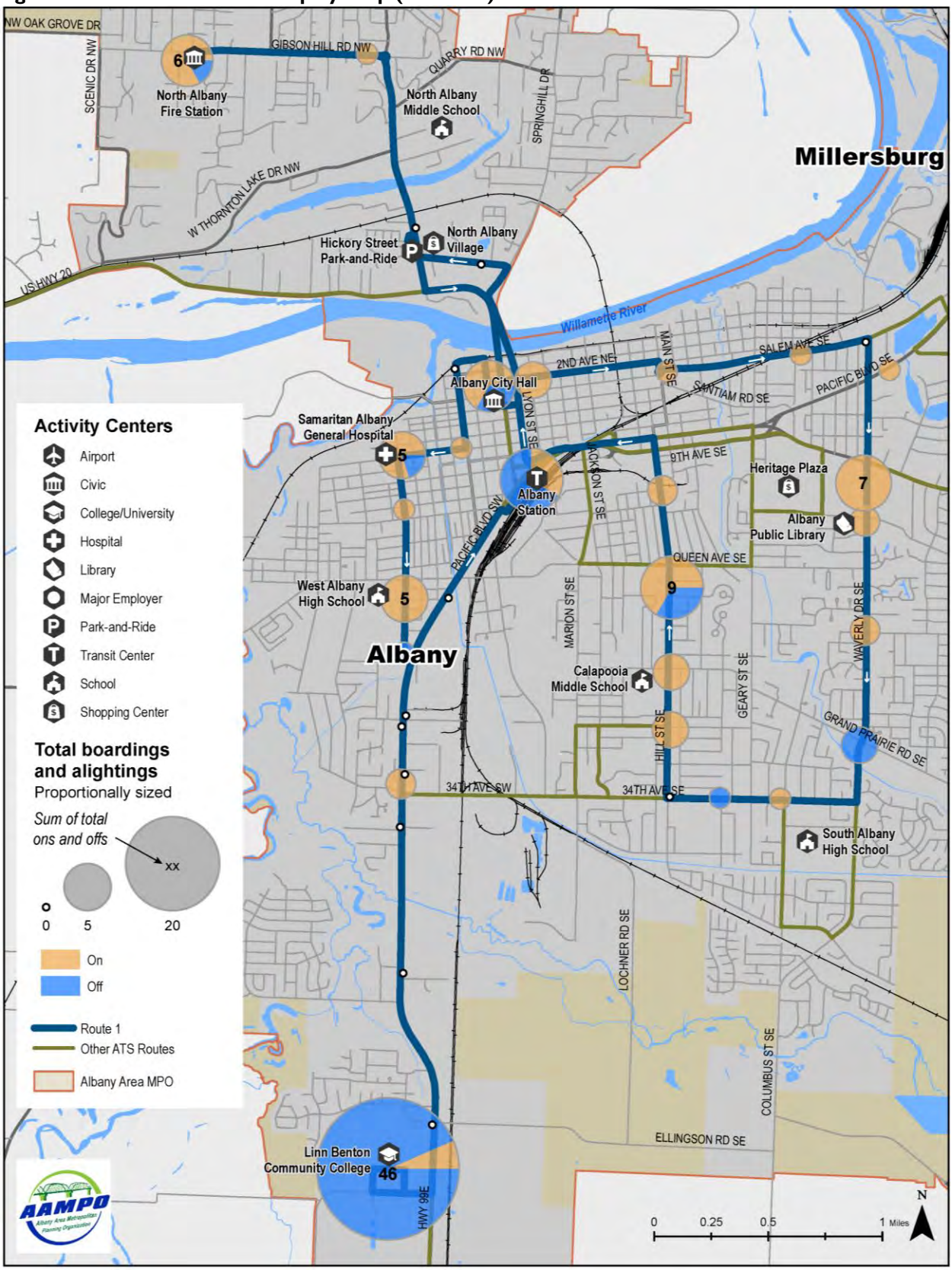


Figure 27 Route 2 Ridership by Stop (Fall 2014)

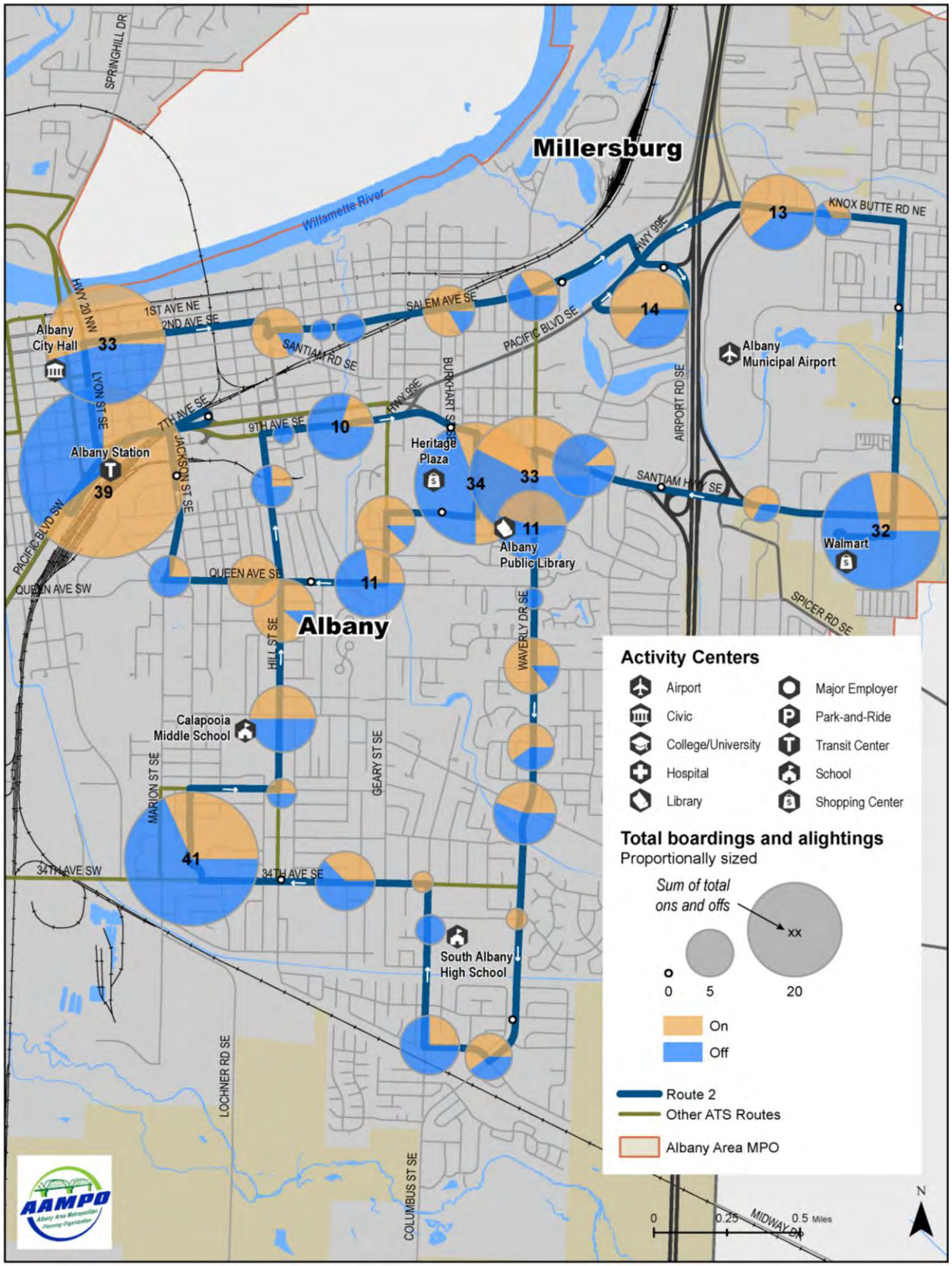
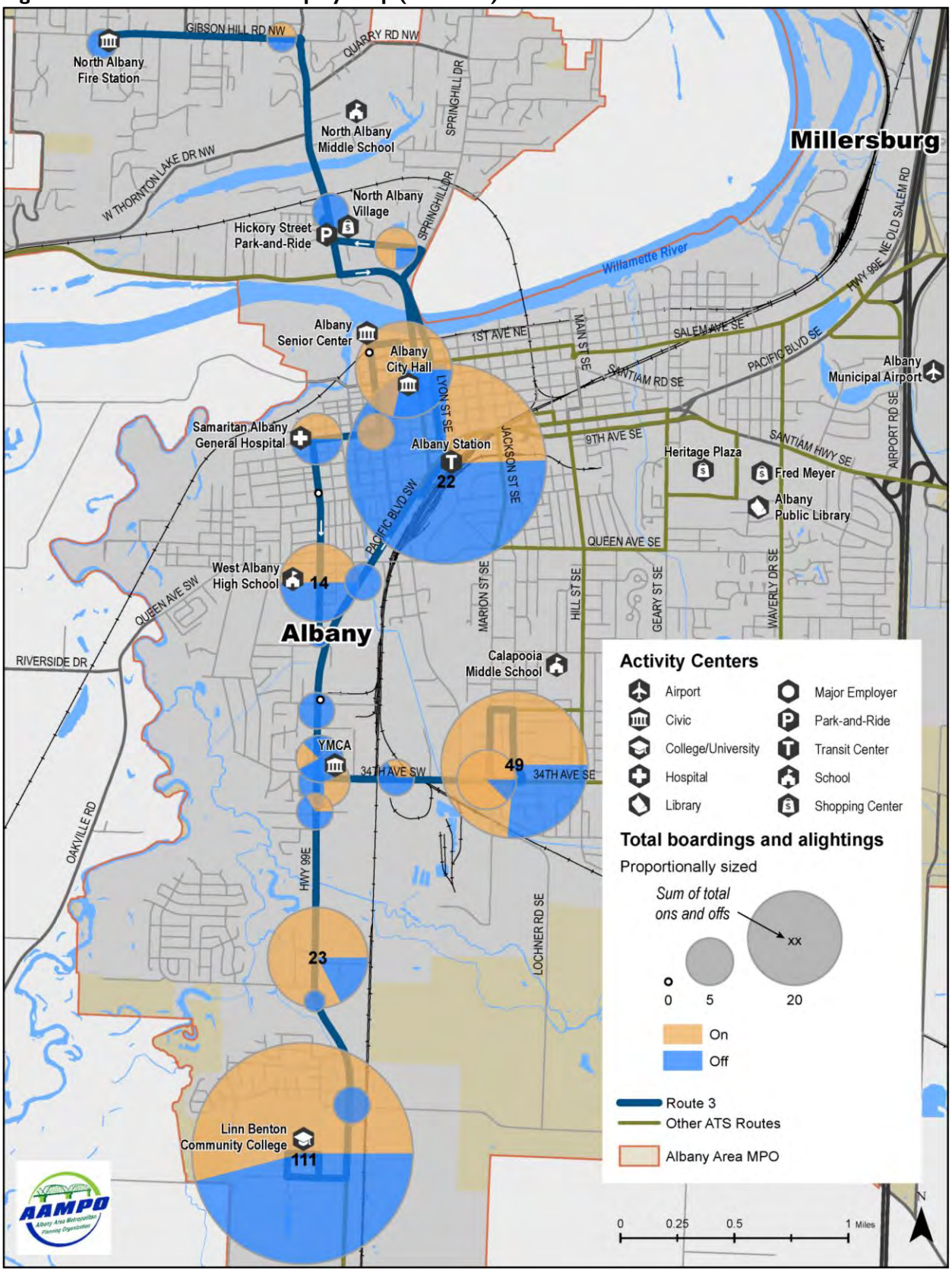


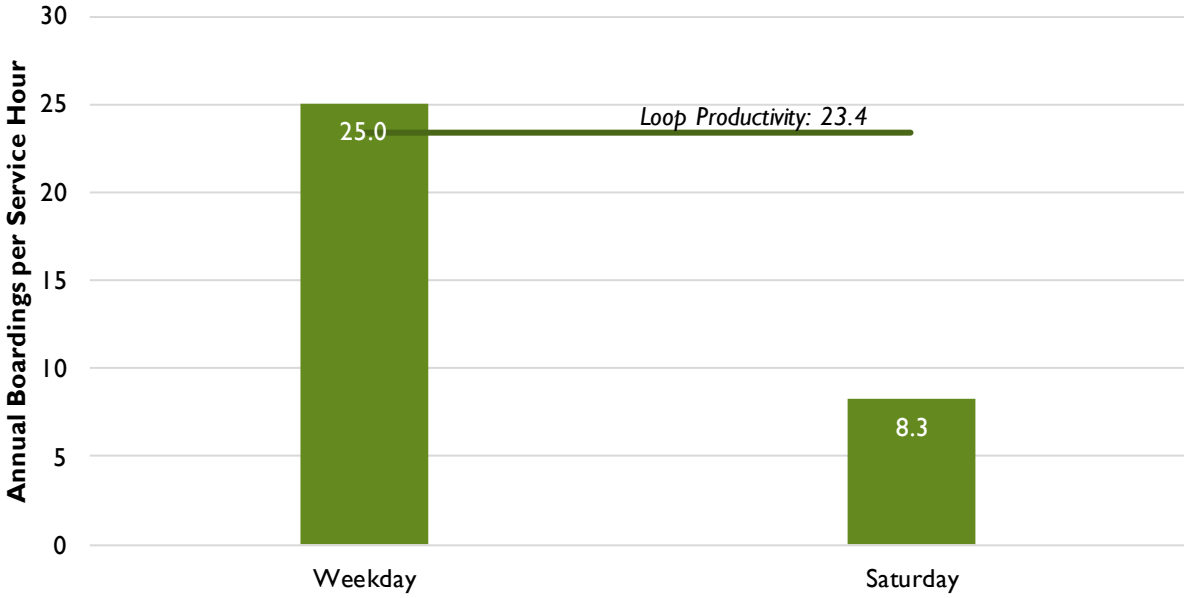
Figure 28 Route 3 Ridership by Stop (Fall 2014)



Linn-Benton Loop

The Loop's productivity is the highest of Albany area transit services. The Loop carries 110,000 annual boardings over 4,700 annual service hours. Average productivity is 23 boardings per hour, but the vast majority of passengers ride during the weekdays (see Figure 29).

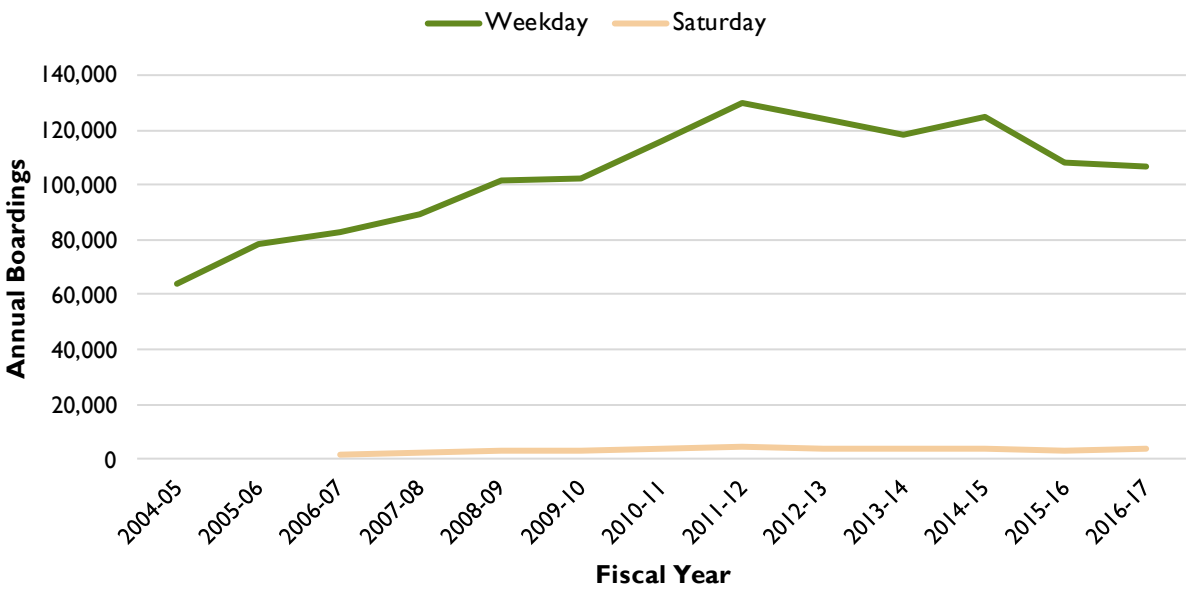
Figure 29 Annual Loop Productivity (Boardings per Service Hour), by Day



Source: City of Albany; based on FY 2016-17 data

The Loop's ridership has grown during the past decade, largely driven by growth during the weekday (see Figure 30). Service on Saturdays has carried approximately the same number of passengers each year, between 2,000 and 4,000 passengers. This is approximately one-sixth of the number of passengers carried by the Loop on an average weekday.

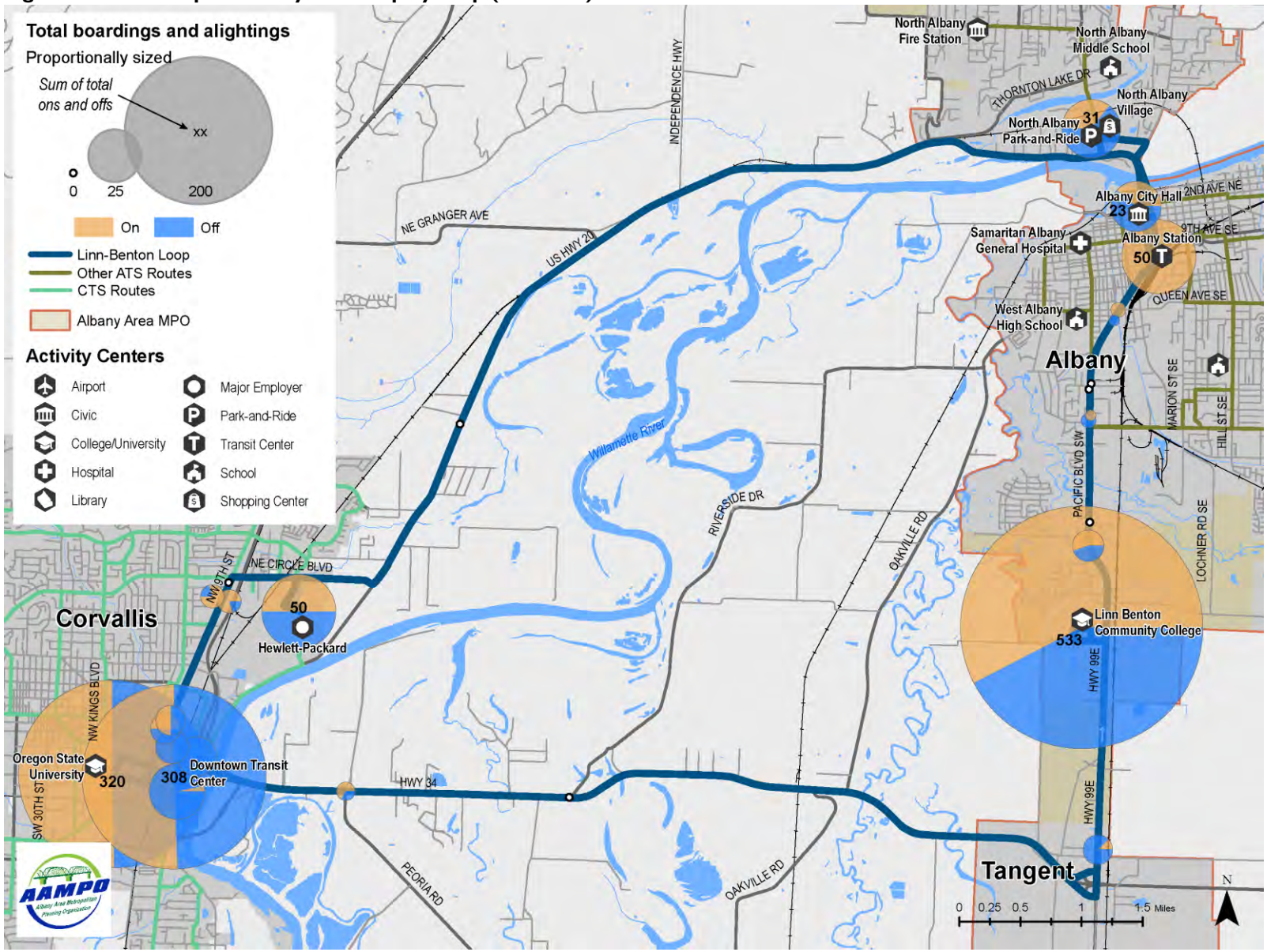
Figure 30 Annual Loop Ridership, by Service Day



Source: City of Albany

Figure 31 shows the weekday ridership by stop on the Loop.

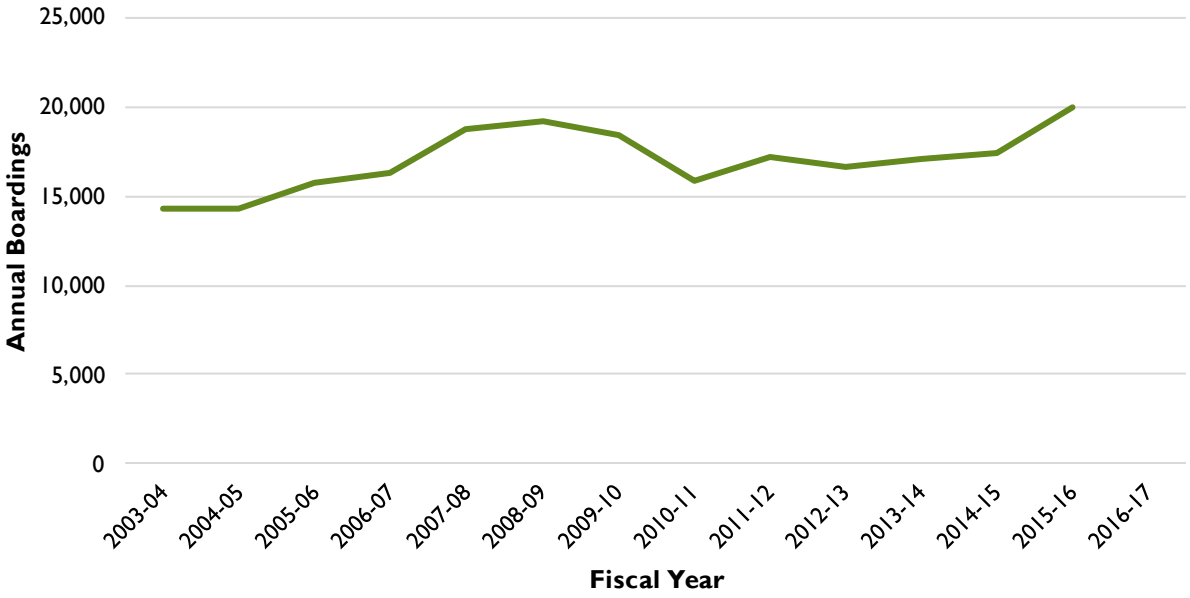
Figure 31 Loop Weekday Ridership by Stop (Fall 2014)



Albany Call-A-Ride

Albany Call-A-Ride carries between 15,000 and 20,000 passengers annually during the past decade (Figure 32). With approximately 6,000 annual service hours, Albany Call-A-Ride has a productivity of 2.8 boardings per hour, which is typical for paratransit services. The Albany Call-A-Ride has seen minimal ridership growth during the past ten years. Ridership increased during the recession, but dropped to pre-recession levels by 2011.

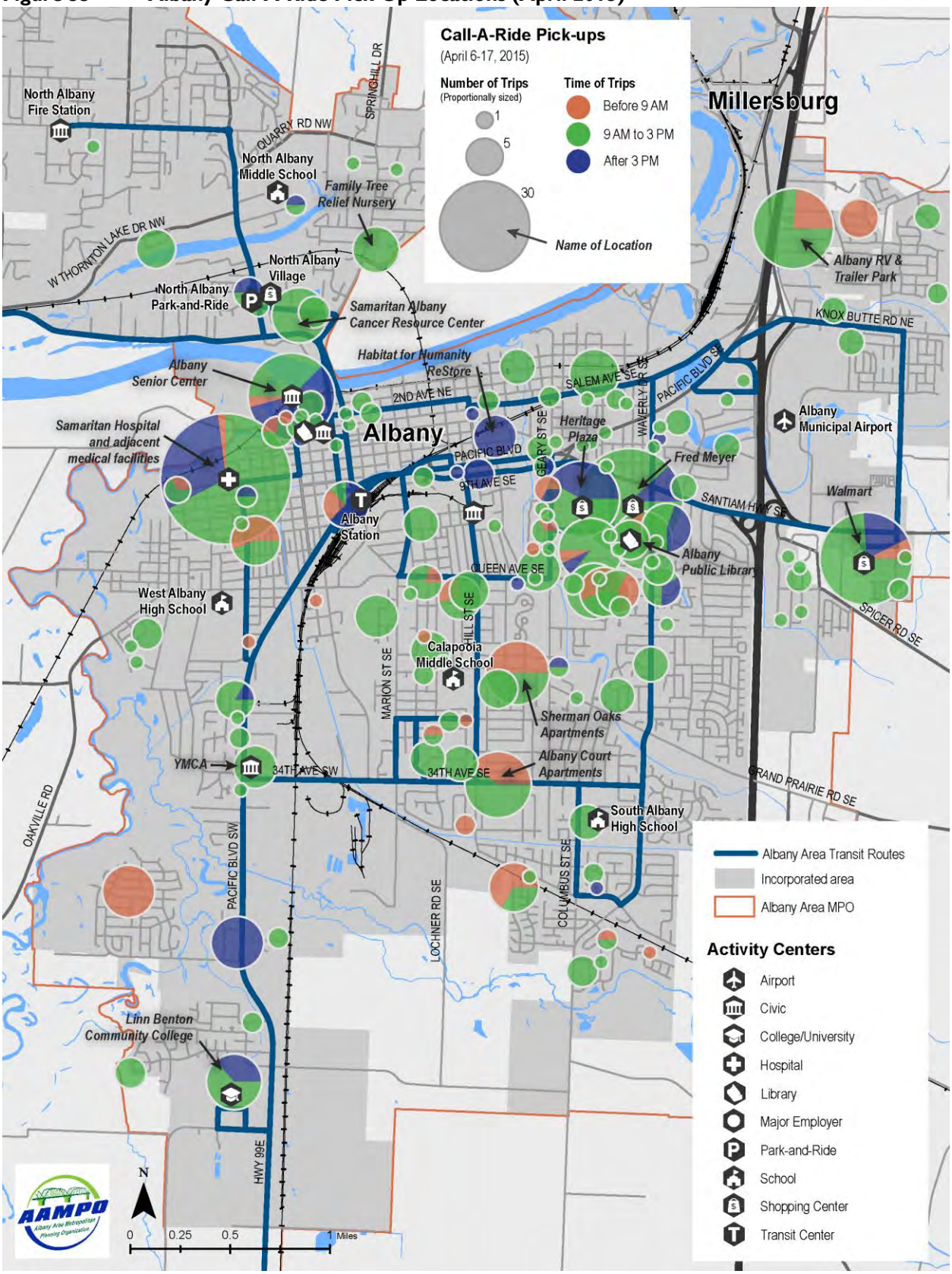
Figure 32 Annual Albany Call-A-Ride Ridership



Source: City of Albany

Figure 33 shows Albany Call-A-Ride pick-ups locations coded by time period during a two-week period in April 2015. The areas with the highest demand for trips are surrounding Heritage Plaza, senior housing complexes, and medical facilities. Most trips occur between 9 a.m. and 3 p.m. Pick-up locations in residential areas tend to have higher rates of pick-ups before 9 a.m., and commercial areas tend to have more pick-ups after 3 p.m.

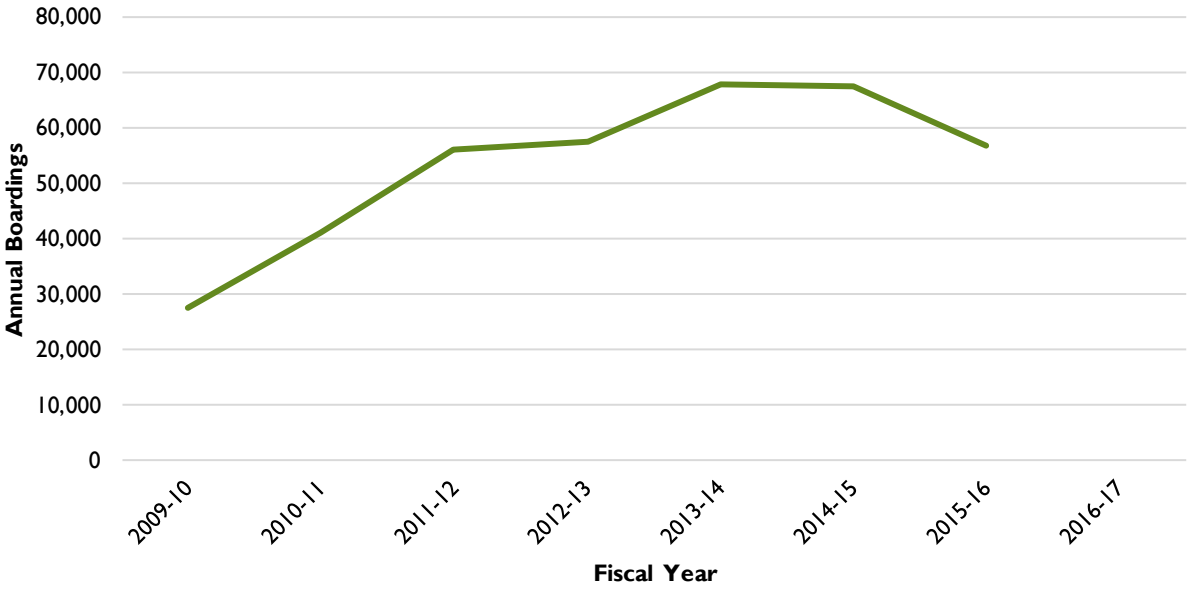
Figure 33 Albany Call-A-Ride Pick-Up Locations (April 2015)



Linn Shuttle

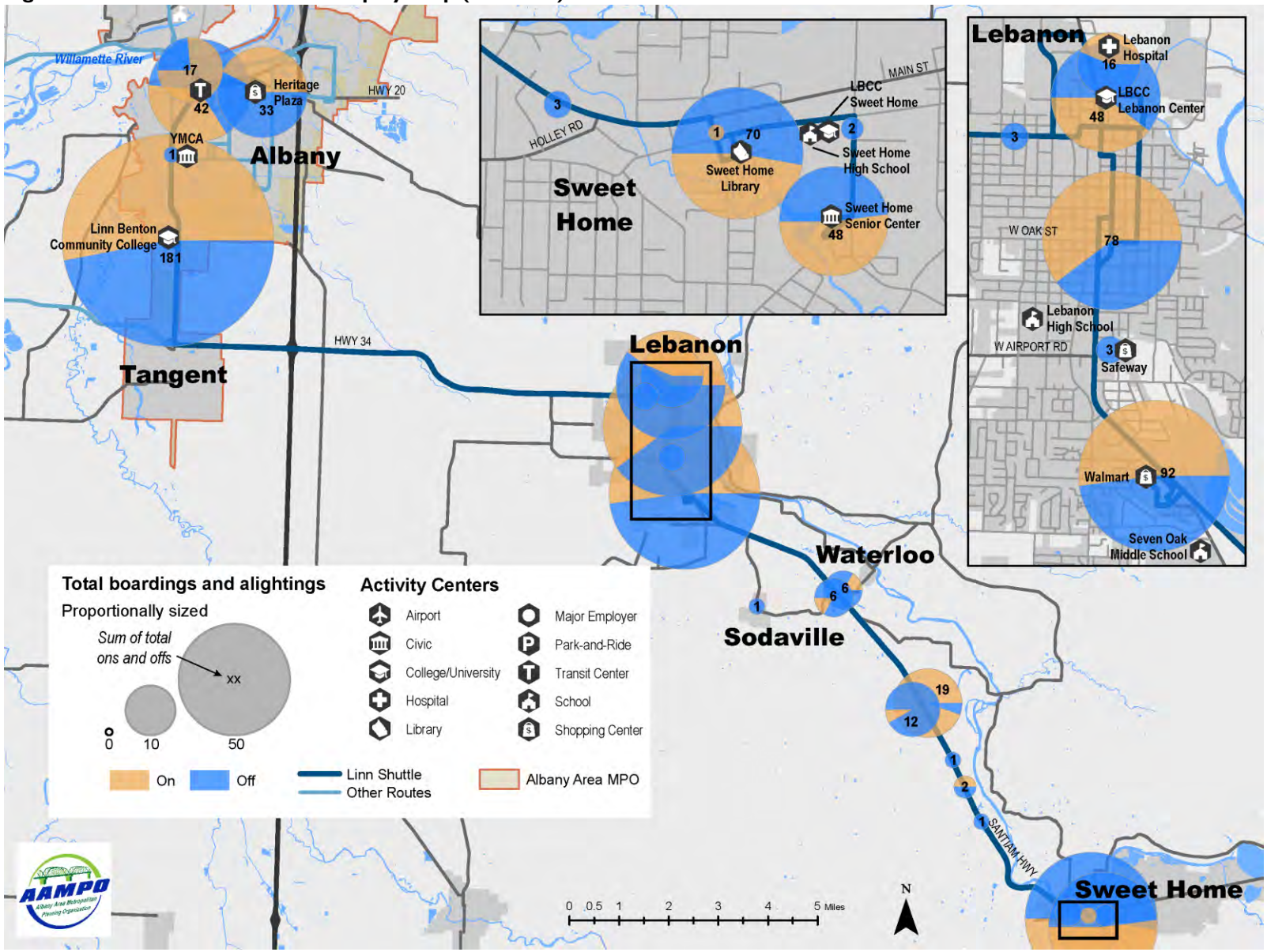
The Linn Shuttle's ridership has grown significantly over between 2009 and 2014, from less than 30,000 to 70,000. With approximately 5,270 annual service hours, the Linn Shuttle operates with a productivity of approximately 10.8 boardings per hour. Figure 34 shows the annual ridership on the Linn Shuttle, and Figure 35 shows the ridership by stop.

Figure 34 Annual Linn Shuttle Ridership



Source: Sweet Home Senior Center

Figure 35 Linn Shuttle Ridership by Stop (Fall 2014)



Peer Review

Additional performance metrics for ATS compared to a set of five peers are provided in Table 10 and Table 11 (for fixed-route and paratransit services, respectively). The values are based on data reported to the FTA by each agency and available through the National Transit Database (NTD). Fixed-route data for Albany in the NTD combines data for ATS and the Loop.

Compared with the five peers, ATS (fixed-route plus Loop) is fairly productive. At approximately 22 passengers per hour, it exceeds the average of its peers of 14 passengers per hour. However, ATS provides far less service than all five peers. According to NTD, ATS operated approximately 10,000 hours of service, approximately half of the peer average of 20,500 hours. Additionally, the cost per hour to operate the service—approximately $94 per hour—is 22% higher than the peer average of $77 per hour.

Although it seems like costs would go up as service hours increase, that is not always the case. Transit agencies achieve certain economies of scale in terms of administration and dispatch, and as more hours are put onto the street, the service becomes more convenient. Thus adding service hours does increase cost (mainly due to fuel and labor) but ridership may increase at a faster rate. This is how a system like Petaluma, for example, can have 88% more service hours than ATS but just 46% higher costs, while still achieving good productivity.

For demand-response paratransit services, Albany Call-A-Ride is less productive than its peers (2.2 passengers per hour, compared to 2.9 for its peers). However, this difference is not significant and falls within a normal range for paratransit services. In terms of the cost per hour of service, Albany Call-A-Ride is more cost efficient. For each hour of demand-response service, Albany Call-A-Ride costs $57, compared to a peer average of $79 per hour. Albany Call-A-Ride recovers approximately 7% of its operating cost from fares, compared to 5% for the peer systems.

Table 10 Comparison of Peer Fixed Route Systems, 2015

Peer City	Agency	Revenue Hours	Operating Cost	Passengers	Fare Revenue	Passengers per Hour	Operating Cost per Passenger	Operating Cost per Revenue Hour	Farebox Recovery Ratio
Albany	ATS & The Loop	9,925	$932,067	214,865	$56,140	21.65	$4.34	$93.91	6%
Grants Pass, OR	Josephine Community Transit	18,239	$1,119,517	206,653	$124,581	11.33	$5.42	$61.38	11%
Carson, NV	Jump Around Carson	15,345	$812,740	197,041	$70,976	12.84	$4.12	$52.96	9%
Petaluma, CA	Petaluma Transit	18,620	$1,369,079	373,949	$224,011	20.08	$3.66	$73.53	16%
Lodi, CA	Grape Line	22,378	$1,728,424	249,004	$149,251	11.13	$6.94	$77.24	9%
Longview-Kelso, WA	RiverCities Transit	27,968	$2,892,246	428,238	$133,339	15.31	$6.75	$103.41	5%
Peer Average		**20,510**	**$1,584,401**	**290,977**	**$140,432**	**14.19**	**$5.45**	**$77.25**	**9%**

Source: National Transit Database, 2015

Note: Values only include fixed-route and commuter services. Albany values include ATS and the Loop. Fare revenue only accounts for fares collected at the farebox and does not include funding partnerships with other agencies, particularly colleges and universities.

Table 11 Comparison of Peer Demand Response Systems, 2015

Peer City	Agency	Revenue Hours	Operating Cost	Passengers	Fare Revenue	Passengers per Hour	Operating Cost per Passenger	Operating Cost per Revenue Hour	Farebox Recovery Ratio
Albany	Albany Call-A-Ride	7,760	$438,447	17,035	$30,000	2.20	$25.74	$56.50	7%
Grants Pass, OR	Josephine Community Transit	5,820	$451,766	17,937	$29,020	3.08	$25.19	$77.62	6%
Carson, NV	Jump Around Carson	8,553	$374,610	20,372	$31,288	2.38	$18.39	$43.80	8%
Petaluma, CA	Petaluma Transit	8,878	$881,335	26,457	$58,966	2.98	$33.31	$99.27	7%
Lodi, CA	Grape Line	12,131	$1,195,980	32,421	$60,074	2.67	$36.89	$98.59	5%
Longview-Kelso, WA	RiverCities Transit	18,429	$1,354,034	56,756	$14,948	3.08	$23.86	$73.47	1%
Peer Average		**10,762**	**$851,545**	**30,789**	**$38,859**	**2.86**	**$27.66**	**$79.12**	**5%**

Source: National Transit Database, 2015

Note: Values only include demand-response and paratransit.

Peer Fares

A comparison of peer fares shows standard and reduced cost of using ATS is in-line with the costs of its peers. Figure 36 shows the cost for reduced and standard fares with cash for a one-way trip is the same in Albany as in three of its peers. Only Petaluma Transit and Grape Line, serving Petaluma and Lodi, California, respectively, have a higher cost for one-way cash fares. These higher costs may be attributable to the higher cost-of-living in those cities or to the state requirement that transit agencies achieve certain farebox recovery ratios.

Figure 36 One-Way Cash Fare On-Board Bus

Source: City of Albany; Josephine County; Carson City; City of Petaluma; City of Lodi; RiverCities Transit

ATS passengers have a relative benefit with 20-ride booklets. On a per-ride basis, these booklets cost $0.85 for a standard fare and $0.43 for a reduced fare. Peers that provide similar discounted bulk passes have an average cost per ride of $1.03 for a standard fare and $0.50 for a reduce fare.

The lowest relative cost for ATS riders is the monthly pass, which cost $30 for a standard pass and $15 for a reduced pass.[7] These monthly costs are equivalent to the average and median cost of monthly passes for Albany's peers. A detailed comparison of the peer average and median values for different pass types are listed in Appendix C, along with additional charts.

[7] If a passengers uses transit twice a day for 20 days each month, the average cost per boarding is approximately $0.75—three-fourths the cost of a one-way cash fare and approximately 88% of the cost of the 20-ride booklet.

6 Needs Assessment

This chapter summarizes the key findings resulting from the analysis of transit services in the Albany area, community outreach, and performance evaluation.

Key Findings

ATS is a small system comprised of large, one-way loops that connect most of Albany. Many passengers can reach their destinations with a single-seat ride, though timed transfers between routes allow for easy movement from one side of Albany to the other.

Overall, the system does well in serving most parts of the city and a variety of market types: medical facilities, educational institutions, commercial districts, and job centers. Even though these destinations are served by transit, the limited frequency and long travel times make current service ineffective for a wide variety of demographic groups. Improving service would make transit valuable for more people and for a wider range of trip purposes.

The following are additional key findings for the existing service.

- **Limited frequency of service**. With hourly service on most of the ATS routes, it can be difficult for many passengers to run timely errands. The on-board survey and operator comments demonstrate a desire for increased frequency of service.
- **Ridership in Albany has increased considerably in recent years**. While this trend has slowed, high demand for transit service exists in the community and may require increased services to meet the demand.
- **Regional connections are important**. The Loop carries more passengers each day than all of Albany's local routes, combined. Additionally, there are many people who live in Albany but commute to work or school in Corvallis, and students who take classes in both cities. This demonstrates an important need to maintain and improve regional connections.
- **The busiest stops indicate the important needs of passengers**. The busiest stops on all routes demonstrate the importance of access to colleges and universities, shopping centers and grocery stores, and transfer locations between routes. The on-board survey found 49% of passengers in Albany are affiliated with OSU or LBCC. Additionally, stop-level boarding data show a high concentration of ridership activity in the Heritage Plaza area. This demonstrates how important transit service is to people who rely upon ATS for daily errands.
- **Passengers utilize the transfers between routes to connect themselves to the region**. Passengers value the timed transfers between Routes 2 and 3 to travel regionally.

Additionally, many passengers who travel between Corvallis and Albany during the midday depend upon transfers to connect them to their final destination. Despite its importance and simplicity, the process of transferring, and the fare associated with the transfer are not well understood or easy to find for new transit users.

- **Lack of services in smaller communities.** Local bus service is limited to the City of Albany and Call-A-Ride service only operates in Albany and Millersburg. As noted above, residents of smaller communities depend upon health care, shopping and other services in Albany; however, there is no direct transit service from these communities into Albany.
- **Fixed-route service in Albany needs to better serve locations frequented by seniors and those with a disability.** The current route design and schedules, along with barriers limiting access transit, result in overreliance on the Call-A-Ride and medical/shopper shuttle services.

Future Needs

As the Albany area grows over the next few decades, additional transit investments will be required to serve current and future markets. This expansion will be based on multiple needs:

- **Expanding existing services** – The existing service only operates Monday through Friday and for limited hours during the day. There is desire from the public for Saturday service, increased frequency, and longer service hours.
- **Capital needs** – As the Albany transit fleet ages, and as service expands to address latent and future demands, additional vehicles will need to be acquired. A new bus maintenance facility will also be required to accommodate the larger fleet size.
- **Sidewalk connectivity** – All transit trips start or end with a walk, requiring a robust network of safe and connected sidewalks and crosswalks to connect ridership markets with the service. Coordination between transit providers and local jurisdictions will be necessary for this network to be established in time for expanded or new service.
- **Riders not covered by special programs** – Albany is a key destination for low-income workers from Jefferson, Millersburg, and Tangent. The key gap in the current public transportation system is service for younger individuals with disabilities and lower income individuals in smaller communities who are not eligible for Medicaid or other special programs. These individuals may not have a vehicle, physical capacity, money, or family/friends that are available to assist with transportation.
- **Expected growth** – The Albany area is expected to add 20,000 new people and 10,000 new jobs over the next few decades. To maintain existing per capita and per employee service levels in the City of Albany, transit service hours will need to increase between 30 and 70%.

- **Travel pattern changes** – Residential growth in East Albany and Jefferson, and employment growth in Millersburg will increase travel demand to those areas at a rate greater than the overall Albany area travel increase. These locations may require additional transit service to meet their specific needs.
- **Needs in Tangent** – A need was identified for 'last mile' connectivity to/from the existing Loop service for school and work commuters. For those in need of life-line transportation, a demand-responsive service similar to the arrangement in Millersburg may work.
- **Needs in Jefferson** – At the Albany Area MPO Policy Board, the City of Jefferson has expressed a need for demand-response service to provide its residents with mobility options. Commuter and medical trips represent the greatest unmet need. Residents tend to travel to both Salem and Albany for work and shopping, and university students tend to travel to Albany (LBCC) or Corvallis (OSU). Anecdotally, residents are seen walking, hitchhiking, or bicycling to work in Albany, indicating a need for improved commuter connections.
- **Needs in Millersburg** – The draft Millersburg TSP has a strong emphasis on improving the bicycle and pedestrian network and less emphasis on public transportation. An aging population may point to a need for improved non-driving options in the future, however, in the short-term, existing Albany Call-A-Ride services can be advertised on the City's website.

7 Goals, Performance Measures, and Standards

Goals shape desired outcomes, performance measures create transparency and accountability, and standards provide benchmarks for progress. The TDP is guided by the same ten goals used in the AAMPO RTP and the Regional Transportation System Plan (RTSP)[8]. The goals reflect the transportation priorities of the MPO jurisdictions, the State of Oregon Transportation Plan, and guidelines set by the Federal Government. The goals describe principles that guide AAMPO and ATS in creating investment strategies reflecting the community's values.

The goals include:

Goal 1: Provide for a balanced and multi-modal regional transportation system that meets existing and future needs.

Goal 2: Enhance regional and intermodal connectivity for all modes.

Goal 3: Increase the safety and security for all travel modes on the regional system.

Goal 4: Protect the natural and built environment by judicious use of capacity enhancements and reduction in single-auto trip dependence.

Goal 5: Preserve the mobility of existing freight routes to ensure the efficient movement of goods throughout the region.

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 transportation system with positive health impacts.

Goal 9: Provide for a diversified transportation system that ensures mobility for all.

Goal 10: Provide an open and balanced process for planning and developing the transportation system.

[8] The Federal Highway Administration requires the RTP, while the State of Oregon requires the TSP; AAMPO prepared these plans and the TDP concurrently.

Performance Measures and Standards

Evaluating transit service and implementing changes requires moving from overarching principles to performance measures providing clear, consistent assessments. Monitoring system performance and designing the "right" mix of transit service ensures effective management, evaluation, and planning of public transit services. Effective measures communicate service needs to the public and elected officials. Successful performance measures also minimize data collection and provide meaningful information, as summarized in Table 12.

Table 12 Qualities of Good Performance Measures

Characteristic	Description
Consistent	Comparable data should be collected year after year. Data needs to be collected and reported the same way each time on the same geography.
Readily Available	Data should be drawn from existing data sets whenever possible.
Useful	Data should meaningfully reflect how policies are performing and what adjustments are prudent to make.
Timely	Data should be available for collection on a regular basis.
Reported	Data and findings must be recorded and transmitted to agency partners and the public.

Source: Nelson\Nygaard, 2017

Performance measures can be applied both in the service design as well as evaluation stages. These standards are based on AAMPO and ATS transportation goals, peer agencies reviewed as part of the TDP, and industry best practices. Table 13 summarizes the service design standards and associated benchmark values.

Table 13 ATS Service Design Standards

Performance Measure	Definition	Measure Purpose	Fixed-Route Standard	Call-A-Ride Standard
Total vehicle hours to revenue hours ratio	Number of total hours (deadhead + revenue service) divided by revenue hours	A high ratio shows that a large number of vehicle hours are spent in non-revenue service.	1.3	1.5
Service coverage	Percent of jobs and households within one-quarter mile of a transit stop	This measures the area within walking distance of transit service	75%	NA
Hours of service (span)	The number of hours during the day when transit service is provided	Weekday average Local Commuter (peak) Weekend average All	 16 hours 6 hours 12 hours	 16 hours NA 12 hours

Performance Measure	Definition	Measure Purpose	Fixed-Route Standard	Call-A-Ride Standard
Service frequency	The average bus headways systemwide	Weekday and weekends Local Commuter	60 minutes 60 minutes	NA
Vehicle load ratio	The number of on-board passengers divided by the number of seats on the bus	To assess vehicle crowding, an indicator of passenger convenience and comfort	Peak 1.3 local 1.2 regional Off-Peak 1.0 local 0.7 regional	0.2 paratransit 0.8 Call-A-Ride

ATS already evaluates itself based on some of the above metrics; the table provides additional measures commonly associated with transit agencies. Note that there are no service standards defining a successful public transportation route or system, but standards provide general guidelines to help planners pinpoint areas for improvement. Table 14 shows recommended ATS performance measures and service standards.

Table 14 Recommended Performance Measures and Service Standards

Performance Measure	Definition	Measure Purpose	Fixed-Route Existing	TDP Fixed-Route Target	Call-A-Ride Existing	TDP Call-A-Ride Target
Operating cost per passenger	Ratio of total operating expenditures to ridership	Efficiency measure defined as the cost to provide a specific trip, allocating operating cost on a per-passenger basis	$4.30	$4.25	$26	$24
Operating cost per mile	Ratio of total expenditures to revenue miles	Efficiency measure reported at system level as it is influenced by fuel, labor, insurance, and other system-wide costs	$5	$5	$4.20	$4.20
Operating cost per hour	Ratio of total expenditures to revenue hours	Efficiency metric reported at system level as it is influenced by fuel, labor, insurance, and other costs	$123	$100	$56	$56
On time performance	Percent of trips arriving on-time	Service efficiency measure used to indicate route performance	56% (<5 minutes late)	85%	NA	85%
Passengers per revenue hour	Ratio of total ridership to revenue hours, weekday and weekend average	Service efficiency measure to indicate transit service use	17 ATS 28 Loop (22 avg)	17 ATS 28 Loop	2.5	2.9
Service hours per capita	Ratio of revenue hours to City or service area population	This measure shows how much service is provided to the community	0.2	0.3	0.2	0.2
Passenger trips per capita	Ratio of ridership to service area population	This measure shows how much service is consumed by the community	4.0	4.1	0.3	0.4
Farebox recovery ratio	Fares revenue divided by total operations expenses	This ratio indicates the share of costs borne by transit riders	12%	15%	7%	15%

Source: Nelson\Nygaard, Albany Transit System, National Transit Database.
Note: Existing conditions figures rounded for clarity.

Reporting Improvements

Data collection and reporting supports operations managers' efforts to improve the transit system. The performance data and measures are also used to update decision-makers, federal and state funding partners, and the general public.

ATS, via the City of Albany Public Works Department, provides regular performance updates to the Albany City Council, the Linn-Benton Loop Board, ODOT, and the FTA. These reporting cycles are summarized below.

- The City of Albany City Council reviews ATS, Loop and Albany Call-A-Ride performance reports as needed. The City Council reviews performance measures with information provided for the City's annual budget cycle.
- The Linn-Benton Loop Board and TAC review the Loop performance measures once every three months. The performance measures today have focused on ridership by month and budget.
- ATS reports quarterly to ODOT. As a small urban system, ATS must report vehicle conditions at a minimum; service information is optional. This reporting requirement is likely to increase for State Transportation Improvement Fund recipients starting in the year 2020. ODOT uses reported data to develop funding programs and allocate funds.
- ATS reports annually to the FTA via the National Transit Database, an online data collection and reporting tool. This is ATS' most extensive reporting requirement, including revenues by source and use, expenditures by type, service provided by type, vehicle use and condition, and facilities condition. The NTD annual data is publicly available, including performance measure calculations.

ATS can best manage the data analysis, reporting and corrective action systems to reduce the administrative burden by aligning the evaluation and reporting processes. The following steps provide a framework for maintaining efficient internal procedures.

1. Maintain all data in one record keeping system. One data set can provide all performance measures and summarize data for various report types. The specific software or technology may vary, but one software source for all data will improve accuracy and staff efficiency.
2. Invest in automatic, cloud-based data collection and reporting systems (mobile terminals, GPS, software, cellular plans, and installation). Equipment and software can be included as part of vehicle purchases or separate equipment projects that are eligible for FTA's 20% local match rate.
3. Use one performance measure and budget format (e.g., as presented in the TDP) for the Albany City Council and Linn-Benton Loop Board. Keep a regular quarterly schedule for each group.

8 Future Transit System

This chapter outlines the recommended transit program for the Albany area, providing details on three scenarios that create a vision for transit over the short, medium, and long-term time frames.

Albany Transit System

Three scenarios for future transit service were developed for ATS. In the short-term and medium-term, services will continue to be focused on the City of Albany, which has the strongest market for transit. During the long-term, service will be expanded to the communities of Millersburg, Jefferson, and Tangent. Although the Loop and Linn Shuttle are not under the direct control of AAMPO, recommendations to these services that would optimize ATS routes are included.

Overview of Recommended Scenarios

The scenarios include:

- Short-Term (1–5 years): This scenario continues covering nearly all areas served today but reduces frequency to every 90 minutes. The longer frequencies address low on-time performance by adding running time to each route. Toward the end of this 5-year period, service hours would extend to 8 pm as resources are available.
- Medium-Term (5–10 years): This scenario assumes one additional vehicle, and an 80% increase in service hours. There would be six routes covering much of the same service area as today, at 60-minute headways.
- Long-Term (15–25 years): The unconstrained scenario lays out a vision for a frequent and connected system. This scenario offers two routes with 30-minute headways, three at 60 minutes, plus an expansion of Call-A-Ride to Jefferson and Tangent

Table 15 summarizes the scenarios, with the existing service included for comparison. Conceptual schedules for each scenario are included in Appendix D.

Table 15 Summary of Proposed Service Scenarios

Scenario	Service Frequency	Service Start	Service End	Vehicles	Daily Service Hours	Annual Service Hours	Annual Cost (Fixed-Route)	Increase over Existing	Annual Cost (Call-A-Ride)
Existing	60	6:30 AM	6:15 PM	2	20	5,100	**$628,330**	-	**$582,000**
Short-Term Phase 1	90	6:30 AM	6:30 PM	2	21	5,355	**$659,736**	**5%**	**$582,000**
Short-Term Phase 2	90	6:30 AM	8:00 PM	2	27	6,885	**$848,232**	**35%**	**$654,750**
Medium-Term	60	6:30 AM	8:00 PM	3	40.5	10,328	**$1,272,348**	**150%**	**$654,750**
Long-Term	30-60	6:00 AM	8:00 PM	8[9]	98	24,990	**$3,078,768**	**390%**	**$700,678**

Note: Costs estimate based on ATS historical operating costs of $123.20 per service hour.

[9] Includes seven 40-foot vehicles for fixed-route services, and one additional paratransit vehicle for expanded Call-A-Ride service.

The increase in fixed-route operating cost was calculated by multiplying the estimated annual service hours by the existing operating cost of $123.20 per service hour. Call-A-Ride service costs will remain the same as Existing in Short-Term Phase 1. However, due to an increase in fixed-route service span until 8 p.m. in Short-Term Phase 2, Call-A-Ride is required to extend service to match those hours.

The operating cost per hour for Call-A-Ride was not available. To estimate the annual cost increase, it was assumed the annual Call-A-Ride operating cost in Short-Term Phase 2 would increase at the same rate as the increase in daily service hours on Call-A-Ride in Short-Term Phase 2. Call-A-Ride service would increase by 12.5%, from 12 daily hours to 13.5 daily hours. The annual cost would therefore increase by 12.5% as well, from $582,000 to $654,750.

The cost for Call-A-Ride would increase again in the Long-Term, when its service area would expand into Jefferson and Tangent. To estimate long-term annual operating costs, it was assumed the existing level of consumption per capita (i.e. annual passenger trips for each resident of Albany and Millersburg) would remain constant in the expanded service area – approximately 0.33 trips per person. The population of Jefferson and Tangent is approximately 4,200 people. Assuming 0.33 trips per person, this population would result in an increase of 1,375 trips per year. With an existing cost of $33.39 per passenger, the expansion into Jefferson and Tangent would likely increase annual costs by approximately $45,930. In addition to the increase resulting from the longer span of service in the Short-Term, Call-A-Ride in the Long-Term Scenario would cost approximately $700,680 per year.

Short-Term Scenario

In the next five years, ATS may receive some additional resources through HB 2017 (funds will be disbursed starting July 2019). Given that, the Short-Term Scenario includes two phases: one phase that can be implemented with existing resources and a second that would require a level of additional resources that could be covered with HB 2017 funds.

Short-Term Phase 1

In the next 1-3 years, ATS can tackle its on-time performance issues and create a network of four routes that offer more direct routing. This reduces service frequency to every 90 minutes, but preserves coverage to nearly all places that have service today. Buses running behind schedule was identified as a problem by current riders. This scenario increases reliability by adding enough cycle and recovery time to ensure that the bus stays on schedule.

Route 1 serves Pacific Boulevard to LBCC, returns to Albany Station, and then serves Heritage Plaza before returning to Albany Station. Route 2 serves Downtown Albany, travels via Salem Avenue to WinCo, returns to Downtown Albany, then serves North Albany before returning to Albany Station. Route 3 travels via Pacific Boulevard to WinCo, then travels along Knox Butte Road and turns around at Walmart for the return trip. After stopping at Albany Station Route 3 travels to West Albany High School. Route 4 serves Heritage Plaza, Waverly Drive, South

Albany High School, Hill Street, goes back to Heritage Plaza, then goes to Albany Station. This route then circulates to City Hall and Samaritan Hospital.

Note that Routes 1, 3, and 4 would serve Albany Station mid-route, allowing passengers more opportunities to transfer and connect between routes.

The span of service in this scenario remains nearly the same as existing (service extends 15 minutes to 6:30 p.m.); however, today ATS only operates one vehicle from 6:30 a.m. – 8:30 a.m. Operating all four proposed routes all day requires additional service hours. A small increase in operating expenses is feasible in the short-term. To minimize cost increases, a midday break of one and a half hours (11:45 a.m. to 1:15 p.m.) is included to limit additional operating hours to one hour per day. Current ridership is low during this part of the day.

Table 16 summarizes the frequency, run times[10], vehicle requirements, and annual hours for each route. Figure 37 is a map of the recommended service.

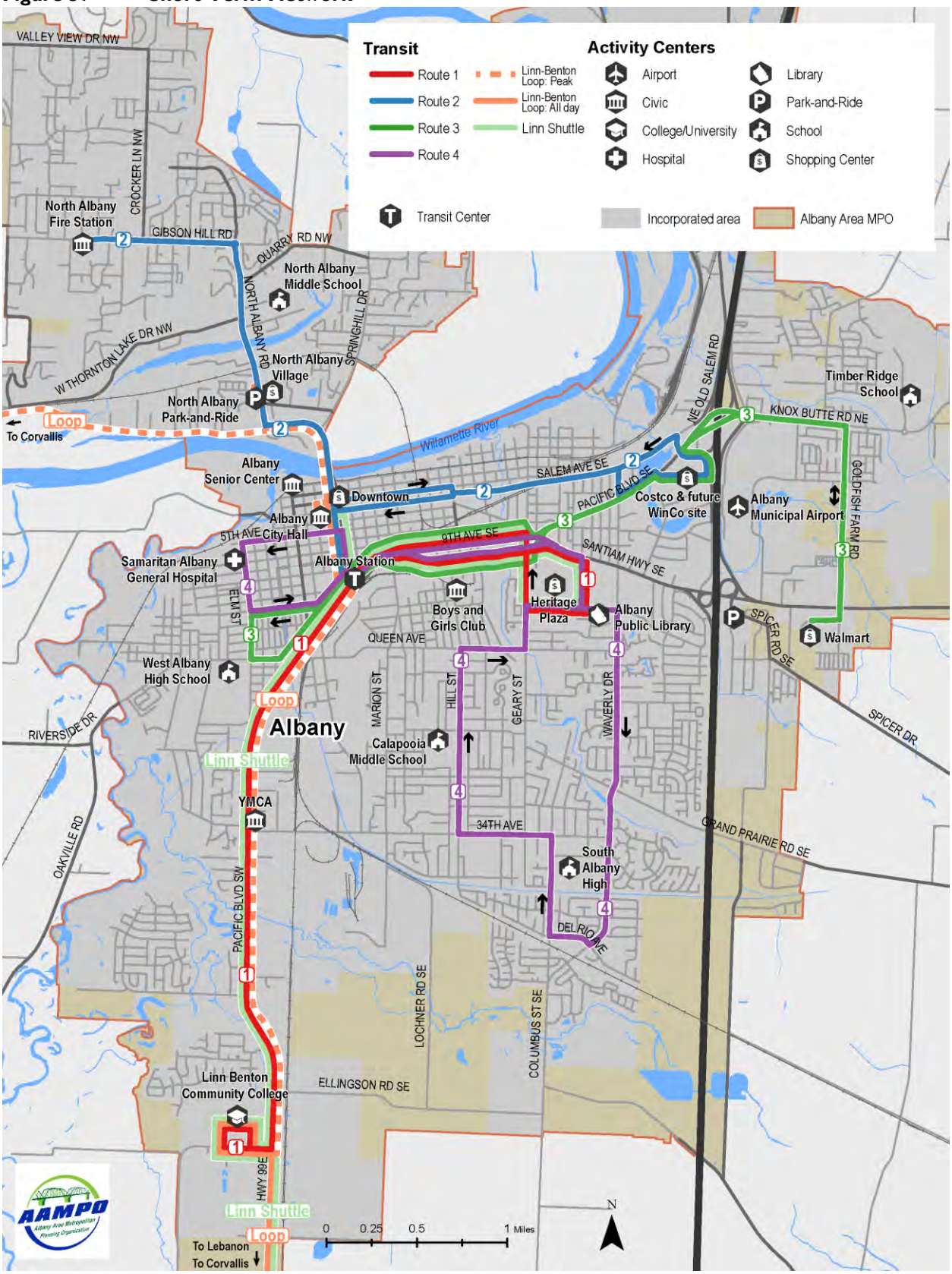
Table 16 Summary of Short-Term Scenario Phase 1

Route	Frequency (minutes)	Run Time (minutes)	Vehicles	Interlined with Route	Daily Service Hours	Annual Service Hours	Annual Cost
1	90	39	0.5	2	5.25	1,338.75	$164,934
2	90	38	0.5	1	5.25	1,338.75	$164,934
3	90	34	0.5	4	5.25	1,338.75	$164,934
4	90	38	0.5	3	5.25	1,338.75	$164,934
TOTAL	**90**	**-**	**2.0**	**-**	**21.0**	**5,355.0**	**$659,736**

Note: Annual costs are based on $123.20 per service hours.

[10] Running times were verified through a test run completed by ATS.

Figure 37 Short-Term Network



Short-Term Phase 2

As transit resources increase in the future, there may be opportunities to further improve service and provide meaningful transit options for Albany residents. Frequency was a top passenger service priority, followed by evening service (Figure 20). The top request for a service end time was 8 p.m. (Figure 21). In the 3-5-year range, Albany may be able to provide service during the midday break and expand service hours until 8 p.m. to respond to the public's request for more service later in the day. Table 17 summarizes the annual service hours and cost by route.

Table 17 Summary of Short-Term Scenario Phase 2

Route	Frequency (minutes)	Run Time (minutes)	Vehicles	Interlined with Route	Daily Service Hours	Annual Service Hours	Annual Cost
1	90	39	0.5	2	6.75	1,721.25	$212,058
2	90	38	0.5	1	6.75	1,721.25	$212,058
3	90	34	0.5	4	6.75	1,721.25	$212,058
4	90	38	0.5	3	6.75	1,721.25	$212,058
TOTAL	**90**	**-**	**2.0**	**-**	**27.0**	**6,885.00**	**$848,232**

Note: Annual costs are based on $123.20 per service hours.

The increase in service span will require Call-A-Ride service to also expand service hours until 8 p.m. as well. The increased span will require an additional $72,750 per year, for a total of approximately $654,750 per year.

Medium-Term Scenario

Medium-Term includes six routes operated on three vehicles. All routes operate hourly and cycle in 30 minutes. This scenario maintains coverage to most locations that are served today, but reduces travel times as a result of more direct routes and the additional vehicle. The Medium-Term Scenario establishes a second transfer location at Heritage Plaza, which exhibits very high ridership today.

Route 1 travels between Albany Station and Walmart along Pacific Boulevard/Santiam Highway. Route 2 provides service between Heritage Plaza, neighborhoods along Waverly Drive, South Albany High School, and Hill Street. Route 3 serves Pacific Boulevard between Albany Station and LBCC. Route 4 serves North Albany, with direct service through Downtown Albany along Ellsworth and Lyon Street, serving North Albany Park-and-Ride and turning around at the North Albany Fire Station. Route 5 serves Heritage Plaza, WinCo, and Knox Butte Road. Route 6 serves Downtown Albany and destinations along Salem Avenue.

At Albany Station Routes 1 and 3 and Routes 4 and 6 would interline. Routes 2 and 5 would interline at Heritage Plaza and use one bus.

Unlike the Short-Term scenario, the Medium-Term scenario would not require a midday service break. Service would operate from 6:30 a.m. to 8:00 p.m. Table 18 summarizes the frequency, run times,[11] vehicle requirements, and annual hours for each route. Figure 38 is a map of the recommended service.

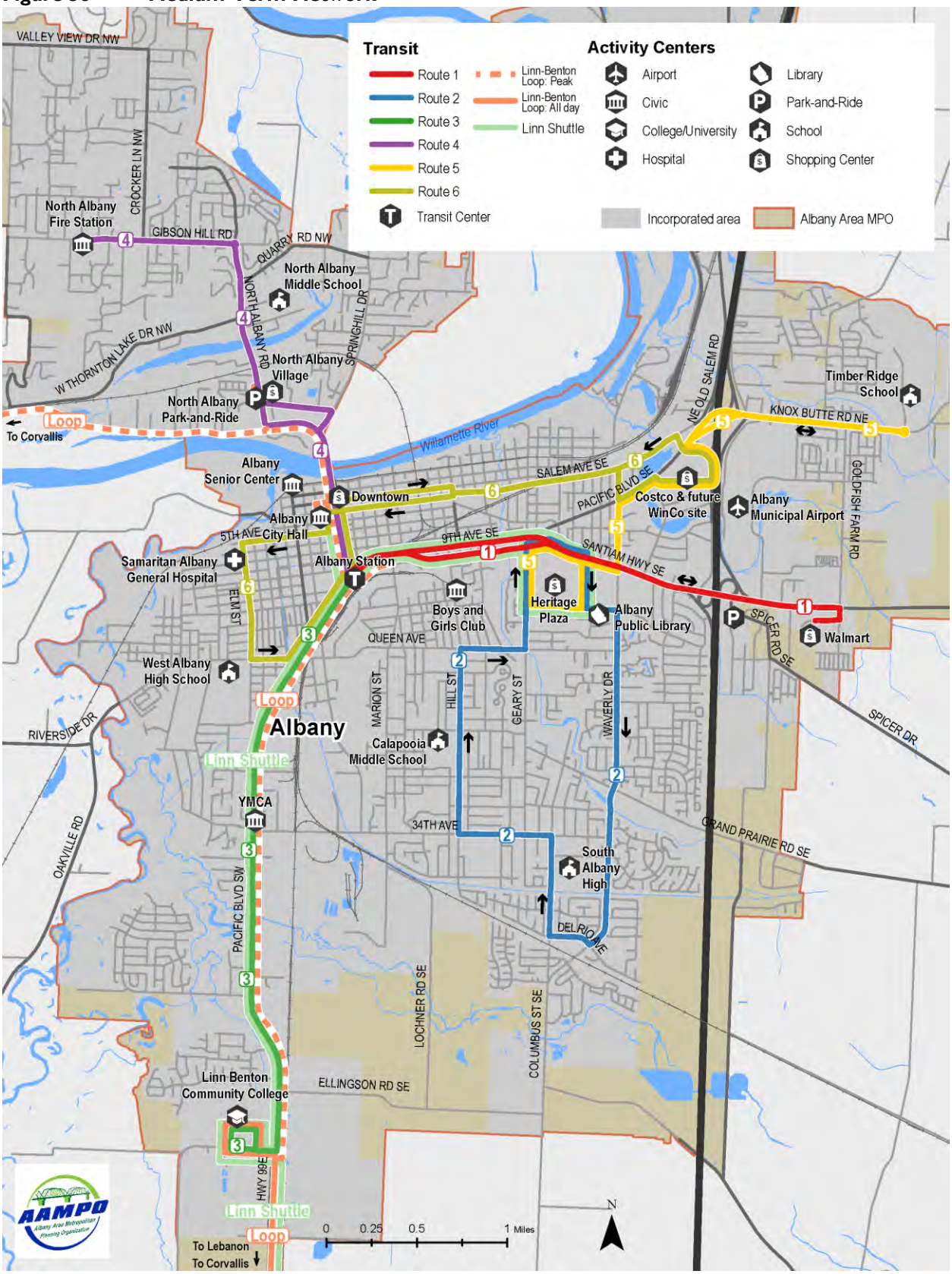
Table 18 Summary of Medium-Term

Route	Frequency (minutes)	Run Time (minutes)	Vehicles	Interlined with Route	Daily Service Hours	Annual Service Hours	Annual Cost
1	60	24	0.5	3	6.75	1,721.25	$212,058
2	60	22	0.5	5	6.75	1,721.25	$212,058
3	60	28	0.5	1	6.75	1,721.25	$212,058
4	60	24	0.5	6	6.75	1,721.25	$212,058
5	60	25	0.5	2	6.75	1,721.25	$212,058
6	60	27	0.5	4	6.75	1,721.25	$212,058
TOTAL	**60**	**-**	**3.0**	**-**	**40.50**	**10,327,50**	**$1,272,348**

Note Annual costs are based on $123.20 per service hours.

[11] Running times were verified through a test run completed by ATS.

Figure 38 Medium-Term Network



Long-Term Scenario

The long-term scenario is aspirational, assuming reasonably unconstrained funding. This option includes five local routes and an expansion of Call-A-Ride.

The Long-Term Scenario includes three main service enhancements. The first is an expansion of coverage in North Albany north of Gibson Hill Road in response to expected population growth. The second is a new connection between WinCo and LBCC via Waverly Drive and Ellingson Road. This provides a second service option for crosstown connections between LBCC, Heritage Plaza, and Costco/WinCo. The third is the addition of Call-A-Ride service into Jefferson and Tangent.

Route 1 connects LBCC and Walmart along Pacific Boulevard and Santiam Highway. Route 2 provides service through Downtown Albany, along Salem Avenue, turn south on Geary Street to serve Heritage Plaza, and continue south to provide service along Hill Street and turn around at South Albany High School before returning to Albany Station. Route 3 runs from Costco/WinCo to Heritage Plaza, serves Waverly Drive, Ellingson Road, and terminates at LBCC before returning to Costco/WinCo. Route 4 provides crosstown service from North Albany, through Downtown Albany, serving Queen Avenue and Heritage Plaza. Route 5 serves Albany Station along Elm Street, through Downtown Albany along 5th Avenue, serving Salem Avenue, Costco/WinCo, Knox Butte Road and Goldfish Farm Road, to Walmart. Commuter service stops at the locations listed in Appendix D.

Table 19 summarizes the frequency, run times, vehicle requirements, and annual hours for each route. Figure 39 is a map of the proposed service. The full Albany area is shown in **Error! Reference source not found.**.

Table 19 Summary of Long-Term

Route	Frequency (minutes)	Run Time (minutes)	Vehicles	Interlined with Route	Daily Service Hours	Annual Service Hours	Annual Cost
1	30	50	2	-	28.0	7,140	$879,648
2	60	44	1	-	14.0	3,570	$439,824
3	60	50	1	-	14.0	3,570	$439,824
4	60	53	1	-	14.0	3,570	$439,824
5	30	52	2	-	28.0	7,140	$879,648
TOTAL			**7**		**98.0**	**24,990**	**$3,078,768**

Annual costs are based on $123.20 per service hours.

Expansion of Call-A-Ride

An expansion of Call-A-Ride service to Jefferson and Tangent would provide reliable transit options for older adults and people with disabilities.

Call-A-Ride service would operate throughout the entire day and allow passengers to travel to any location in the Albany area. Regional Albany Call-A-Ride service would only be available

for people with disabilities or older adults, unlike the fixed-route services which are open to the general public.

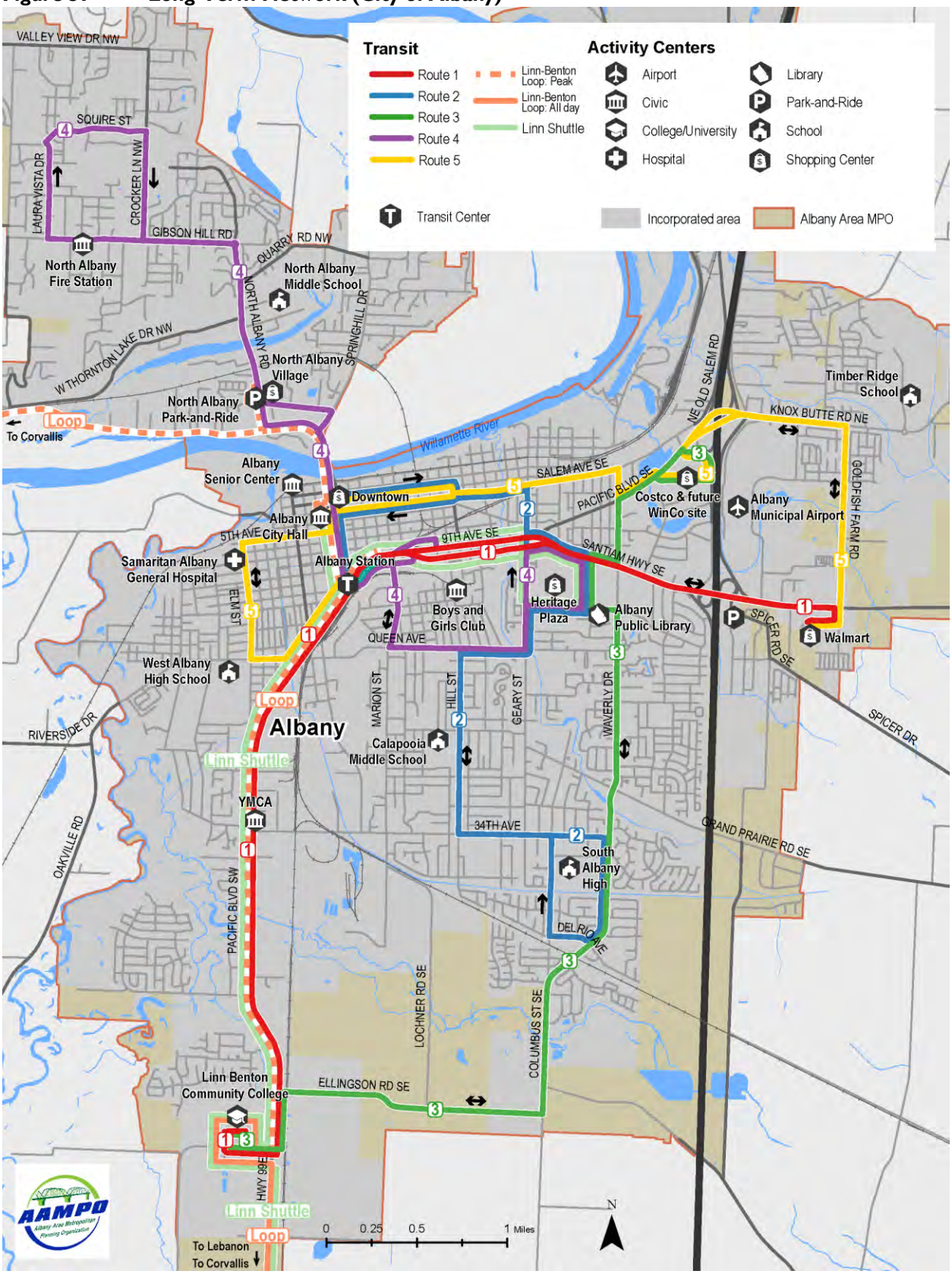
Based on the existing operating cost per passenger on Albany Call-A-Ride (approximately $33), and the existing per capita annual trip rate (0.33 for both Albany and Millersburg), an expansion of Albany Call-A-Ride service to Tangent and Jefferson is likely to serve an additional 1,400 passengers and cost the Albany area an additional $46,000 each year.[12] This cost is likely a conservative estimate because trips to or from Jefferson or Tangent are likely to be longer than existing trips, which could increase the operating cost per passenger. Table 20 compares the existing and estimated values for annual passengers and cost.

Table 20 Albany Call-A-Ride Expansion Estimates

Scenario	Annual Passengers	Service Area Population	Annual Cost
Existing	17,429	53,172	$582,000
Long-Term Expansion (estimate)	18,804	57,368	$700,678

[12] Values based on combined population of Jefferson and Tangent (4,196 according to U.S. Census ACS 2011-2015 5-Year Estimates). Cost per passenger x Trip Rate x Population = $33.39 x 0.33 x 4,196 = $45,928.

Figure 39 Long-Term Network (City of Albany)



System Impacts

Each of the scenarios is intended to increase ridership by getting riders to the most popular destinations quickly and reducing late trips to increase reliability. To assess and evaluate how well these scenarios achieve this goal, and to compare how conditions are likely to change from what passengers experience today, the project team developed various measures. Each of the scenarios are evaluated against measures that were vetted with the projects' Technical Advisory Committee Transit Subgroup. The measures are:

- **Percent of revenue hours meeting frequency of service goals** – This measures how much service provided in each scenario operates at least every 60 minutes.
- **Percent of revenue hours meeting span of service goals** – This measures how much service provided in each scenario operates for 16 hours per day on weekdays, and 12 hours per day on weekends.
- **Travel time between key destinations** – This measures the average roundtrip travel time between important origin-destination pairs. It measures how quickly passengers can get between destinations. It is also a proxy for measuring out-of-direction travel.
- **Ratio of in-service hours to vehicle hours** – The ratio of service hours to vehicle hours indicates likelihood of reliability, on-time performance, and efficiency. A reasonable ratio is between 80 and 90%. Values lower than 80% suggest inefficient service, whereas values higher than 90% suggest reduced reliability and on-time performance.
- **Percent of jobs within ¼ mile walk of transit stops** – This is a coverage measure that identifies what percent of jobs and employment opportunities are easily accessible from the stops along the transit network.
- **Percent of households within ¼ mile walk of transit stops** – This measure identifies the percent of households that are easily accessible from the stops along the transit network.
- **Percent of households below poverty line within ¼ mile walk of transit stops** – This measure identifies the percent of households that have incomes below the federal poverty level that are easily accessible from stops along the transit network.
- **Percent of households without a vehicle within ¼ mile walk of transit stops** – This measures the percent of households without vehicles that are easily accessible from stops along the transit network.
- **Percent of key destinations within ¼ mile walk of transit stops** – This measures the percent of important community destinations (including shopping centers, health facilities, employment centers and other high-demand locations) that are accessible from stops along the network.

Table 21 provides a summary and overview of each of the performance measures, using existing conditions as a benchmark. Overall, each of the scenarios performs the same as, or better than, the existing service in terms of service design and productivity. Coverage declines in the short-

term scenario. Additional details on the performance measures and potential impacts on ridership and fare revenue are identified in Appendix D.

Table 21 Summary of Performance Measures

Category	Measure	Existing	Short-Term	Medium-Term	Long-Term
Service Design	Percent of revenue hours meeting frequency of service goals	100%	○	◒	◒
	Percent of revenue hours meeting span of service goals	0%	◒	◒	◒
Productivity-Focused	Travel time between key destinations	70	●	●	●
	Ratio of in-service hours to vehicle hours	0%	●	●	●
Coverage-Focused	Percent of jobs within ¼ mile walk of all transit stops	77%	◒	◒	●
	Percent of households within ¼ mile walk of all transit stops	67%	◒	◒	●
	Percent of people below poverty line within ¼ mile walk of all transit stops	78%	○	○	●
	Percent of households without access to a vehicle within ¼ mile walk of all transit stops	83%	○	◒	●
	Percent of key destinations within ¼ mile walk of all transit stops	86%	◒	◒	●

Key of how well scenario supports measure:

○ Does not support measure

◒ No change

● Supports measure / Improves

Regional Services

Regional public transportation services in the Albany area include long-haul services like Cascades POINT that only stop at Albany Station, and regional services like the Linn Shuttle and the Loop that serve multiple destinations in the region. Key issues for these services include:

- **Loop has high ridership**, more than ATS fixed routes combined, driven by high-demand service areas and free fares for students.
- **Albany Station and Corvallis Downtown Transit Center** are high-use Loop stops, in addition to OSU and LBCC, suggesting that the Loop serves a larger travel market beyond connections between universities.
- **Ridership on regional routes will grow**, driven by university enrollment, high housing costs in Corvallis, and increasing traffic congestion.
- **First- and last-mile connections** to interregional transit routes are an important ATS function.
- **Loop schedules can be difficult** for readers to understand, particularly for occasional users.
- **Service gaps and overlaps** hinder rider connections between regional transit routes, including the Loop, ATS, and Linn Shuttle.

The following preliminary recommendations address these findings. Full recommendations and an operating plan will require planning and action by the Linn Benton Loop Board.[13] All scenarios must provide a similar level of transit service between OSU and Corvallis Downtown Transit Center, whether it be served by the Loop or CTS. The Sweet Home Senior Center, the City of Sweet Home, and Linn County are responsible for implementing any recommendations for the Linn Shuttle. Further information can be found in the TDP Technical Memorandum 16 that may support future service planning.

1. Bi-directional Loop service all day between Albany Station and Corvallis

The five Loop route variants are differentiated by three times of day (morning, mid-day, and afternoon) and can be confusing for passengers. In addition, ridership patterns show a clear demand for service between the cities of Albany and Corvallis, not just between OSU and LBCC. The following suggestions to Loop operations could better connect Albany residents to the larger region.

[13] The Linn-Benton Loop Governing Board has agreed to pursue a service development plan to review ridership needs and service options related to increased funding

1a. Serve Albany Station all day. Albany station is one of the busiest transit hubs in Oregon and stakeholders indicated that riders would like greater schedule coordination between transit services in the Albany area. Eleven interregional buses stop at the station midday, however, including Amtrak, Oregon Cascades POINT, Bolt Bus and the Linn Shuttle.

Today only the morning and afternoon Loop runs stop at Albany Station. Mid-day service from LBCC to Albany Station would supplement the ATS runs along the Pacific Boulevard corridor, which exhibit very high ridership. The Loop travel time between LBCC and the Albany Station is about 10 minutes, including stops.

Benefits: Increases mobility and access with connections to interregional transit services. Simplifies route design and schedules.

Considerations: Additional travel time may require reducing run time in other parts of route, or additional operating costs.

1b. Streamline service. The Loop cannot achieve hourly operation with today's resources. One strategy to provide efficient hourly service is to minimize redundancy in locations that are served by other operators. For example, to reduce running time and serve Albany Station, the Loop could go directly from Hewlett-Packard to the Downtown Transit Center via Highway 99, rather than serving 9th Street or OSU to avoid traffic lights and duplication with CTS In general, the Loop should seldom service local streets and instead serve regional corridors that provide the most direct travel between destinations.

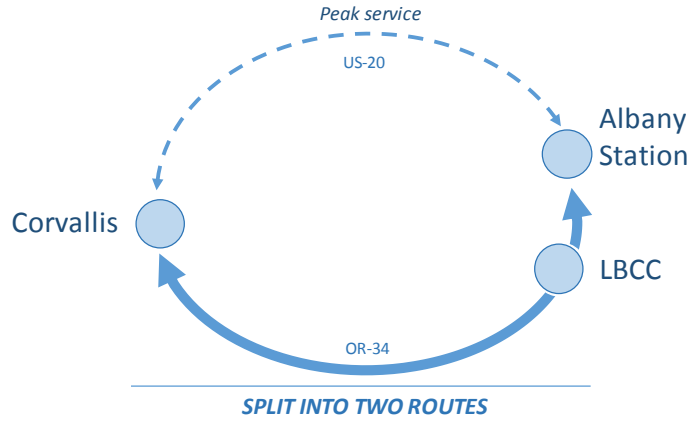
If the Loop does not directly serve OSU, it may open up opportunities for more frequent service between Corvallis Downtown Transit Center and Linn-Benton Community College. However, as noted above, all scenarios should maintain a similar level of service between the Downtown Transit Center and OSU as exists today.

Benefits: Streamlined service may allow the Loop to cycle hourly, and simplifies the route design. Corvallis Transit System provides frequent connections for OSU students.

Considerations: A large number of riders board and alight at the OSU stop, and a transfer or walk will inconvenience those riders.

1c. Split into two routes. Today the clockwise/counterclockwise Loop routes means that some riders must ride nearly all the way around the loop to get to their destination. The full loop versus the back-and-forth between LBCC and Corvallis variants are confusing. The route could be split into a peak-only route connecting Albany Station to Corvallis via US 20, and an all-day service connecting Corvallis, LBCC, and Albany Station via OR 34. The RTP TAC expressed an interest in this option at their October 2017 meeting.

Figure 40 Two Route Concept



Benefits: Easier to understand service; more direct for certain trip pairs.

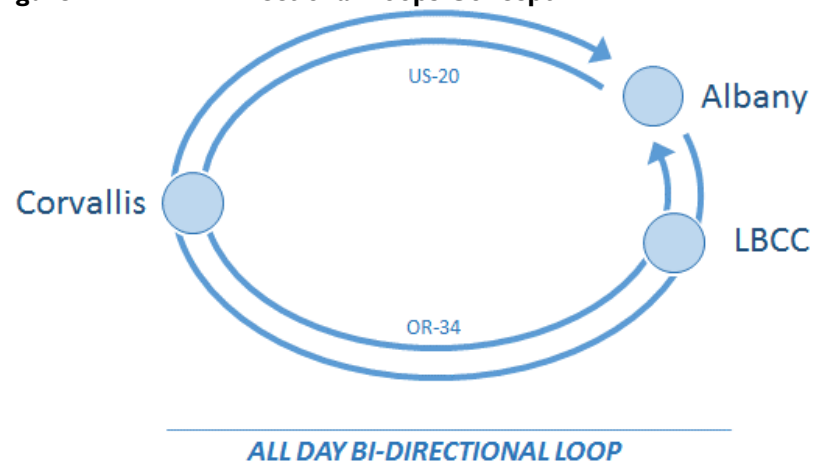
Considerations: Extending midday service to Albany Station requires additional operating funds.

1d. Operate in clockwise and counterclockwise direction all day. A variant on 1c. is to run service in both directions all day. Each route could be run around every 2 hours to achieve headways of around an hour, in both directions.

Benefits: More direct service for certain trip pairs.

Considerations: Would require additional operating funds.

Figure 41 Bi-Directional Loops Concept



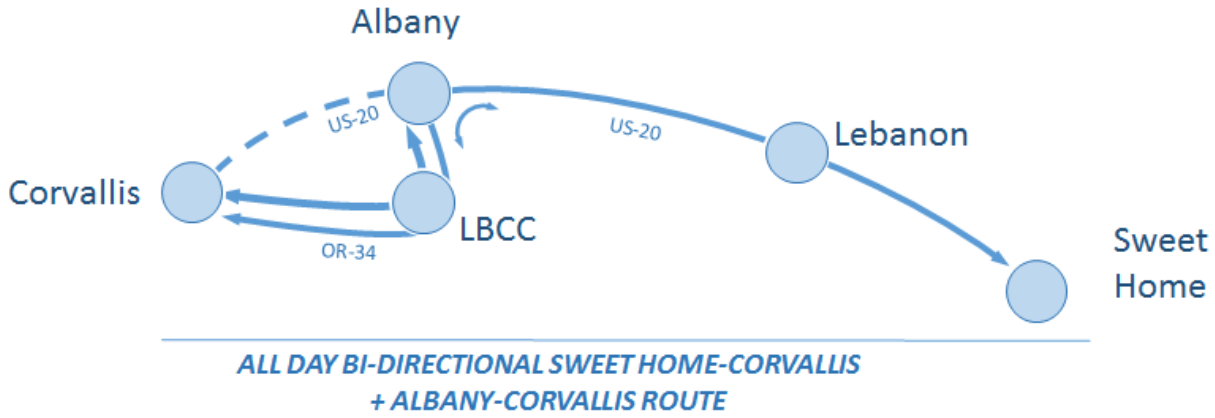
1e. Create a regional urban-to-rural intercity network between Corvallis and Sweet Home. The Loop has been ineligible for FTA Section 5311(f) funding in Oregon because it connects two urbanized areas without any rural service areas. Linking the Loop and Linn Shuttle would add a potential funding source and create benefits to bus riders in Linn and Benton Counties. A Sweet Home to Corvallis connection can integrate some runs of the Linn Shuttle and the Loop.

Peak or other additional service between Albany and Corvallis would maintain Loop frequencies offered today.

Benefits: Increased efficiency through schedule coordination and resource sharing (e.g. drivers, vehicles and planning). This could ultimately lead to increased public transportation service.

Considerations: Interagency agreements needed.

Figure 42 Sweet Home Connector Concept



2. Facilitate transfers to regional service at Albany Station

Seven regional public transportation providers serve Albany Station. Coordinating service between every bus is not possible, but further analysis can help prioritize connections and optimize the network. Figure 43 illustrates weekday departure times from Albany Station for the Loop, Cascades POINT, Linn Shuttle and Bolt Bus as an example. Passengers boarding regional service need time to make a connection. Thus, the Loop arrival time of 7:35 a.m. and Amtrak departure of 7:36 a.m. is too close for most passengers' comfort levels. AAMPO and ATS would need to determine which regional services are most desired by Albany residents, and modify Loop schedules to try and meet those services.

Benefits: Better regional connections.

Considerations: Loop is also timed for LBCC and OSU students, thus any changes to schedules must also consider student needs.

Figure 43 Selected Albany Train Station departure times, weekday

Period	Loop	Cascades POINT	Linn Shuttle	Bolt Bus	Amtrak
Morning	6:25 AM	-	-	-	6:13 AM (North)
	7:35 AM	8:10 AM (North)	7:40 AM	-	7:36 AM (South)
	8:45 AM	8:55 AM (South)	8:45 AM	8:30 AM (South)	
	-	9:35 AM (North)	-	-	
Mid-day	*None*	12:20 PM (South)	11:05 AM	10:45 AM (North)	
	LBCC - OSU only; ATS Route 3 serves LBCC	12:30 PM (North)	-	-	
		1:00 PM (South)	1:05 PM	-	1:22 PM (North)
		2:05 PM (North)	2:45 PM	-	
		3:35 PM (North)	-	3:45 PM (South)	
Afternoon	4:05 PM	5:20 PM (South)	4:15 PM	-	4:10 PM (South)
	5:40 PM	6:25 PM (North)	6:10 PM	6:00 PM (North)	4:43 PM (North)
	6:50 PM	8:40PM (South)	-	-	7:41 PM (South)
		11:59 PM (South)	-	-	

Source: Albany Transit System, Linn Shuttle, Bolt Bus, Amtrak

3. Improve coordination of services along Pacific Boulevard, Heritage Plaza

ATS, the Loop, and the Linn Shuttle all serve the Pacific Boulevard corridor from LBCC to Albany Station. Both ATS and the Linn Shuttle link Albany Station to Heritage Plaza. Table 22 illustrates the times that the various providers depart LBCC heading northbound to Albany Station. There is duplication of service at 7:25 a.m. and 8:35 a.m., and there are several other instances when service is just a few minutes apart. Yet while service is bunched up during some times of the day, there are long breaks during other key times such as 7:30 to 8:30 a.m. and 5:00 to 6:00 p.m. Working with other providers to modify timing, or modifying ATS route timing, can give passengers more evenly spaced options.

The high concentration of transit service along Pacific Boulevard and at LBCC provides many opportunities for passengers to make timed transfers between two or more services. However, many passengers or potential riders may not be aware of the time transfers. All schedule information is provided on each provider's schedule, without any indication of how the schedules are coordinated with each other. Information on timed transfers should be included on each schedule to better inform the public about the ease of connecting to other services. *Benefits*: Spreads out transit resources more evenly throughout the day.

Considerations: May require working with other agencies to shift schedules.

Table 22 Departure times from LBCC to Albany Station

Morning	
Timepoint	***Route***
7:25 AM	*Loop*
7:25 AM	*ATS 1*
7:30 AM	*Linn Shuttle*
8:30 AM	*ATS 1*
8:35 AM	*Loop*
8:35 AM	*Linn Shuttle*
9:45 AM	*ATS 3*
10:45 AM	*ATS 3*
11:05 AM	*Linn Shuttle*
11:45 AM	*ATS 3*

Afternoon	
Timepoint	***Route***
12:45 PM	*ATS 3*
1:05 PM	*Linn Shuttle*
1:45 PM	*ATS 3*
2:35 PM	*Linn Shuttle*
2:45 PM	*ATS 3*
3:45 PM	*ATS 3*
4:05 PM	*Linn Shuttle*
5:05 PM	*ATS 3*
6:00 PM	*Linn Shuttle*
6:05 PM	*ATS 3*

4. Shared marketing and information

The different public transportation services in the Albany area are a great resource. The diversity can create a challenge for riders to understand and remember information. The Loop, Linn Shuttle and ATS have opportunities to coordinate customer-facing information. Marketing and rider information strategies can include:

- Maintain consistent content requirements and information formats
- Provide connecting service information to customers in all providers' vehicles and at stations
- Share or link to a shared website "hub" with route information and service alerts

Benefits: Rider information accessibility can increase ridership and satisfaction ratings. Economies of scale when sharing resources.

Considerations: Marketing material costs may increase if adding supplemental materials and distributing to other routes. Website design and maintenance is an ongoing cost.

5. Coordinate fare policy and fare payment systems; Consider regional farecard

As noted above, the Loop, ATS, and Linn Shuttle serve some of the same corridors with different fares, which can sometimes be an obstacle for users to use the bus. Creating a single fare along corridors with multiple providers is one strategy to remove the fare burden if someone boards the Loop versus ATS.

Given the amount of travel demand between Lebanon, Sweet Home, Corvallis, and Albany, a second option would be to create a regional farecard or pass. Electronic fare technology has

changed rapidly and become more affordable per unit; should this trend continue, the costs and complexity of coordinating a regional fare card may be within reach. The Northwest Connector along the Oregon coast has a regional pass system, for example.[14]

Benefits: Rider convenience; coordinated fares.

Considerations: Coordination and management time; technology costs for electronic fare collection methods.

Capital and Assets Plan

Vehicles

The increased service hours would require ATS to purchase at least one additional vehicle in the medium-term scenario, and six more vehicles to deliver the long-term scenario. See Table 23 for estimated number of new vehicles needed to deliver the proposed service scenarios.

Table 23 Estimated Vehicle Expansion Requirements

Scenario	Vehicles Required	New Vehicles from Existing	New Vehicles from Previous Scenario	New Vehicle Cost
Existing	2	-	-	-
Short-Term	2	-	-	-
Medium-Term	3	1	1	$440,000[1]
Long-Term	8	6	5	$1.80 million[2]

Notes: [1] Assumes cost of one $440,000 40-foot low floor bus. [2] Assumes four $440,000 40-foot low floor buses and one $40,000 ADA compliant mini-van.

The costs for vehicles to support the new services are in addition to ongoing replacement costs of existing fleet for vehicles aging beyond useful life. Based upon ATS' expected replacement schedule, ATS will purchase new 40-foot buses in fiscal years 2019, 2022, and 2027, each priced at approximately $440,000 in 2017 dollars. A full list of vehicles and expected end of useful life dates is in the appendix.

[14] http://www.nworegontransit.org/passes/

Bus Stops and Amenities

As of July 2017, ATS had 17 shelters and 17 benches among its 83 stops. A stop assessment conducted in January 2013 showed that all bus stops but three are in good condition. The three benches and shelters in poor condition were installed in 1999 and are located along 34th Avenue. Transit service is removed from this street in all scenarios.

Figure 44 ATS Bus Stop with Bench and Shelter

New bus stops and passenger amenities are needed in each scenario. New corridors include roadway segments, which have no service today, segments where service will operate in the opposite direction of transit service today, and locations where new route alignments and turns may require a stop to be moved. Corridors and segments requiring new stops are listed in Table 24.

Table 24 New Segments and Corridors Served

Scenario	New Segments and Corridors
Short-Term	• Goldfish Farm Road northbound • Knox Butte Road westbound • Salem Avenue westbound Waverly Drive and Main Street • 3rd Avenue between Main Street and Lyon Street • 12th Avenue between Elm Street and Pacific Boulevard • Queen Avenue eastbound between Elm Street and Pacific Boulevard • Geary Street northbound between Queen Avenue and 14th Avenue
Medium-Term	• Knox Butte Road westbound • Salem Avenue westbound Waverly Drive and Main Street • 3rd Avenue between Main Street and Lyon Street • Waverly Drive northbound between Santiam Highway and Salem Avenue • Pacific Boulevard westbound between Geary Street and Albany Station • Santiam Highway eastbound between Clay Street and Walmart • Geary Street northbound between Queen Avenue and 14th Avenue
Long-Term	• Waverly Drive/Columbus Street northbound between Ellingson Road and 14th Avenue • Waverly Drive/Columbus Street southbound between Del Rio Avenue and Ellingson Road • Hill Street southbound between Queen Avenue and 34th Avenue • Ellingson Road between Pacific Boulevard and Columbus Street • Laura Vista Drive northbound • Squire Street eastbound • Crocker Lane southbound

Bus stop amenities enhance system visibility and passenger comfort. Table 25 lists the cost for basic bus stop amenities based on previous City transit stop improvement projects.

Table 25 Assumptions for New Bus Stop Amenities

Amenity	Cost per Amenity
Concrete Pad	$2,500
Bus Stop Pole and Sign	$500
Bench	$1,000
Shelter	$7,500

Source: City of Albany

To estimate the number of new stops, stop locations were identified on each street segment, which received new service. Ideally all stops would have all the amenities; however, that is not likely to be financially possible. Table 26 lists a cost range for each scenario. A low level of

investment assumed all stops have concrete pads, and a bus stop signs. A high level of investment assumes all stops have a concrete pad, sign, bench, and shelter.

There may be economies of scale that reduce the project delivery costs estimated below. The capital costs in the Medium and Long-Term Scenarios identify the costs of new bus stops based on existing stops, and not based on the Short-Term Scenario. The actual cost for bus stop capital needs in the Medium and Long-Term Scenarios may depend on Short-Term Scenario investments.

Table 26 Capital Costs: Bus Stops and Amenities

Scenario	Term	Stops	Low Investment	High Investment
Existing	Today	69	$172,500	$759,000
Short-Term	Short (1–3 yrs)	37	$111,000	$425,500
Medium-Term	Medium (5–10 yrs)	36	$108,000	$414,000
Long-Term	Long (15–25 yrs)	75	$225,000	$862,500

Note: Existing scenario estimate based on existing signed stops without concrete pads, benches, or shelters.

Policy on Amenity Prioritization

As funds become available, a stop amenity policy for prioritization of new shelters or other infrastructure can help ATS determine where to channel resources. The most basic metric for amenity location uses ridership levels, with the goal of helping as many riders as possible. However, additional factors may be important for ATS to consider where to prioritize the location of bus stop amenities. For example, land use context, proximity to senior centers, or proximity to health clinics may increase the need for amenities.

Table 27 outlines the recommended tiers for bus stops and investment guidelines. Three tiers are recommended based on ridership, with the fewest investment occurring at stops with less than 20 combined boardings and alightings. Stops with 50 or more boardings and alightings have the greatest level of investment. Additional amenities are optional, and can be considered based on need and funding availability.

Table 27 Bus Stops Tiers and Investment Guidelines

		Tier 1 Basic Bus Stop	Tier 2 Enhanced Stop	Tier 3 Major Stop / Transfer Location
Description		Typical neighborhood stop	- Moderate to high use stops - Park-and-rides - Shopping areas	- Highest ridership locations on the system - Transfer locations
Ridership Levels		Fewer than 20 boardings and alightings per day	20–49 boardings and alightings per day	50 or more boardings and alightings per day
Example Locations		- Salem Avenue - Waverly Drive - Hill Street	- Walmart - Samaritan Hospital - Downtown Albany	- Albany Station - Linn-Benton Community College - Heritage Plaza
Required Elements	Concrete pad	X	X	X
	Bus stop pole and sign with route information	X	X	X
	Lighting	X	X	X
	Bench	-	X	X
	Shelter	-	X	X
	Trash can	-	X	X
	System map	-	*Optional*	X
	Bicycle parking	-	*Optional*	X
	Bicycle storage (lockers or other secure facility)	-	-	*Optional*
	Restrooms	-	-	*Optional*
	Real-time arrival information	-	-	*Optional*
	Public art / place-making	-	-	*Optional*

ATS Local Financial Plan

This section presents a financial outlook for transit funding for ATS fixed-route and Call-A-Ride. Since the Loop is funded through multiple parties, it is excluded from the financial analysis.

Public transportation financial planning typically measures capital and operating costs separately. The following summary discusses expected operating costs only. Capital costs are spent as lump-sum and infrequent values, making dependable annual average revenues difficult if not impossible to predict. Capital funding grant programs are typically competitive and available only for one-time purchases or a limited duration of time, therefore these sources are relatively unpredictable.

Table 28 summarizes projected annual revenues for transit for the City of Albany in year-of-expenditure (i.e., nominal) dollars. These planning-level projections for FY 2017 to 2040 were based on the City of Albany's 2017-2018 budget to provide approximate annual financial resources by type for local transit service only. The amounts were then projected using growth assumptions by funding resource type. These assumptions do not guarantee the City to receive funding in the future. However, the projections do provide planning-level financial estimates from which stakeholders assigned priorities to guide future service planning. The assumptions include the following factors.

- State funds reflect potential revenues from the Statewide Transportation Improvement Fund[15]. This fund was part of House Bill 2017, also known as Keep Oregon Moving, which was passed by the Oregon Legislature in 2017. The fund is expected to provide over $2.0 million dollars annually to Linn County to support public transportation services, starting in fiscal year 2019.[16] The projection assumes for planning purposes only that Albany Transit System would be awarded $240,000 annually from the fund by fiscal year 2020, or about 10% of total expected funding. AAMPO and the City of Albany fully understand this figure is for planning purposes only and that any fund distribution must be approved by the Linn County Board of Commissioners following rules to be determined by ODOT.
- Federal funds increase at 2% annually;
- All other funds increase at a 3.1% inflation rate. Figures are for planning purposes only and do not relate directly to the City's annual budgeting process.Fare and pass program revenues totaled about $45,000 in FY 2016, resulting in a 6% farebox recovery ratio. This preliminary analysis assumes farebox recovery ratio will remain at existing levels as

[15] Oregon Department of Transportation program website: http://www.oregon.gov/ODOT/RPTD/Pages/STIF.aspx; accessed October 2017.
[16] House Bill 2017 Summary by Senate District, submitted by Senator Lee Byer on July 6, 2017: https://olis.leg.state.or.us/liz/2017R1/Downloads/FloorLetter/2219; accessed October 2017.

higher operating costs are offset by increased ridership. Ridership is expected to increase as Albany area population increases, and as service improvements draw more riders to use the system.

Table 28 Projected revenues, ATS Fixed-Route, Selected Fiscal Years 2017–2040

Fiscal Year Ending	Federal Funds	State	City of Albany	Directly Generated Revenues	Total
2017	$227,000	$0	$419,000	$47,000	$693,000
2020	$241,000	$240,000	$459,000	$52,000	$742,000
2025	$266,000	$280,000	$535,000	$60,000	$833,000
2030	$293,000	$326,000	$623,000	$70,000	$937,000
2035	$324,000	$379,000	$726,000	$81,000	$1,056,000
2040	$358,000	$442,000	$846,000	$95,000	$1,191,000

Source: AAMPO, ATS and Nelson\Nygaard.

Notes:

- Fiscal year end 2017 to fiscal year end 2040 (year of expenditure dollars). All values rounded to the nearest ten-thousands for clarity. Directly generated funds account for about 6.3% of annual ATS Local operating expenditures.
- State funds reflect estimated new revenues from the State Transportation Improvement Fund, available starting 2019; ODOT expects to distribute over $2,0 million in formula funds to Linn County, which is the local coordinating agency. Any funding distribution from the fund requires approval by the Linn County Board of Commissioners; there is no guarantee that Albany Transit System will receive annual financial resources from the fund.
- Directly generated revenues includes fare, pass program, and advertising revenues.

The cost of the scenarios, identified above in Table 15, includes all ATS local fixed-route operating costs. The values are high, though up to one-half the operating costs can be covered by federal operating funds through FTA Section 5307 and other grants. The other half of the funds must come from non-federal transportation sources, such as state and local funds. This is called the “local match” to the federal grant.

Although the City of Albany provides most of the local match to operate the system, the expansion of Call-A-Ride into Jefferson and Tangent would require both cities to provide their own local match for Call-A-Ride expansion.

Table 29 compares the estimated annual operating cost of each scenario with the projected revenues listed above. Based on these estimates, there is expected to be sufficient funds in the short-term. However, the medium and long-term scenarios would need additional funding to operate as they are presented in this plan.

Table 29 Comparison of Scenario Costs and Available Funding

Scenario	Timeline	Fixed Route			Call-A-Ride		
		Annual Operating Cost	Estimated Available Funding	Shortfall	Annual Operating Cost	Estimated Available Funding	Shortfall
Existing	Present	$628,000	$628,000	-	$582,000	$582,000	-
Short-Term Phase 1	1-3 years	$660,000	$742,000	-	$582,000	$582,000	-
Short-Term Phase 2	3-5 years	$848,000	$833,000	- $15,000	$655,000	$582,000	- $73,000
Medium-Term	5-10 years	$1,272,000	$833,000	- $439,000	$655,000	$582,000	- $73,000
Long-Term	15-25 years	$3,079,000	$1,056,000	- $2,023,000	$701,000	$582,000	- $119,000

Note: Values rounded to nearest $1,000.

9 Transit Policies and Programs

Successful transit systems provide balanced fare prices and pass programs, clear and relevant public information, and effective technology. These policies and programs help ensure that the system is accessible for people of all incomes, convenient, understandable, and efficient. The transit program elements apply in all future service scenarios.

Public Information and Marketing

If the public is not aware of how the system works, or how to board a bus, the public investment in the service will see few benefits. Marketing includes efforts to educate the public on where, when, and how to use transit. The following strategies elevate ATS' profile in the community.

1. **Advertise in multiple formats and channels.** Identify local community media outlets (local television stations, radio stations, newspapers, and newsletters) and other forms of social media to use to spread information and awareness about ATS. Some communities provide information on the transit service as a flyer or leaflet embedded within a city-distributed mailing that goes to all residences (such as a utility bill).
2. **Remove language barriers for Spanish-speaking riders**. Seven percent of the Albany region lives in Spanish-speaking households.[17] Maps and schedules are already available in Spanish, but adding Spanish to signage was also identified by the public as a useful piece of the system to translate. Increase the amount of staff who speak Spanish by adding bilingual abilities to job postings and targeting recruitment in Spanish-speaking neighborhoods.
3. **Offer travel training**. Travel training is another option to support transit education. Travel training is the process in which a local resident is given curated information about their specific trip needs. This includes where to board the bus, where to get off, how to read a schedule, and how to make transfers. Travel trainers also travel with the person for a few trips to help them get comfortable with the bus service. After several trips, the passenger is able to navigate the system themselves.

System Branding

Maintaining a single brand for vehicles, bus stops and materials increase the visibility of the transit service, develops public recognition and acceptance of the service, and informs the public that all services and stops work together as a single system. This is especially important for ATS

[17] Based on totals for cities of Albany, Jefferson, Millersburg, and Tangent. US Census American Community Survey 2011–2015 5-Year Estimates, Table S1601.

because it operates multiple transit service products (ATS local routes, the Loop, and Albany Call-A-Ride), and has transit service interacting closely with other transit services in the area.

ATS has indicated that it needs a refresh of their logo and branding. The best time for such a change is when there is a noticeable change in service, such as a route restructure or improvement in service frequency. ATS should consider implementing the Short-Term 60 Scenario or Medium-Term Scenario at the same time as a refresh of ATS' brand. It could help ATS to use the branding to distinguish between its service products to clarify the management, funding and operating conditions resulting in the different service and policy structures in each service.

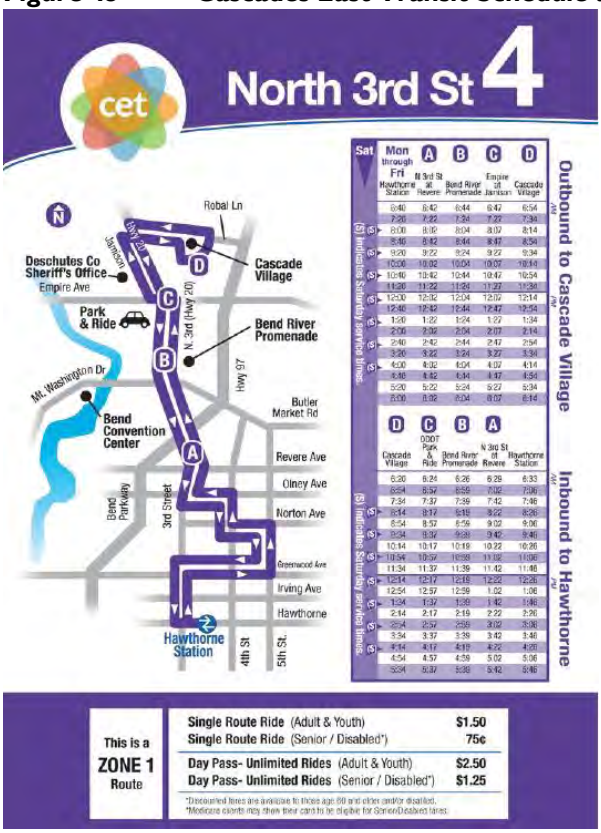
System and Route Maps

Maps and schedules are the primary tool people use to obtain information about ATS. The accessibility, legibility and simplicity of these maps and schedules enhance comprehension of the system. ATS' current map is good quality, showing all street names and indicating time points.

The following recommendation could improve the existing maps and access to information.

1. **Reduce number of timepoints to 10.** The current schedules have between 10 and 12 timepoints listed on different routes. Reducing the number of timepoints can allow an increase in font size to make the schedule more legible.
2. **Replace timepoint icons on map with numbers or letters to correspond with timepoint labels in the schedule.** Current maps show a "T" to indicate a timepoint, but do not correspond with the timepoints listed on the schedule. An example from Cascades East Transit in Bend is shown in Figure 45.

Figure 45 Cascades East Transit Schedule and Map



3. **Replace labels for points of interest with actual names of places.** Passengers consult transit maps to help them with trip planning. Identify specific destinations on the map with the actual name of the location or business (such as Fred Meyer, Walmart or Samaritan Hospital) instead of "Grocery" or "Hospital."
4. **Add more major destinations to the map.** Some major destinations, such as West Albany High School, South Albany High School, Boys & Girls Club and Linn County Public Health are not identified on the map. Use stop-level ridership or public requests to identify additional destinations.
5. **Add the Loop, or show connections to the Loop, on the map.** Many ATS passengers use the Loop, and transfers between the two services can be facilitated by clearly identifying where these connections occur.
6. **Create route-specific maps to provide details on stop locations and key destinations along the route.** In addition to a system map, passengers often want more details about an individual route's alignment, direction of travel, stop locations, and destinations. This is a lower priority recommendation.

Technology

Technology for public transportation and related travel options is changing rapidly and in ways that are difficult to predict over the long-term. ATS plans to implement some or all of the

strategies below, while maintaining a flexible approach to improving the transit system with new technologies as appropriate to the system. All new technology must be accessible and comply with the Americans with Disabilities Act (ADA). The following technology strategies will improve service delivery.

Traveler information system hardware

1. Add GPS transponders, mobile data terminals, cellular data service to traveler information system hardware. Automatic vehicle location information requires hardware, known as a global positioning system or GPS. The hardware may come included with buses and other vehicles, or be offered as an after-market product that can be installed in existing fleets. GPS equipment is also available in tablets and smartphones. The hardware emits vehicle locations constantly or at specific locations like bus stops. ATS will need cellular data service to transmit and receive data from the vehicles.
2. Add software and analytic services – in house or cloud-based – to support new vehicle location hardware systems, and configure to prepare operational and compliance-related reporting. Software allows transit agencies to receive and maintain trip data. Third-party vendors offer hardware and software packages (e.g. RouteMatch, Ecolane), or may offer modular, mix-and-match packages (e.g. Swiftly). Software typically includes trip analysis and reporting features to automate service and route evaluation functions, which can reduce administrative burdens. ATS uses RouteMatch software today to dispatch Albany Call-A-Ride trips, which has route planning and data reporting features. The data outputs and software are proprietary (i.e. not open-source) limiting integration with some hardware and neighboring transit providers.
3. Enhance website design, adding website hosting and maintenance services. A website is one public-facing software component of the information system. Websites are typically designed to be easily read on any device type (i.e. computer, tablet or smartphone) and offer adaptive user features such as spoken text and voice-enabled tools. Transit websites include specialized features such as trip planners, rider alerts and real-time bus information, and can be configured for several agencies.
4. Implement online fare payment for multi-ride tickets, explore regional online fare payment services. Public transportation providers have leveraged fare collection systems to increase customer convenience and reduce administrative and maintenance costs. There are two key fare collection technology options to consider:
    - Online fare payment lets customers purchase tickets online. Some agencies offer this for limited fare products or passes, and continue on-board fare collection. Tickets from online purchases may be printed and carried, or displayed on a smartphone.
    - Smartcards come in many different formats, generally allowing riders to store values on cards that are then used on board vehicles with electronic card readers. This can increase customer convenience, reduce boarding times, and allow for seamless regional transit fare payment.

Automatic passenger counter

5. Install automatic passenger counters. Automatic passenger counters (APC) are a technology that counts passengers who are both boarding and alighting transit vehicles through the use of electronic infrared beams or mechanical mats. This technology can reduce burdens on drivers. Boarding data can be sent in real time or downloaded at a transit center or garage.
6. Install yield signs on each fixed route vehicle. ATS drivers and riders noted slow pull-out times from bus stops in Albany due to other drivers not yielding right-of-way to the bus. Oregon law requires motorists to yield to a transit vehicle that is entering a traffic lane after stopping at a bus stop, when a yield sign is illuminated and the bus operator is signaling its intention to enter the traffic lane.[18] Vehicle equipment exists to encourage other drivers to yield to a bus. One example is a "yield" bus icon or light installed on the rear of the bus. Some communities have supplemented this with advertisements on vehicles or elsewhere, informing them about the law and traffic safety benefits.
7. Program headsigns to list only major destinations or areas consistent with service maps and schedules. ATS will consider reducing the amount of text displayed on the headsign, to improve street-side legibility. Stop announcements support transit riders who may not be able to see the street signs or who are unfamiliar with stops and technology is available to automatically announce bus stops. The announcement system may be coordinated with vehicle location technology.

Customer Information

8. Install on-board security video cameras and related data storage equipment. ATS has purchased security cameras with new vehicles and will fully equip the fleet with cameras in the next five to ten years. Cameras provide security for riders and drivers inside and outside the vehicle, and records create a simple way to provide input to security and customer service issues. ATS also plans to maintain security video at the transit stations and add to major stops as appropriate.

Fares

The base fare for ATS is $1 per trip. Transfers between Routes 2 and 3 at Albany Station or at the Jackson Street Transfer Stop are free. Fare-paying Loop passengers can also board Route 3 without any additional charge if they transfer from Loop at LBCC and travel to Albany Station.

Albany can implement a transfer system that allows passengers to transfer without any additional charge to another route within 90 minutes. This can be handled inexpensively with paper

[18] See Oregon Revised Statute 811.167

transfers, or ATS could invest in magnetic swipe cards, mobile apps and other methods to enable transfers.

In terms of how much passengers pay to use ATS, the $1.00 cost per trip is comparable to its peers. Only two agencies have one-way fares more than $1.00, with the highest rate at $1.50 per trip. Based on results from the Fall 2014 on-board passenger survey, most ATS passengers are low-income. Approximately 78% of ATS passengers had a total household income less than $35,000, and with 46% of passengers with incomes less than $10,000. Access to a personal vehicle is also a challenge for many passengers: 40% of respondents lived in households without a vehicle. A cost of $1.00 per trip provides many people with low incomes or people who don't have access to personal transportation with a low-cost option to access services, amenities and employment opportunities in Albany.

Additionally, the survey indicated that 54% of ATS passengers use a free college pass to board. This suggests than an increase in the fare is unlikely to provide a significant increase in fare revenue, as it would impact less than half of all passengers.

Therefore, it is recommended that the fares remain unchanged for the short-term. ATS is an important service that many low-income and all-purpose riders depend upon. An increase to the cost of this service is likely to place an increased financial burden on passengers, especially those who do not have access to a free fare, and may reduce overall ridership.

10 Implementation Schedule

The full suite of improvements outlined in this plan are intended to be implemented over 20 years, given the resources and coordination needed. In discrete steps, or phases, however, the Albany area's public transportation vision can begin to take shape. The phases correspond with the project stakeholders' input on service priorities and available resources. The highest priority changes are added to the short-term scenario, as are "quick win" strategies that requiring few resources to deliver good benefits. Figure 46 lists individual strategies described in Future Transit System, organized by phase and with order-of-magnitude costs or resources required noted using one to five "$" symbols.

Figure 46 Strategy Implementation Phasing

Action No.	Recommended Action	Lead Partner	*Scenario*				Cost
			Short	Medium	Long	Ongoing	
Service-related							
S-1	Implement four-route citywide service with 90-minute frequency, providing maximum geographic coverage while improving on-time performance	ATS, AAMPO	x				$
S-2	Provide continuous service from 6:30 a.m. to 6:30 p.m. on all routes	ATS, AAMPO		x	x		$$
S-3	Implement six-route citywide service at 60-minute service frequency, and add over 70% more service hours.	ATS, AAMPO		x			$$
S-4	Increase service to 30-minute frequencies on two routes, maintaining 60-minute headways on three routes	ATS, AAMPO			x		$$$$
S-5	Add peak-hour commuter route serving Albany, Jefferson, Millersburg, and Tangent; add new bus stop amenities at 11 stops serving the route.	ATS, AAMPO			x		$$$$
S-6	Expand Call-A-Ride to outlying AAMPO communities such as Tangent and Jefferson.	ATS, AAMPO			x		$$$$
S-7	Monitor public transportation operations performance and report to relevant stakeholders.	ATS, AAMPO				x	$
S-8	Facilitate simple and convenient transfers between routes by implementing a 90-minute transfer window with paper or electronic transfer tickets.	ATS, AAMPO	x	x			$

Action No.	Recommended Action	Lead Partner	*Scenario*				Cost
			Short	Medium	Long	Ongoing	
Vehicles, equipment and facilities							
C-1	Purchase replacement and enhancement buses. Explore leveraging local match funds to access unused FTA formula funds allocated	ATS, AAMPO	x				$$$$
C-2	Outfit entire fixed route and demand response fleet with security video camera and data system.	ATS, AAMPO	x				$$
C-3	Update vehicle headsigns to quickly indicate key destinations on short text cycles.	ATS, AAMPO	x				$
C-4	Implement stop amenities policy to prioritize phased investments in bus stops.	ATS, City of Albany				x	$$$
C-5	Install automatic vehicle locator or other GPS system on all vehicles, with related dispatch and data management software.	ATS, AAMPO		x			$$
C-6	Install automatic passenger counter equipment and related data management software to support ongoing performance monitoring.	ATS, AAMPO		x			$$
C-7	Develop shared regional website or other information-sharing location that is easily accessible to customers, potential customers and service providers.	ATS, AAMPO, CTS, Benton County		x			$
C-8	Explore electronic fare collection systems and online ticket sales to augment existing on-board payment systems and integrate with Linn and Benton County transit providers.	ATS, AAMPO, CTS, Benton County			x		$
C-9	Build new maintenance facility to support growing ATS fleet and maintain state-of-good-repair	ATS, AAMPO			x		$$$$$
Public information and marketing							
M-1	Update ATS maps, schedules and other marketing material, including rebranding efforts	ATS, AAMPO	x				$
M-2	Maintain all materials in Spanish; add other languages as need is reflected in Title VI plan	ATS, AAMPO	x				$
M-3	Grow and maintain the travel training program to support new and special needs customers	CWCOG, ATS	x			x	$

Action No.	Recommended Action	Lead Partner	*Scenario*				Cost
			Short	Medium	Long	Ongoing	
Regional Services							
R-1	Improve connections between regional transit services and ATS in the City of Albany.	ATS, AAMPO	x				$
R-2	Loop: explore a two-route concept, with one bi-directional route on Highway 34, peak-hour service on Highway 20	Loop Board			x		$$
R-3	Loop: explore bi-directional loop concept, with clockwise and counter-clockwise loops running all day on highways 34 and 20	Loop Board			x		$$
R-4	Loop and Linn Shuttle: explore a Sweet Home to Corvallis connector concept by joining the Linn Shuttle and Loop into a seamless route, keeping existing service with an Albany-Corvallis route coordinated to offer greater frequency throughout the day.	Loop Board; Sweet Home Senior Center			x		$$
R-5	Explore improving transfer times to major regional bus and train service at Albany Station	AAMPO, ATS, ODOT, Loop Board			x		$

Notes: Order-of-magnitude costs in the "Cost" column are represented by the "$" symbols ranging from 1 (low) to 5 (high).

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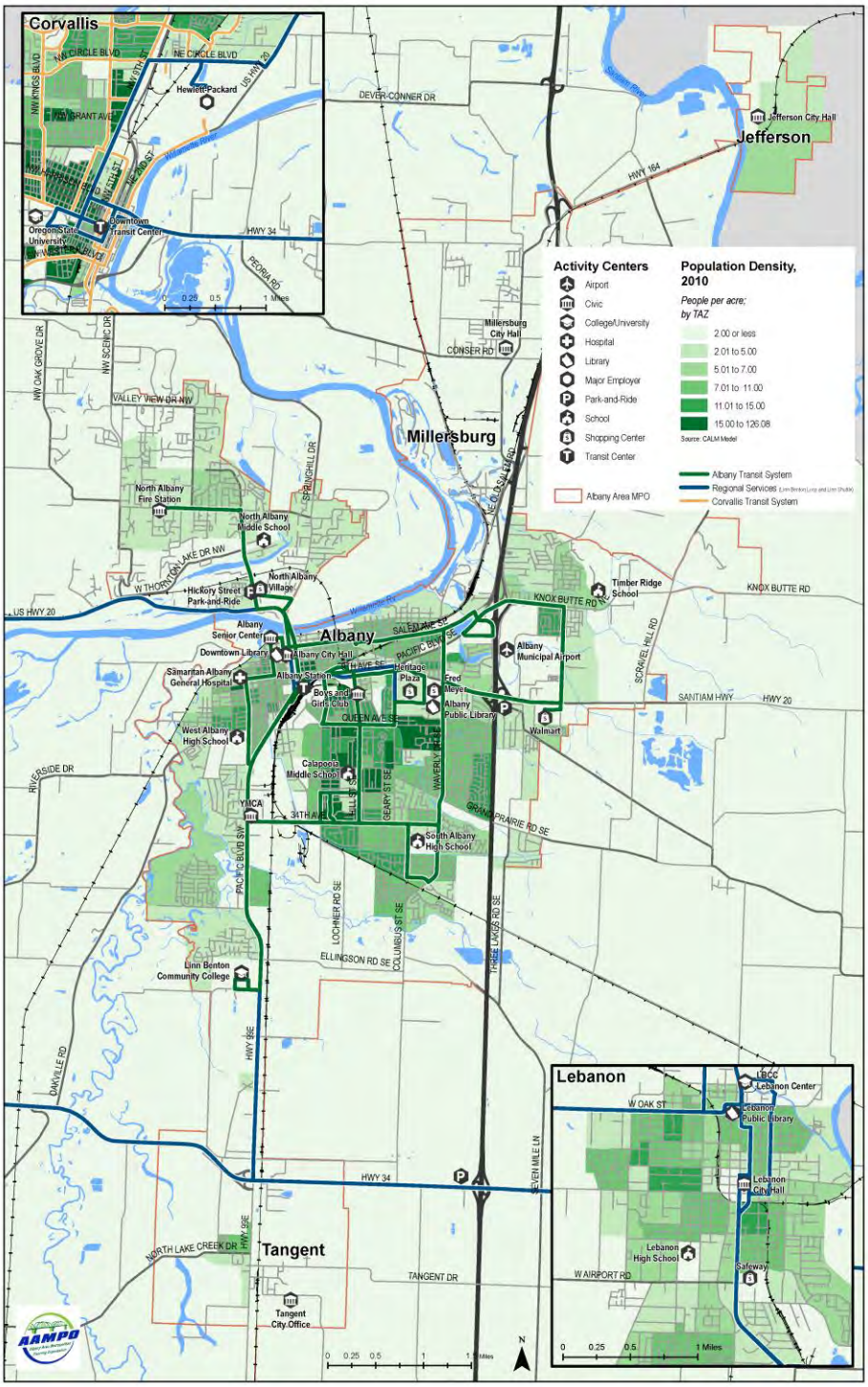
Appendix A – Service Area Profile

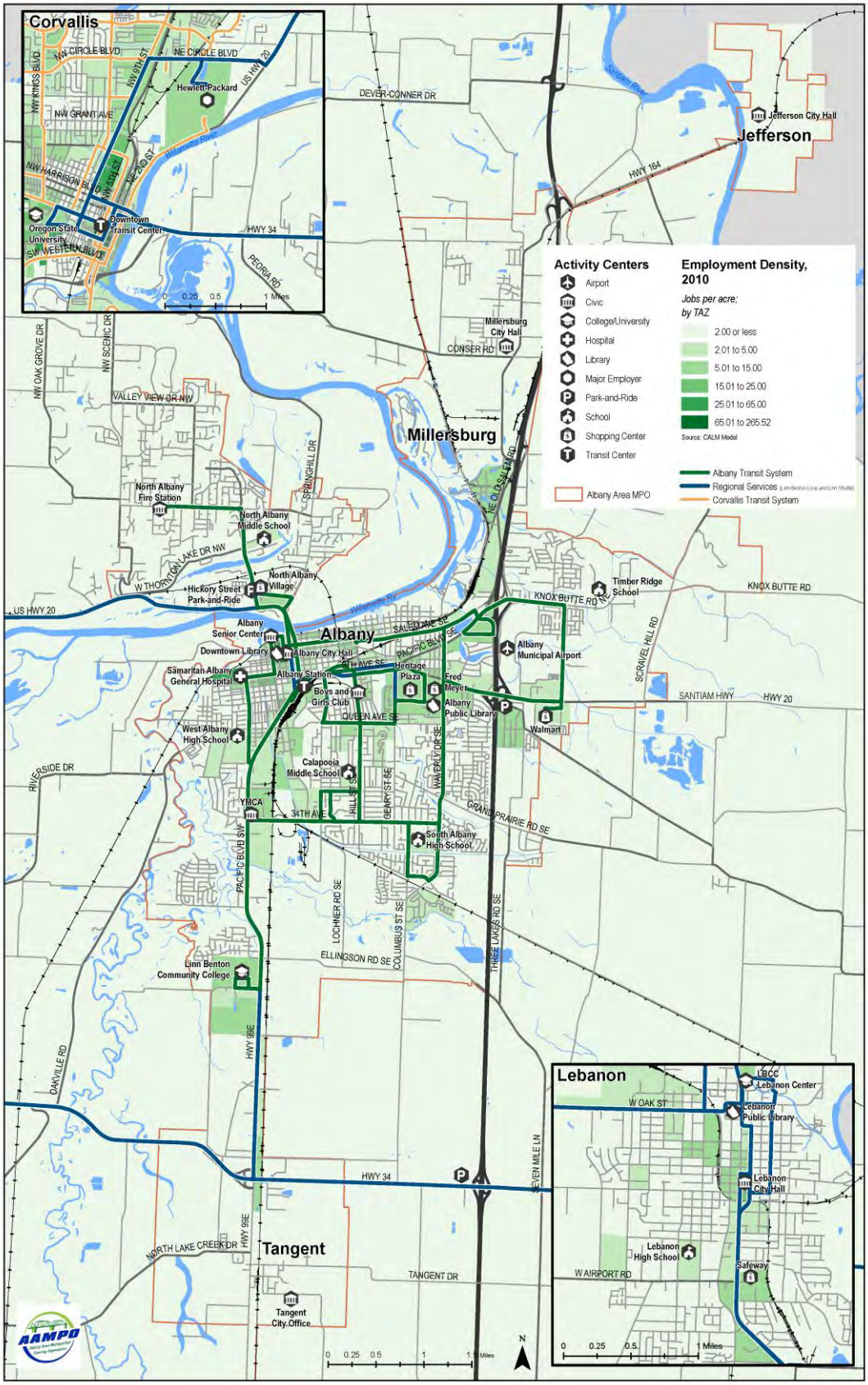
Population and Employment Density

Figure 1 Population Density, 2010



Source: CALM Model

Figure 2 Employment Density, 2010



Source: CALM Model

Demographic Trends Data Sources

Table 1 Source Files for Demographic Data

Demographic Category	2000	2010	2015
Total population	2000 US Census Table P001	2010 US Census Table P1	2011-2015 ACS 5-Yr Est Table B01003
Age (Youth and Older Adults)	2000 US Census Table P012	2010 US Census Table P12	2011-2015 ACS 5-Yr Est Table B01001
Hispanic/Latino	2000 US Census Table P4	2010 US Census Table P4	2011-2015 ACS 5-Yr Est Table B03003
People of Color	2000 US Census Table P4	2010 US Census Table P9	2011-2015 ACS 5-Yr Est Table B03002
Low-Income Population	2000 US Census Table P087	2006-2010 ACS 5-Yr Est Table B17001	2011-2015 ACS 5-Yr Est Table B17001
Persons with a Disability	2000 US Census Table P042	2008-2010 ACS 3-Yr Est Table B18101	2011-2015 ACS 5-Yr Est Table B18101
Households Without a Vehicle	2000 US Census Table H044	2006-2010 ACS 5-Yr Est Table B08201	2011-2015 ACS 5-Yr Est Table B08201
Population Speaking English less than "well"	2000 US Census Table P019	2006-2010 ACS 5-Yr Est Table B16004	2011-2015 ACS 5-Yr Est Table B16004

Top Commuting Destinations

Table 2 lists the top 10 home location of people who work in Albany and Table 3 lists the top 10 work locations of Albany residents.

Table 2 Top Home Locations of Albany Employees (2014)

Home Location	Rank	Number	Percent
Albany	1	6,861	35.5%
Corvallis-Philomath	2	1,323	6.8%
Salem-Keizer	3	1,146	5.9%
Lebanon	4	993	5.1%
Portland metro area	5	897	4.6%
Eugene-Springfield	6	472	2.4%
Sweet Home	7	245	1.3%
Monmouth-Independence	8	200	1.0%
Millersburg	9	168	0.9%
Jefferson	10	157	0.8%
Tangent	16	94	0.5%
All other locations	-	6,790	35.1%
Total Albany Workers	**-**	**19,346**	**100.0%**

Source: US Census Bureau, LEHD

Table 3 Top Work Locations of Albany Residents (2014)

Work Location	Rank	Number	Percent
Albany	1	6,861	30.6%
Corvallis-Philomath	2	3,633	16.2%
Salem-Keizer	3	2,188	9.8%
Portland metro area	4	1,980	8.8%
Eugene-Springfield	5	1,201	5.4%
Lebanon	6	584	2.6%
Millersburg	7	460	2.1%
Tangent	8	212	0.9%
Bend	9	134	0.6%
Medford	10	128	0.6%
Jefferson	25	22	0.1%
All other locations	-	5,025	22.4%
Total Albany Working Residents	**-**	**22,428**	**100.0%**

Source: US Census Bureau, LEHD

Albany Area Travel Patterns

Table 4 Sub-Area Zones and Trip Generators

Sub- Area Zone	Description	Major Trip Generators
East Albany	Within Albany, east of I-5	Walmart, Albany Municipal Airport, Timber Ridge School
North Albany	Within Albany, north of Willamette River	North Albany Village, Park-and-Ride, North Albany Middle School
NW Albany	North of Queen Avenue, west of Jackson Street	Downtown, Samaritan Hospital, Senior Center, Albany Station
NE Albany	North of Queen Avenue, east of Jackson Street	Heritage Plaza, Fred Meyer, Albany Library,
SW Albany	South of Queen Avenue, west of Marion Street	West Albany High School, YMCA, Linn Benton Community College (LBCC)
SE Albany	South of Queen Avenue, east of Marion Street	South Albany High School, Calapooia Middle School, Jackson Street transfer point

Table 5 Flows with the Most Growth between 2010 and 2040

Rank	A	B	2010	2040	Change	% Change
1	Jefferson	Millersburg	21	114	93	449%
2	Millersburg	Millersburg	17	88	71	418%
3	Jefferson	Jefferson	94	484	390	415%
4	Jefferson	East Albany	20	81	61	300%
5	East Albany	East Albany	191	712	521	273%
6	Jefferson	SW Albany	26	87	62	242%
7	Jefferson	Tangent	3	10	7	187%
8	Jefferson	NW Albany	31	82	51	162%
9	Millersburg	East Albany	69	181	111	160%
10	East Albany	SW Albany	118	305	188	160%
11	Jefferson	North Albany	12	27	16	132%
12	Jefferson	SE Albany	31	71	39	126%
13	Jefferson	NE Albany	110	247	137	124%
14	SW Albany	SW Albany	390	864	473	121%
15	Tangent	East Albany	15	32	17	112%

Source: CALM Model

Appendix B – Transit Services Today

Vehicle Replacement Schedule

Table 6 Vehicle Replacement Schedule

Vehicle Number	Year	Make	Model	Length	Seating Capacity	Useful Life		Disposal Year		Estimated Replacement Cost
						Years	Miles	Eligible	Estimated	
Albany Transit System (ATS)										
455-05	2005	Gillig	Low-Floor	35 ft.	34	12	500,000	2017	2019	$540,000
480-10	2010	ElDorado	EZ Ride II	35 ft.	36	12	500,000	2022	2022	$540,000
481-15	2015	Gillig	Low Floor	35 ft.	34	12	500,000	2027	2027	$540,000
Linn-Benton Loop (Loop)										
431-10	2010	ElDorado	EZ Ride II	35 ft.	36	12	500,000	2022	2022	$540,000
432-15	2014	Gillig	Low Floor	40 ft.	36	12	500,000	2026	2026	$540,000
Albany Call-A-Ride										
820-11	2015	Dodge	G. Caravan	<20 ft.	4	4	100,000	2015	2021	$50,000
823-09	2011	Ford	Cutaway E-450	20 ft.	12	5	150,000	2014	2019	$90,000
825-11	2009	Dodge	G. Caravan	<20 ft.	3	4	100,000	2015	2021	$50,000
826-11	2011	Dodge	G. Caravan	<20 ft.	3	4	100,000	2015	2021	$50,000
827-08	2011	Chevy	Uplander	<20 ft.	3	4	100,000	2012	2018	$50,000
830-10	2008	Dodge	G. Caravan	<20 ft.	3	4	100,000	2014	2020	$50,000
831-14	2010	Ford	Cutaway	25 ft.	20	7	200,000	2021	2021	$150,000

Source: Albany Transit System. Values in 2017 dollars based on average vehicle costs in the Oregon State Price Agreement Vehicle Contract Crosswalk, 2017

Bus Stop Amenity Inventory

Table 7 Bus Stop Amenity Inventory

Location	Shelter Size	Bench Size	Year	Condition	Useful life
North Albany and Hickory	10 x 5	2 x 4	2011	Good	2031
2nd and Broadalbin	10 x 5	2 x 4	2011	Good	2031
2nd and Broadalbin	10 x 5	2 x 4	2009	Good	2029
11th and Elm	8 x 4	2 x 4	2011	Good	2031
36th and Pacific	8 x 4	2 x 4	2011	Good	2031
College Park and Pacific	10 x 5	2 x 4	2011	Good	2031
Pacific and 34th (on 34th)	8 x 4	built in	1999	Poor	2019
34th by Oromet	8 x 4	built in	1999	Poor	2019
34th and Marion	8 x 4	built in	1999	Poor	2019
Pacific @ YMCA	8 x 4	2 x 4	2011	Good	2031
Waverly at Fred Meyer	9 x 4	2 x 4	2011	Good	2031
34th and Oak	10 x 5	2 x 4	2011	Good	2031
32nd and Jackson	12 x 4	2 x 4	2011	Good	2031
Hill and 24th	10 x 5	2 x 4	2011	Good	2031
Hill St @ Boys and Girls Club	10 x 5	2 x 4	2011	Good	2031
Clay St at Heritage Mall	9 x 4	2 x 4	2011	Good	2031
Queen and Geary	10 x 5	2 x 4	2011	Good	2031

Source: Albany Transit System

Appendix C – Operations Analysis

Route Profiles

Route 1 – Early Morning

Figure 3 Route 1 Route Summary

Route 1 Weekday		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	61	61	2.0	30.5	40%	0%	60%	50	Pacific & 35th &	L
	By Segment										
1	Albany Station to N. Albany Fire Station	4		0.3	12.0	50%		50%			
2	N. Albany Fire Station to Salem & Sherman	8	1	0.3	24.0	50%		50%			
3	Salem & Sherman to Waverly @ Fred Meyer	3		0.2	18.0	50%		50%			
4	Waverly @ Fred Meyer to Hill & 28th	12	4	0.2	72.0	50%		50%			
5	Hill & 28th to Hill & 12th (Boys & Girls) &	12	3	0.2	72.0	50%		50%			
6	Hill & 12th (Boys & Girls) & to 2nd & Broadalbin	2		0.2	12.0	50%		50%			
7	2nd & Broadalbin to Elm & 7th (Hospital)	5	2	0.2	30.0			50%			
8	Elm & 7th (Hospital) to LBCC	12	2	0.3	36.0	50%		50%			
9	LBCC to Albany Station	3	49	0.2	18.0			100%			
	By Time Period										
	AM	61	61	2.0	30.5				50	Pacific & 35th &	L

Figure 4 **Route 1 Running Time by Trip**

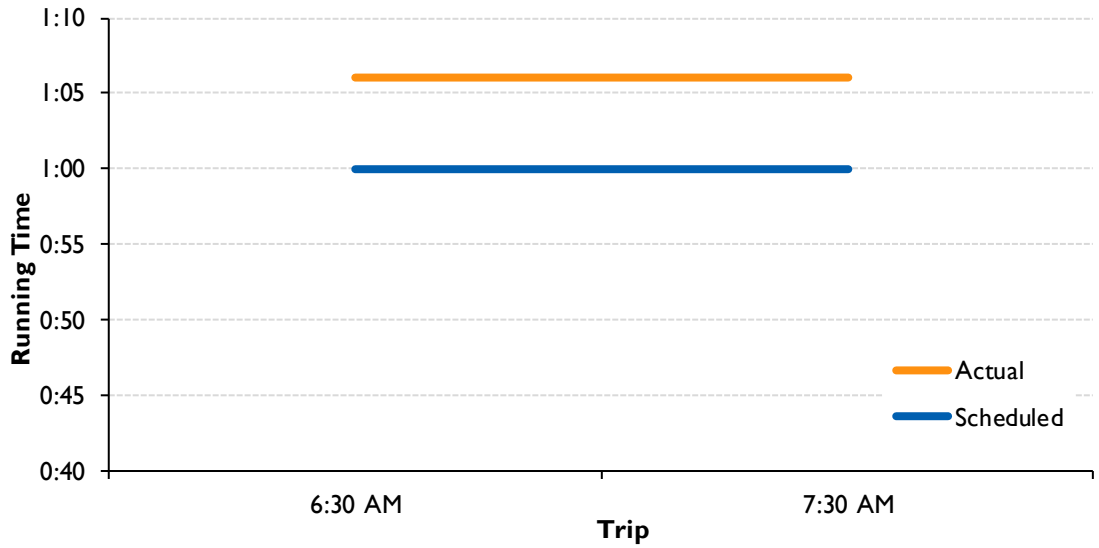


Figure 5 **Route 1 Ridership by Trip**

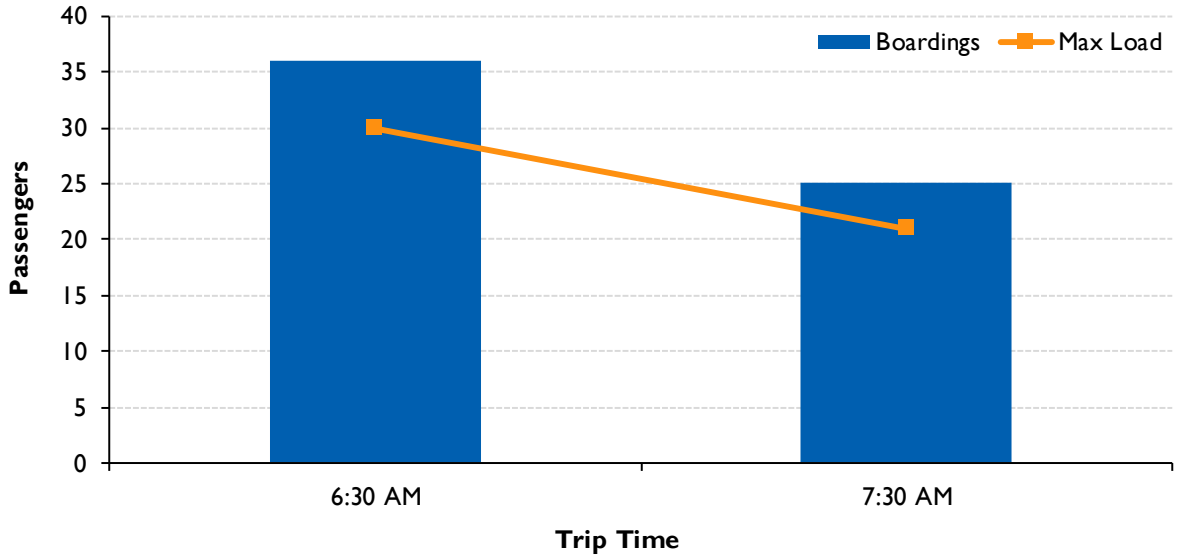


Figure 6 **Route 1 On-Board Load by Stop**

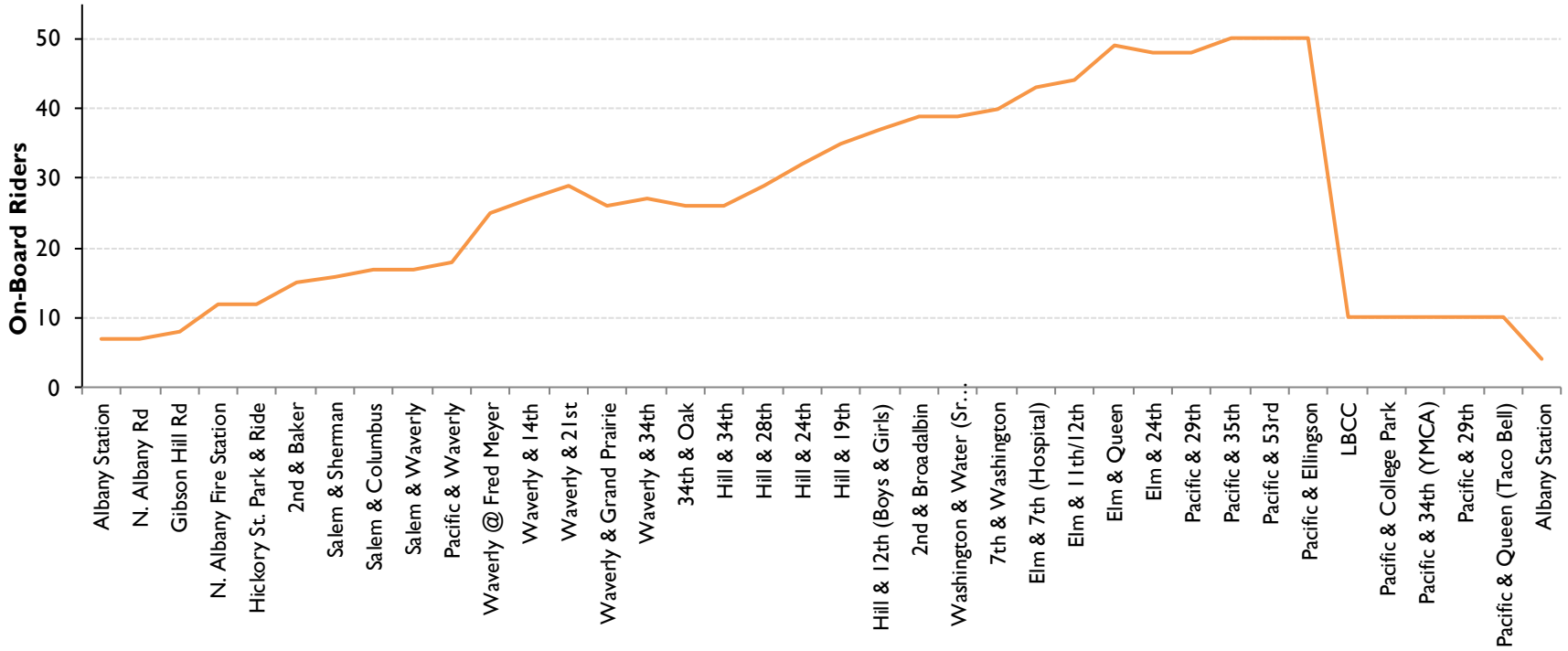
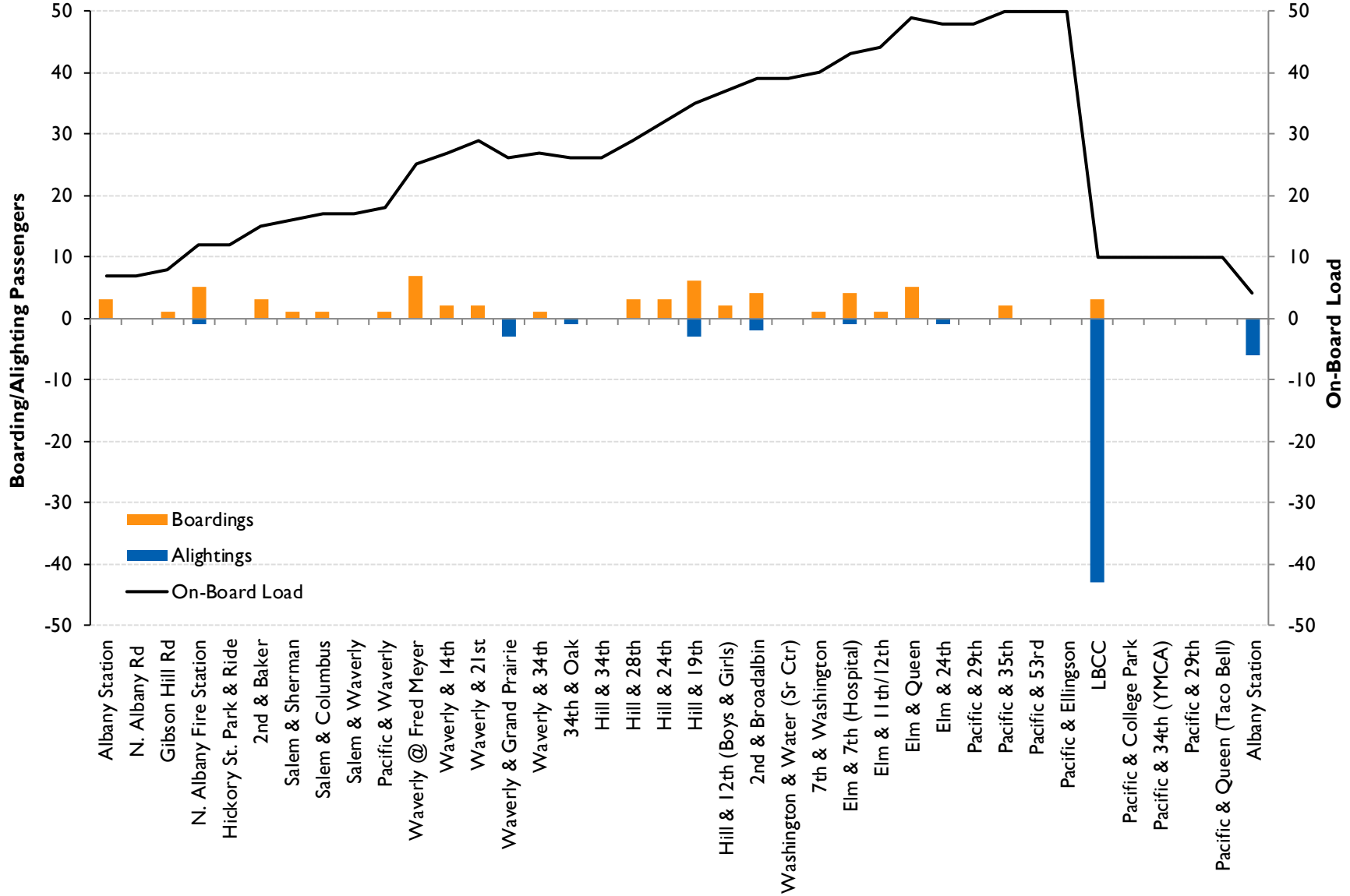


Figure 7 **Route 1 Boardings and Alightings by Stop**



Route 2 – Regular Service (East)

Figure 8 Route 2 Route Summary

Route 2 Weekday		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	207	213	8.9	23.3	69%	6%	25%	96	Knox Butte/GFF &	L
	By Segment										
1	Albany Station to Salem & Waverly	67	20	1.1	63.8	89%		11%			
2	Salem & Waverly to Wal-Mart	20	16	1.6	12.1	89%		11%			
3	Wal-Mart to Waverly @ Fred Meyer	12	32	0.7	16.0	78%		22%			
4	Waverly @ Fred Meyer to Jackson & 32nd (Transfer)	42	49	1.9	21.5	89%		11%			
5	Jackson & 32nd (Transfer) to Hill & 12th (Boys/Girls Club) &	27	35	0.6	45.0	67%		33%			
6	Hill & 12th (Boys/Girls Club) & to Clay @ Heritage Mall	3	12	0.8	4.0	67%		33%			
7	Clay @ Heritage Mall to Jackson & 11th (Linn Co. Jail)	36	27	0.8	48.0			75%			
8	Jackson & 11th (Linn Co. Jail) to Albany Station		22	1.4		44%	44%	11%			
	By Time Period										
	Midday	145	150	6.0	24.2				74	Knox Butte/GFF &	L
	PM	62	63	2.9	21.5				29	2nd & Baker &	L

Figure 9 **Route 2 Running Time by Trip**

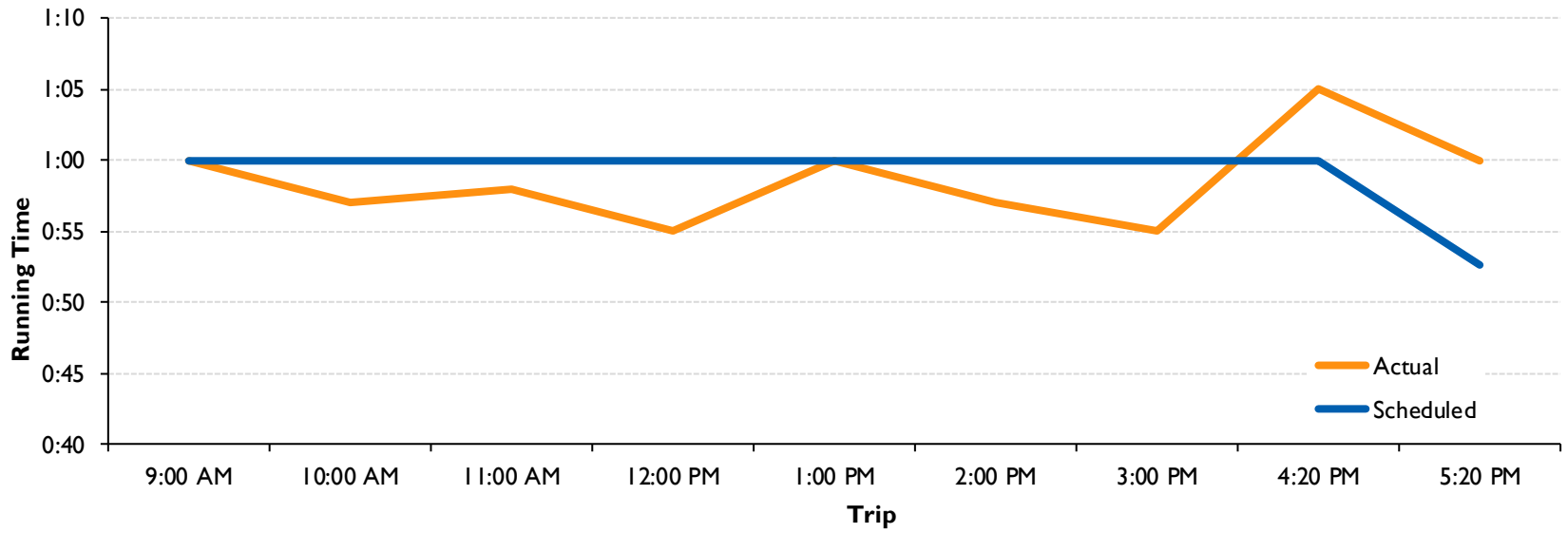


Figure 10 **Route 2 Ridership by Trip**

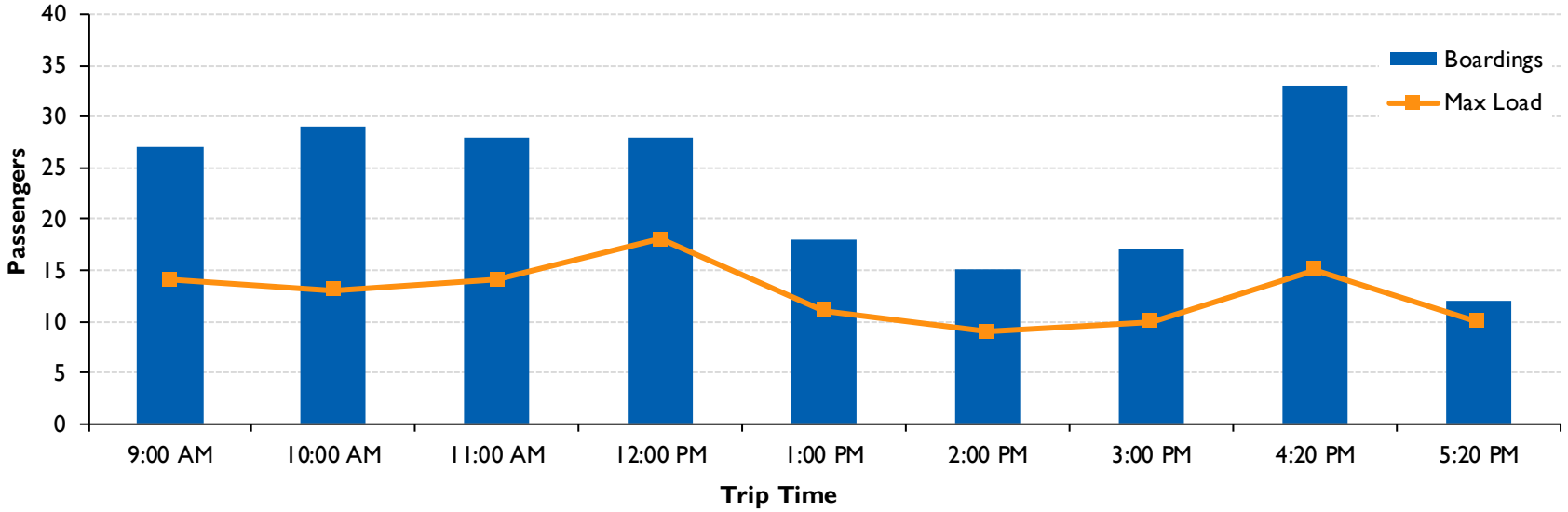


Figure 11 Route 2 On-Board Load by Stop and Time of Day

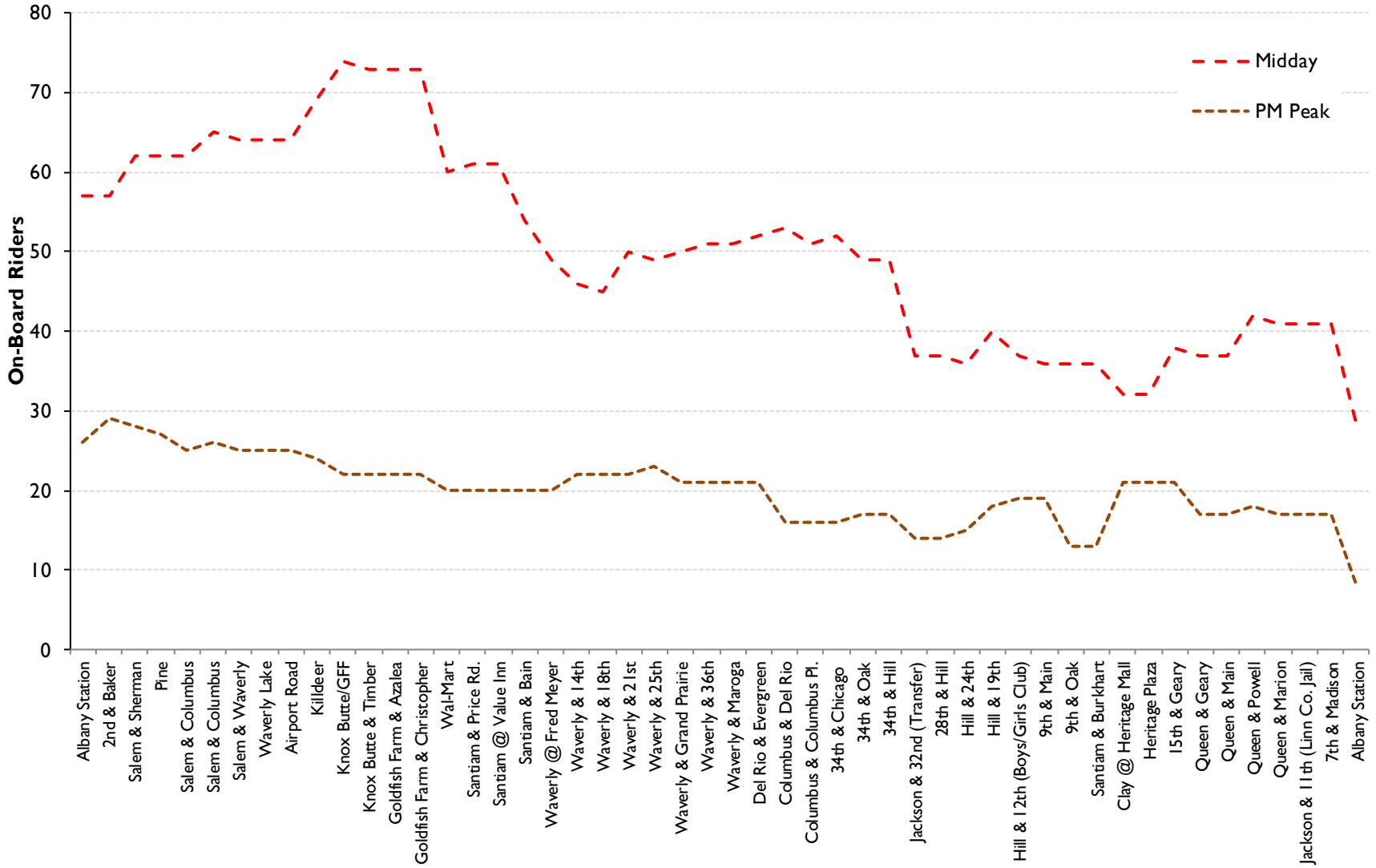
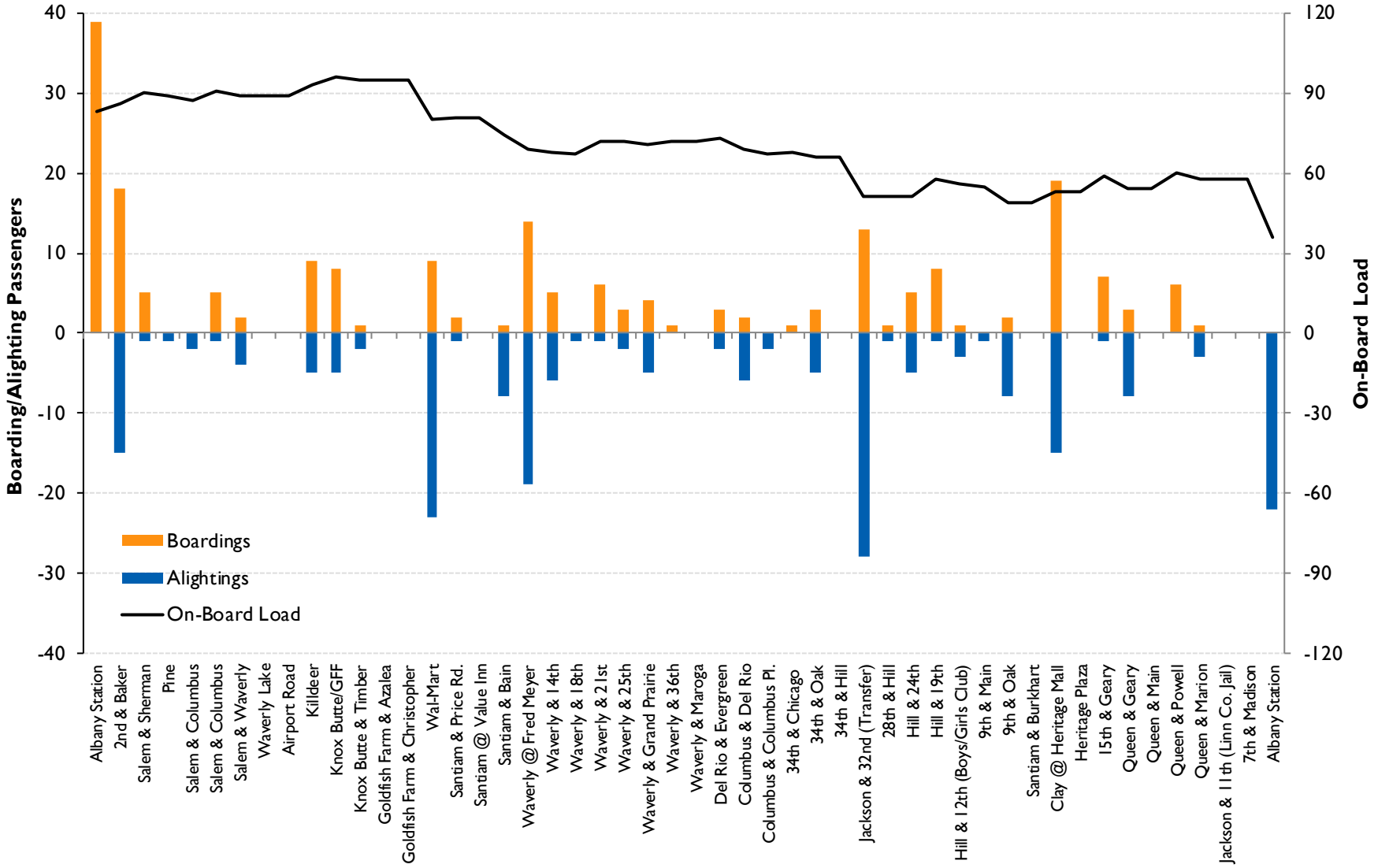


Figure 12 Route 2 Boardings and Alightings by Stop



Route 3 – Regular Service (West)

Figure 13 Route 3 Route Summary

Route 3 Weekday		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	182	182	8.9	20.5	41%	33%	26%	93	Pacific & College Park &	L
	By Segment										
1	Albany Station to N. Albany Fire Station	23	4	1.3	17.3	38%	25%	38%			
2	N. Albany Fire Station to Hickory St. Park & Ride		2	0.5		50%	25%	25%			
3	Hickory St. Park & Ride to 2nd & Broadalbin	3	1	1.1	2.6	56%	33%	11%			
4	2nd & Broadalbin to 7th & Elm (Hospital)	18	6	0.7	24.0	44%	44%	11%			
5	7th & Elm (Hospital) to Jackson & 32nd (Transfer) &	13	17	1.6	7.9	44%	56%				
6	Jackson & 32nd (Transfer) & to Pacific & 34th (YMCA)	124	77	2.1	59.0	44%		56%			
7	Pacific & 34th (YMCA) to Albany Station	1	75	1.4	0.7	11%	67%	22%			
	By Time Period										
	Midday	148	146	6.0	24.7				69	Pacific & College Park &	L
	PM	34	36	2.9	11.8				25	LBCC &	L

Figure 14 **Route 3 Running Time by Trip**

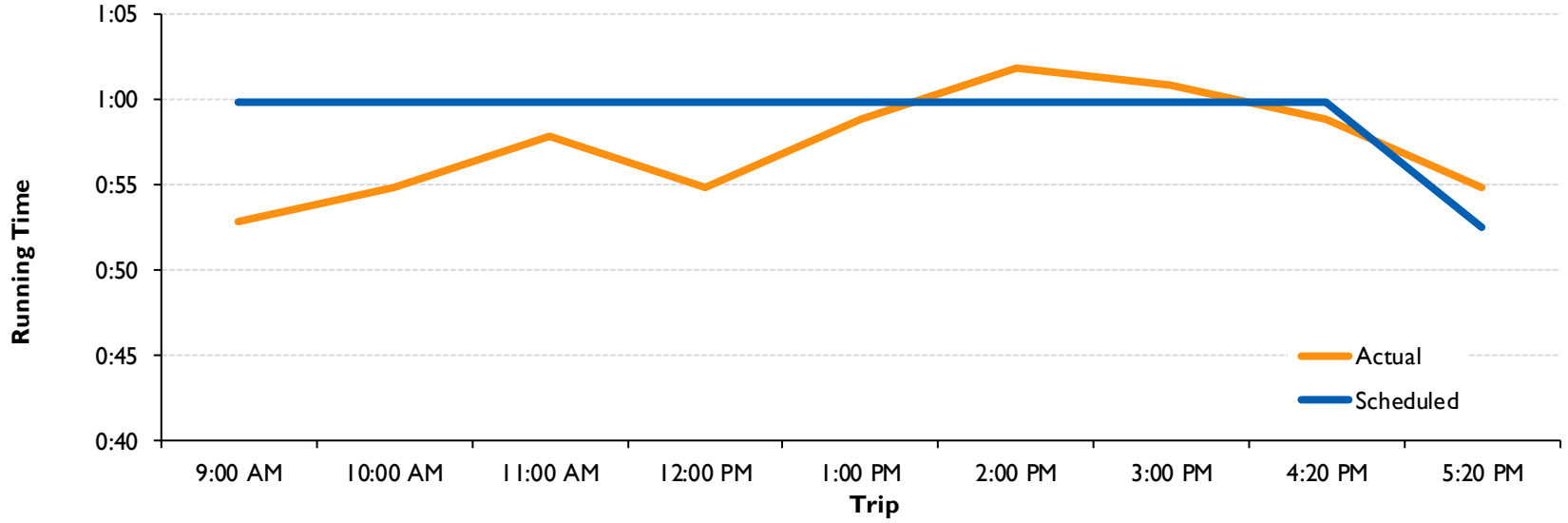


Figure 15 **Route 3 Ridership by Trip**

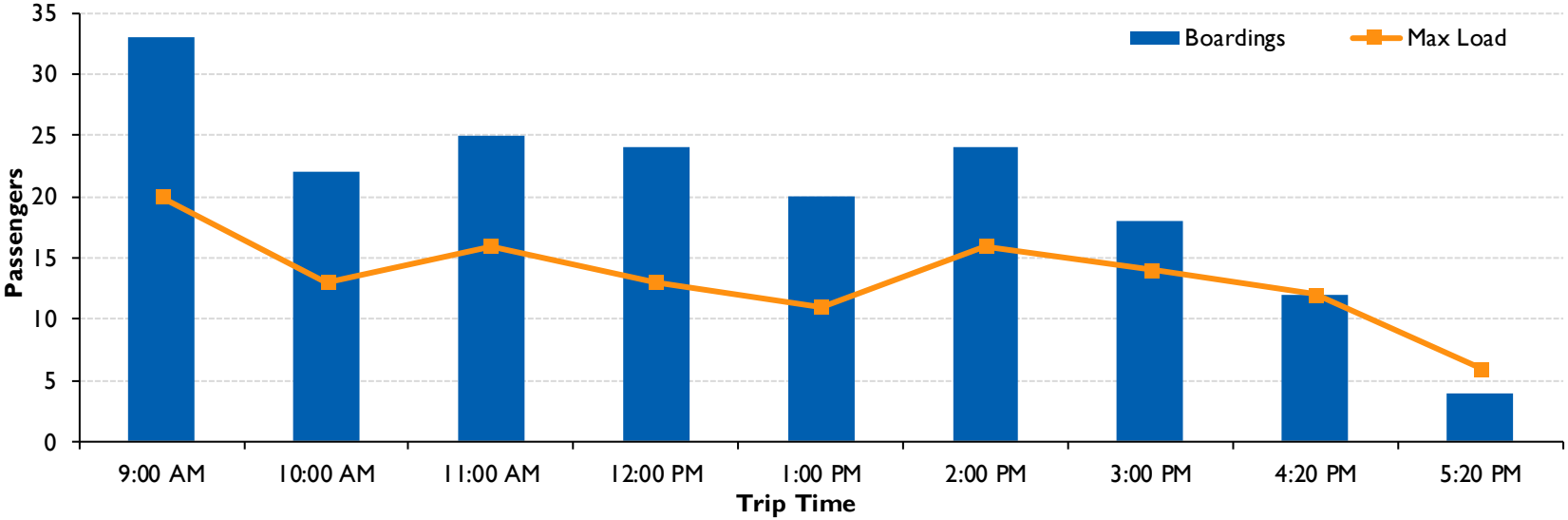


Figure 16 **Route 3 On-Board Load by Stop and Time of Day**

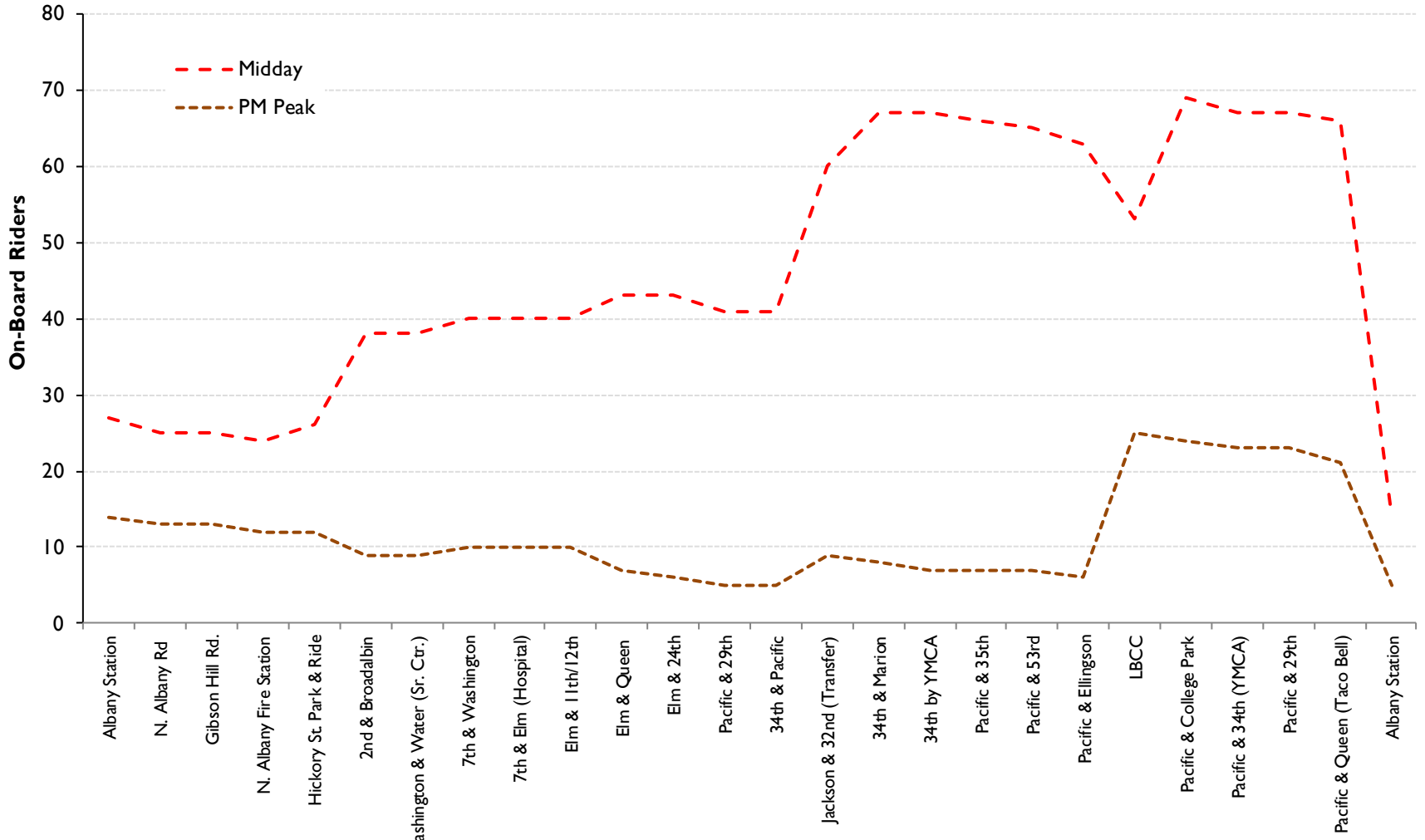
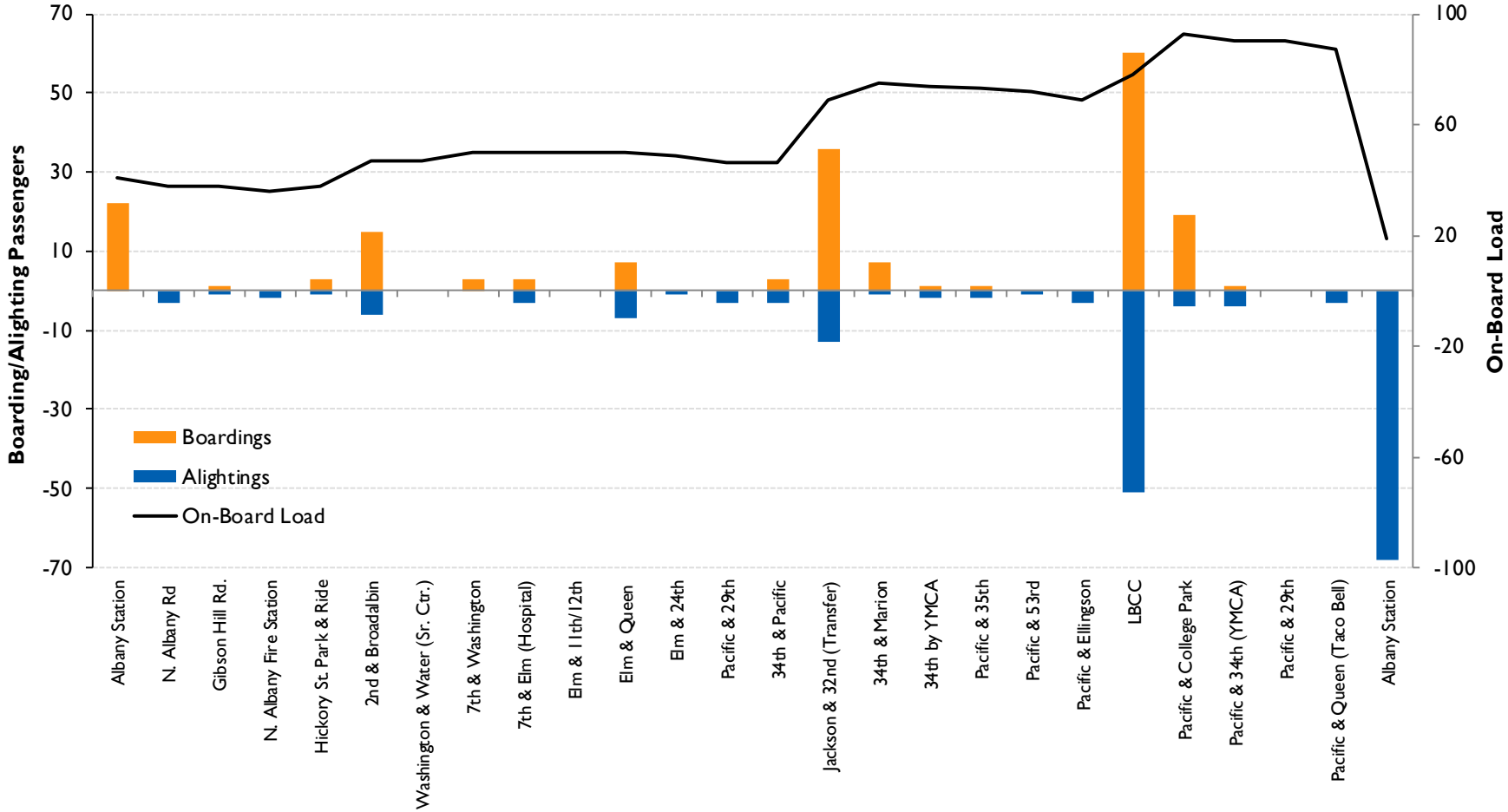


Figure 17 Route 3 Boardings and Alightings by Stop



Linn-Benton Loop

Figure 18 Loop AM/PM Loop Summary

Linn-Benton AM-PM Weekday		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	315	314	7.1	44.2	83%	11%	6%	97	5th and Monroe &	C
	By Segment										
1	Albany Station to 2nd & Broadalbin	41	34	0.5	83.1	60%	40%				
2	2nd & Broadalbin to N. Albany Park and Ride	9	20	0.3	30.0	25%	75%				
3	N. Albany Park and Ride to Hewlett-Packard	34	10	1.5	22.7	20%	60%	20%			
4	Hewlett-Packard to OSU 14th & Jefferson	50	54	1.5	34.5	40%	60%				
5	OSU 14th & Jefferson to 5th and Monroe &	62	72	0.5	122.4	80%	20%				
6	5th and Monroe & to LBCC	98	23	2.1	47.8	80%	20%				
7	LBCC to Albany Station	21	101	0.8	25.2	86%	14%				
	By Time Period										
	AM	98	94	2.3	42.0				54	5th and Monroe &	C
	Midday	53	57	1.3	40.8				43	5th and Monroe &	C
	PM	117	114	2.2	54.0				68	LBCC &	C
	Eve	47	49	1.3	35.3				27	LBCC &	C

Figure 19 Loop Midday Summary

Linn-Benton Midday Weekday		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	301	301	3.7	81.4	75%	0%	25%	171	LBCC &	L
	By Segment										
1	LBCC to OSU-14th & Jefferson	172	48	1.6	106.4			100%			
2	OSU-14th & Jefferson to 5th & Monroe	70	96	0.4	168.0	50%		50%			
3	5th & Monroe to LBCC	59	157	1.7	35.4	100%					
	By Time Period										
	Midday	301	301	3.7	81.4				171	LBCC &	L

Figure 20 Loop AM/PM Express Summary

Linn-Benton Loop AM/PM Express		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	126	126	4.1	30.9	50%	42%		66	5th & Monroe &	L
	By Segment										
1	LBCC to 5th & Monroe	60		1.8	32.7	25%	75%				
2	5th & Monroe to LBCC	66	126	2.3	29.3	50%	50%				
	By Time Period										
	AM	72	72	2.1	34.6				59	5th & Monroe &	L
	PM	54	54	2.0	27.0				47	LBCC &	L

Figure 21 **Loop Weekday Running Time by Trip**

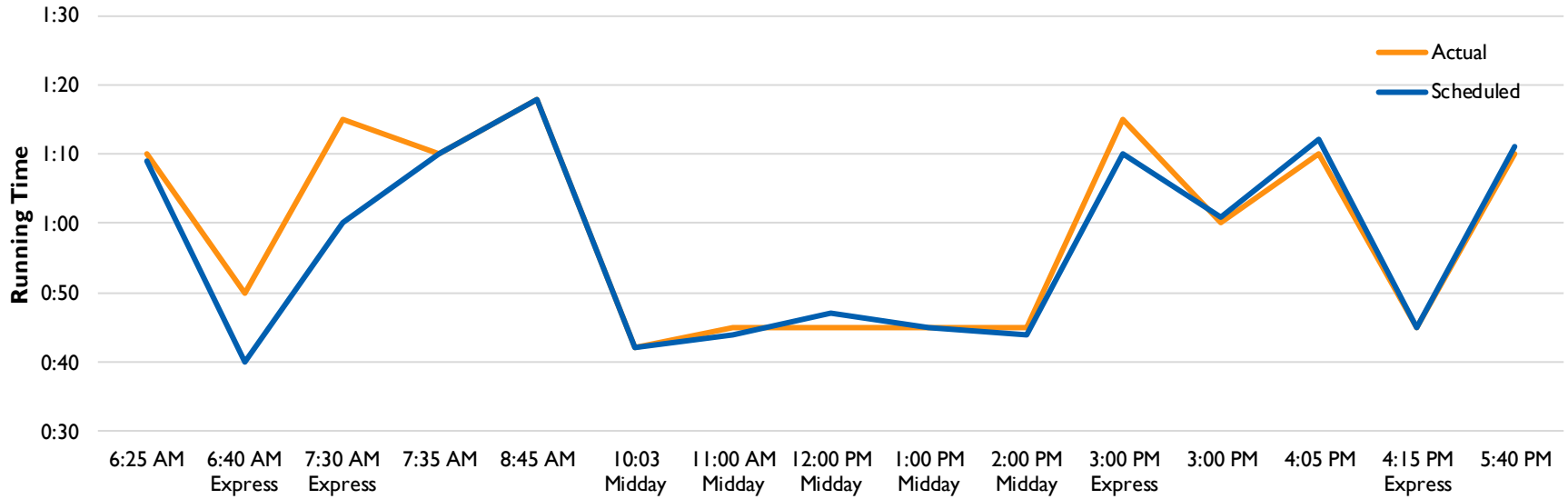


Figure 22 **Loop Weekday Ridership by Trip**

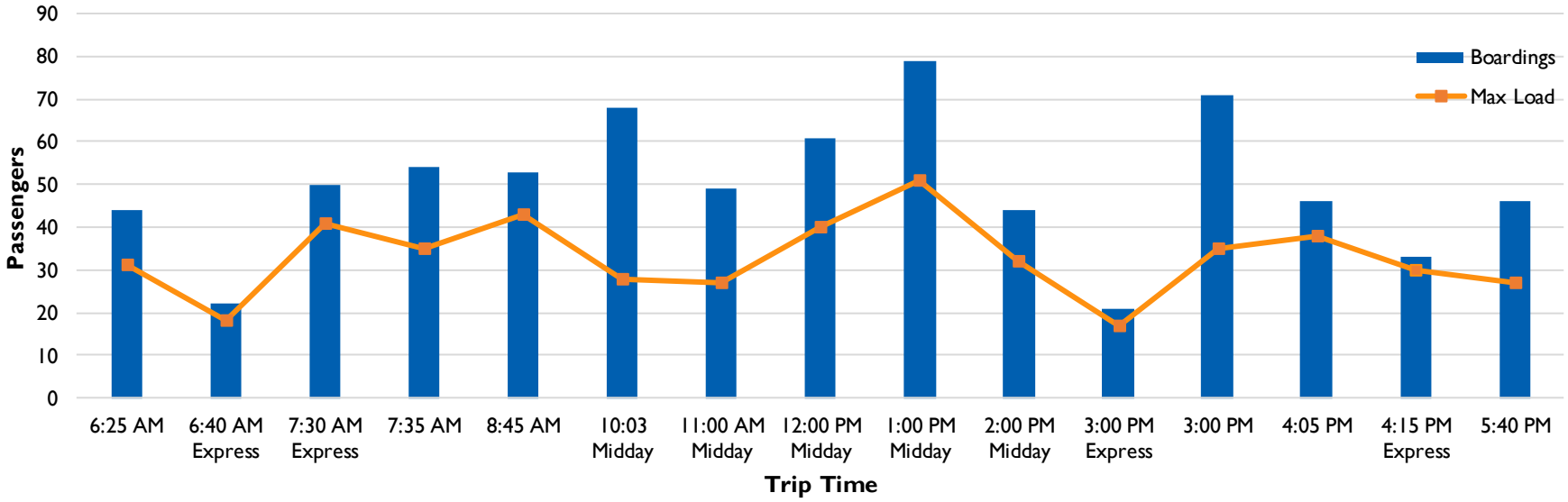


Figure 23 Loop (AM and PM Loops) On-Board Load by Stop and Time of Day

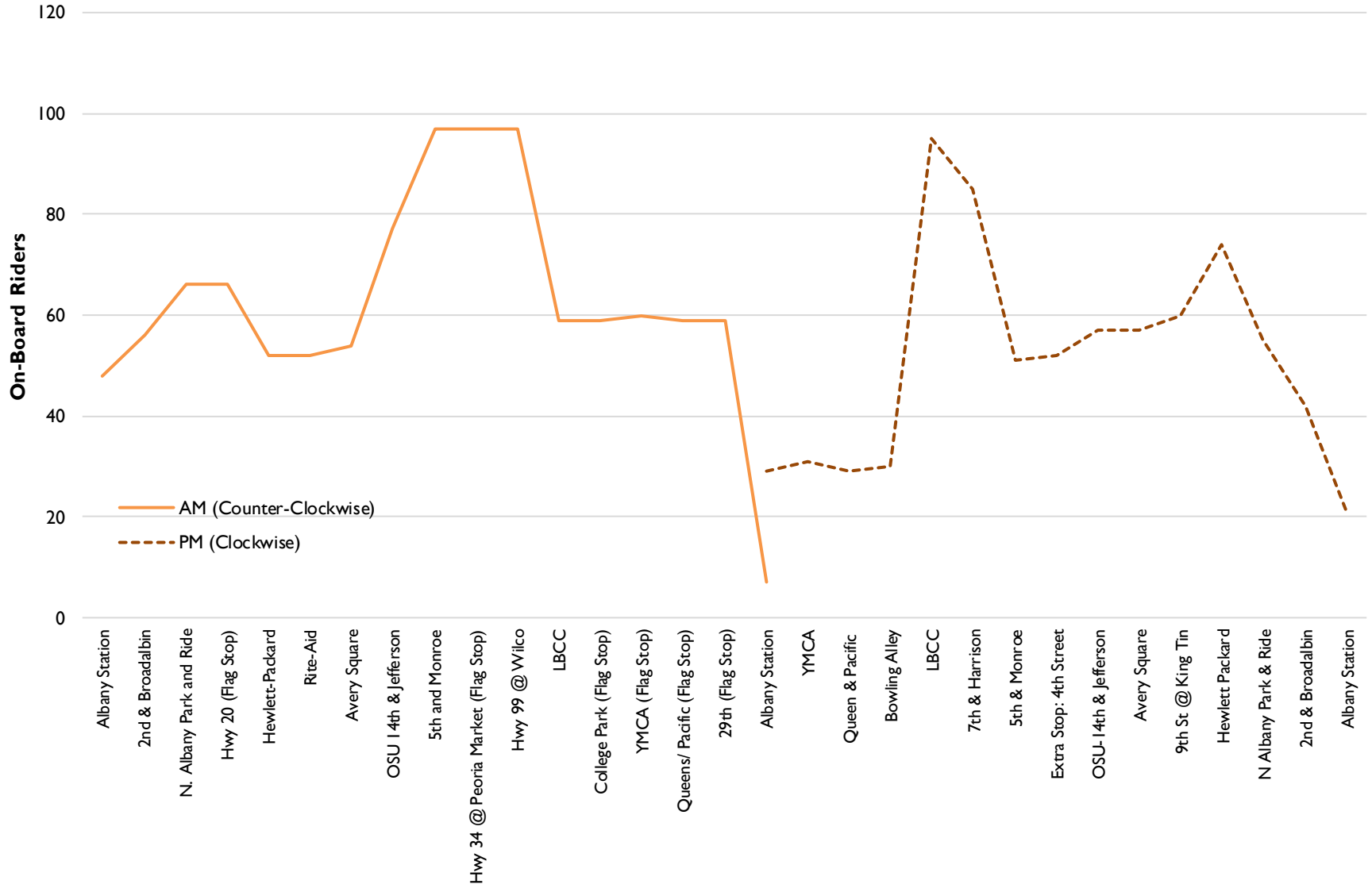


Figure 24 Loop (AM and PM Express and Midday) On-Board Load by Stop and Time of Day

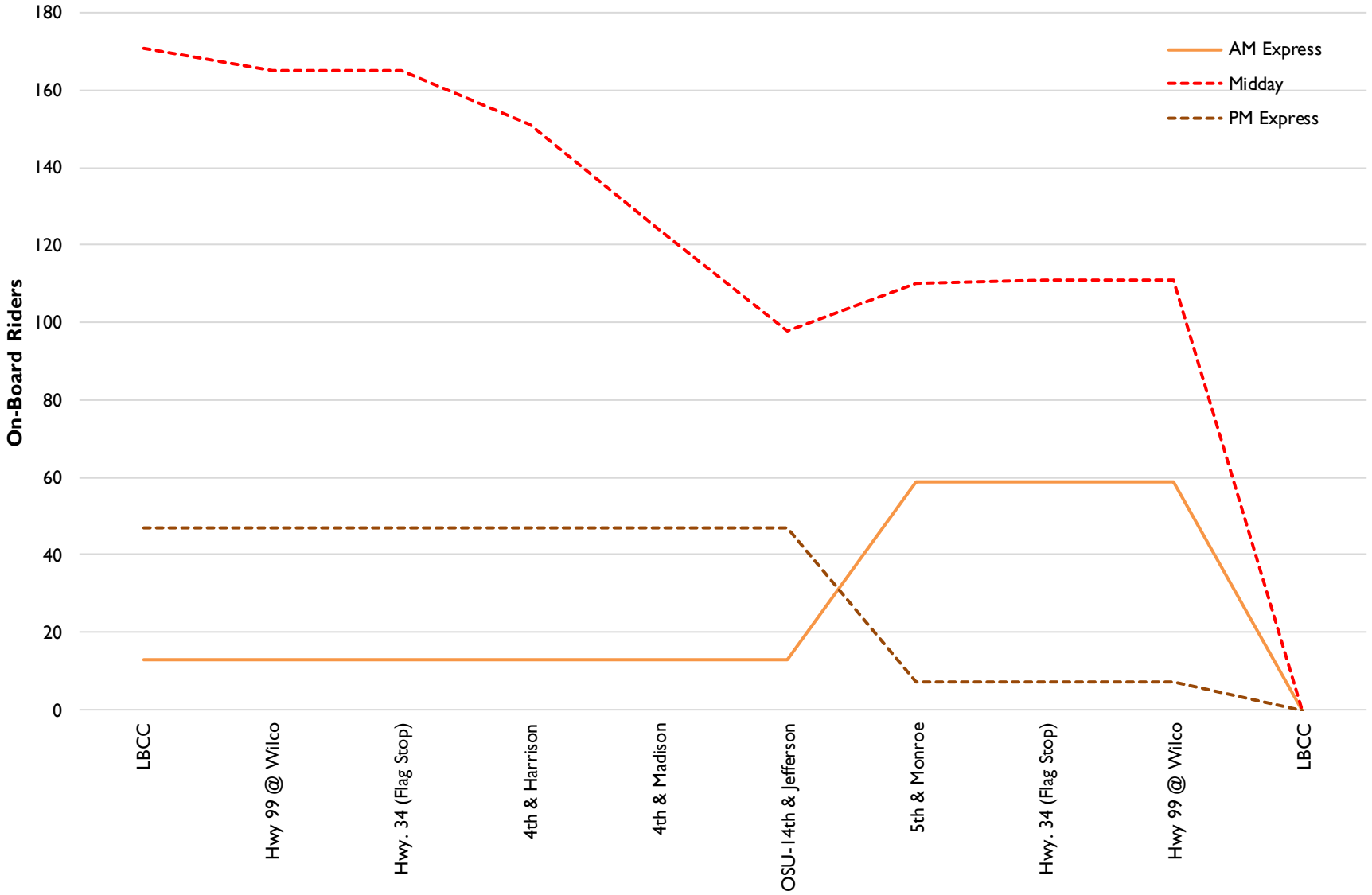


Figure 25 **Loop (AM and PM Loops) Boardings and Alightings by Stop**

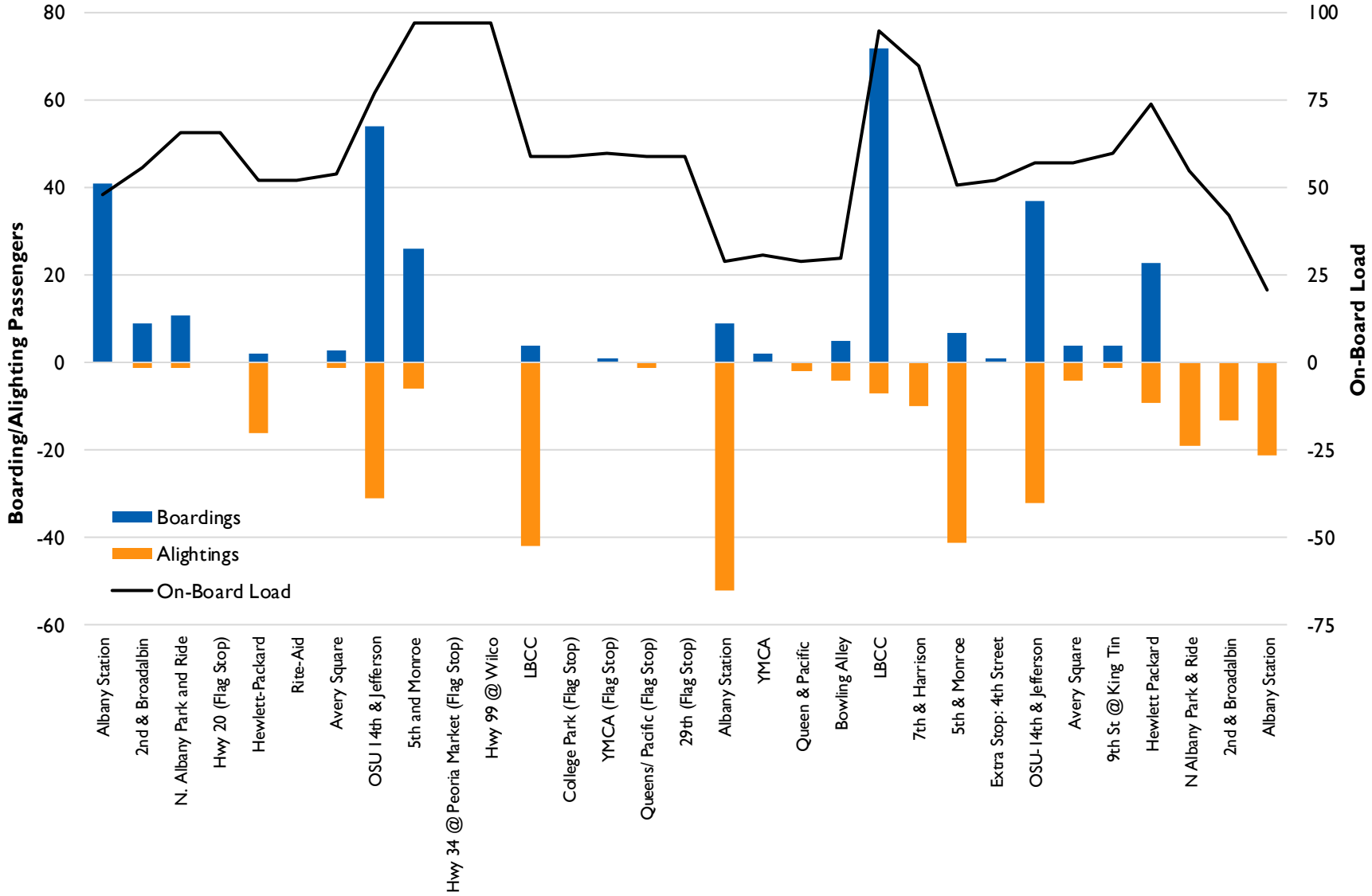


Figure 26 **Loop (AM and PM Express and Midday) Boardings and Alightings by Stop**

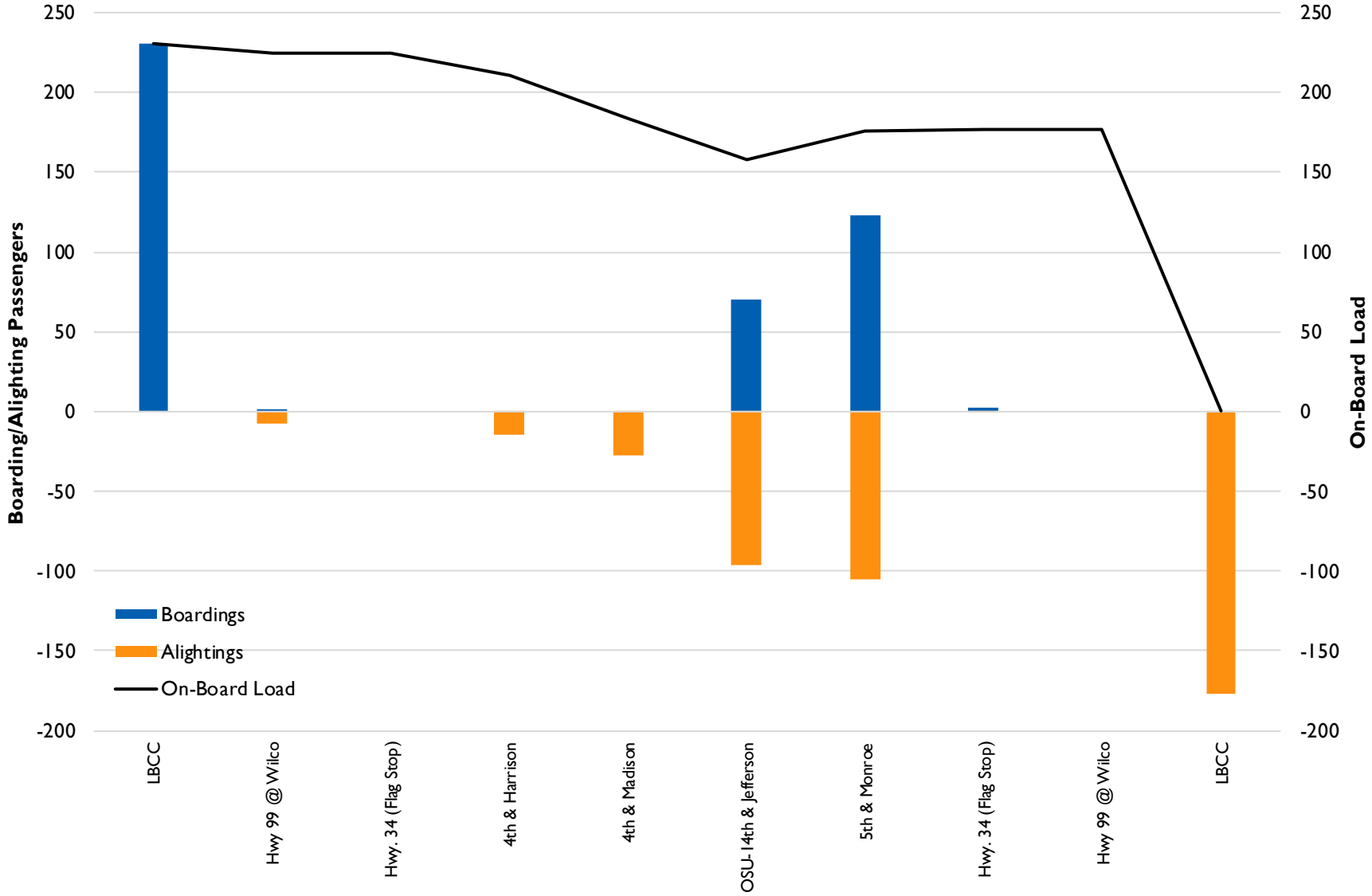
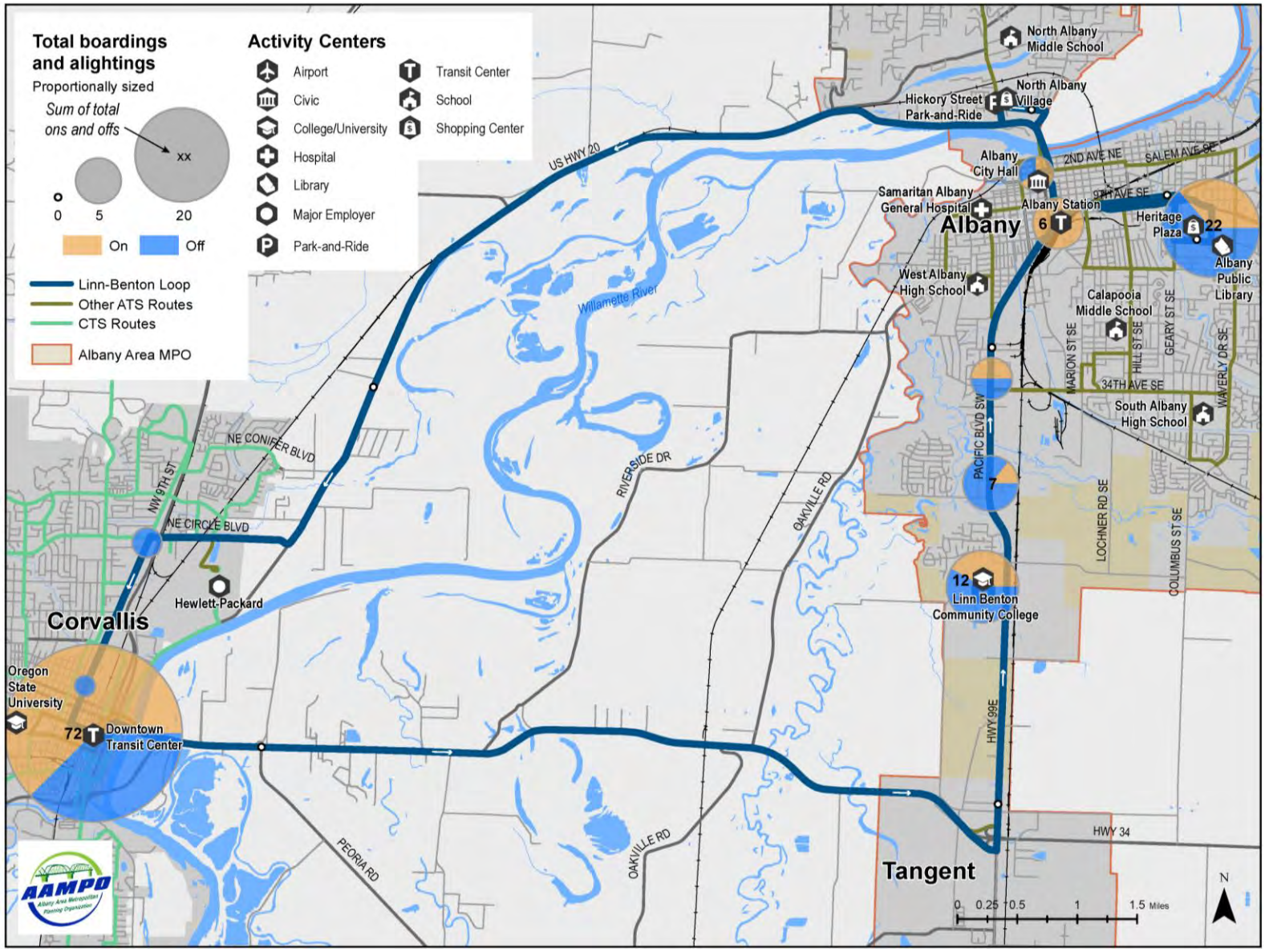
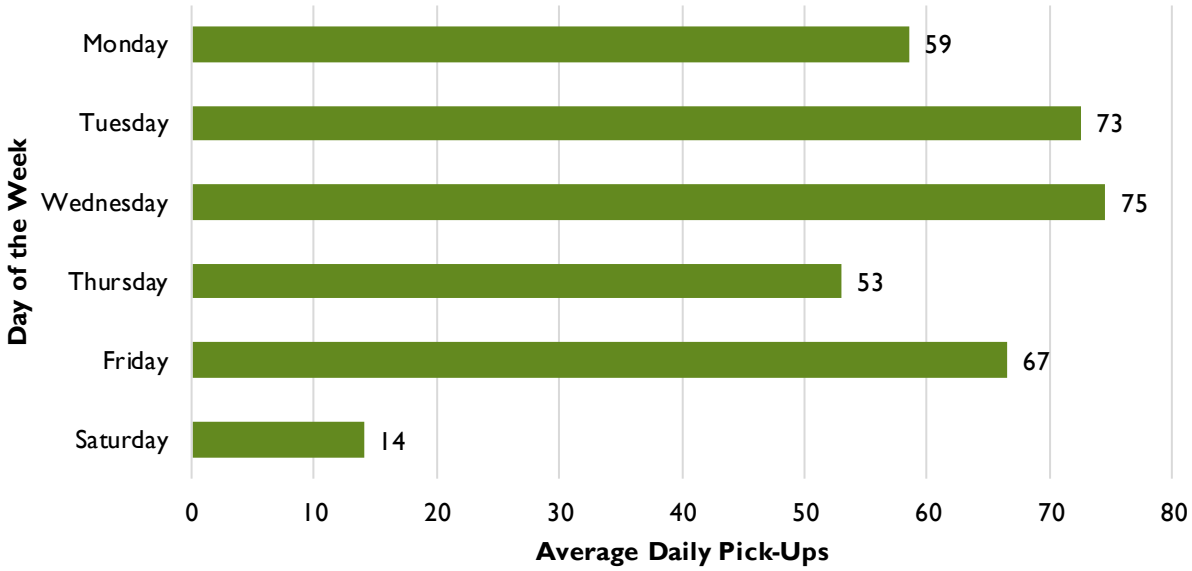


Figure 27 Loop Saturday Ridership by Stop (Fall 2014)



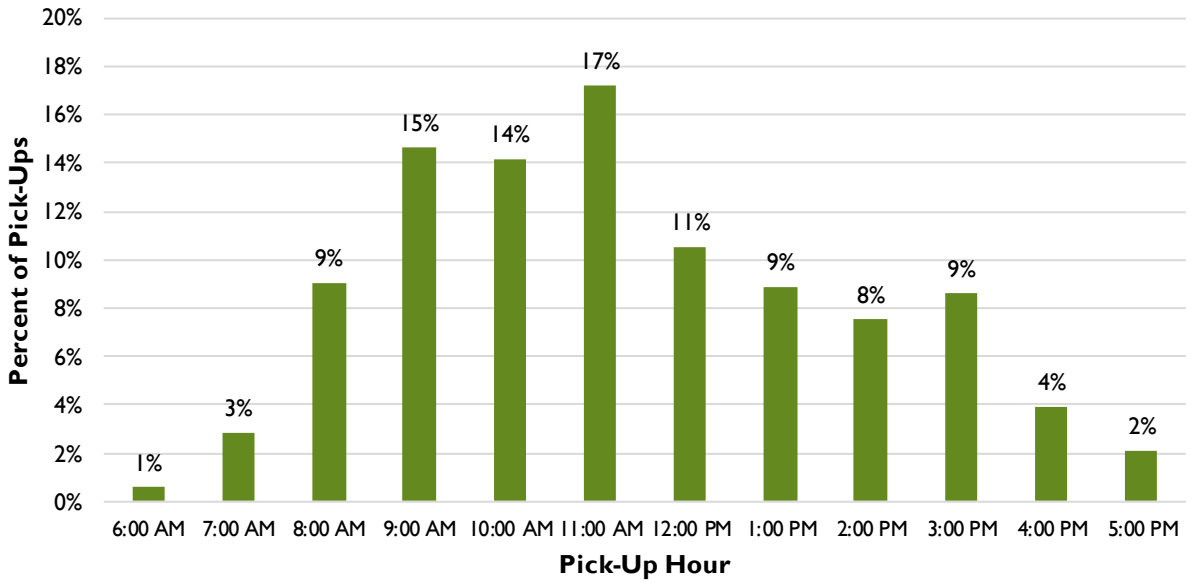
Albany Call-A-Ride

Figure 28 Albany Call-A-Ride Average Pick-Ups by Day of the Week (April 2015)



Source: City of Albany; based on Call-A-Ride manifest between April 6 and April 17, 2015.

Figure 29 Albany Call-A-Ride Pick-Ups by Hour of the Day (April 2015)



Source: City of Albany; based on Call-A-Ride manifest between April 6 and April 17, 2015.

Linn Shuttle

Figure 30 Linn Shuttle Weekday Summary

Linn Shuttle		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	288	288	15.5	18.6	48%	33%	19%	101	Albany LBCC &	I
	Inbound	114	137	7.5	15.2	53%	13%	33%	101	Albany LBCC &	I
	Outbound	174	151	8.0	21.8	42%	53%	5%	94	Lebanon LBCC &	O
	By Segment										
1	Albany Clay St. at Heritage Mall to Albany 2nd & Broadalbin	29	46	1.0	29.0	67%	17%	17%			
2	Albany 2nd & Broadalbin to Albany LBCC	36	57	2.5	14.4	25%	75%				
3	Albany LBCC to Lebanon LBCC	56	14	5.0	11.2	30%	50%	20%			
4	Lebanon LBCC to Lebanon Park & Oak	36	35	1.0	36.0	75%		25%			
5	Lebanon Park & Oak to Lebanon Walmart &	31	33	1.0	31.0	58%		42%			
6	Lebanon Walmart & to Sweet Home 13th & Kalmia	74	47	4.0	18.5	33%	42%	25%			
7	Sweet Home 13th & Kalmia to Sweet HomeSenior Center	26	56	1.0	26.0		50%	20%			
	By Time Period										
	AM	58	67	3.9	14.8				49	Lebanon WalMart &	O
	Midday	176	167	7.8	22.7				66	Albany LBCC &	I
	PM	42	32	2.6	16.3				18	Albany LBCC &	I
	Eve	12	22	1.3	9.6				18	Lebanon LBCC &	I

Figure 31 Linn Shuttle AM Express Summary

Linn Shuttle (AM Express)		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	27	32	2.8	9.8	30%	60%	10%	18	Lebanon LBCC &	L
	By Segment										
1	Walmart to Park & Oak	3		0.1	36.0	100%					
2	Park & Oak to Albany LBCC	3		0.4	7.2		100%				
3	Albany LBCC to Walmart	1	11	0.6	1.7		100%				
4	Walmart to Lebanon LBCC			0.2		100%					
5	Lebanon LBCC to Albany LBCC &	7		0.5	14.0		100%				
6	Albany LBCC & to Lebanon LBCC	7		0.4	16.8		100%				
7	Lebanon LBCC to Walmart	4		0.2	24.0		100%				
8	Walmart to 13th & Kalmia		18	0.3			100%				
9	13th & Kalmia to Sweet Home Senior Center			0.1				100%			
	By Time Period										
	AM	27	32	2.8	9.8				18	Lebanon LBCC &	L

Figure 32 Linn Shuttle PM Express Summary

Linn Shuttle (PM Express)		Route Productivity Summary				Route Operations Summary					
		Activity		Service Hours	Productivity	On-Time Performance			On-Board Load		
		Boardings	Alightings	Service Hours	Boardings per Service Hour	% On-Time	% Early	% Late	Max Passengers On Board	Max Load Location	Direction
	Total	28	28	3.6	7.8	45%	55%	0%	10	Albany LBCC &	L
	By Segment										
1	Lebanon A.T.T.C. to Albany LBCC			0.4			100%				
2	Albany LBCC to Lebanon LBCC	8		0.3	24.0		100%				
3	Lebanon LBCC to Walmart		4	0.2		100%					
4	Walmart to Albany LBCC		4	0.6			100%				
5	Albany LBCC to Lebanon LBCC &	8		0.3	24.0		100%				
6	Lebanon LBCC & to Walmart	1	4	0.2	6.0	100%					
7	Walmart to Albany LBCC		4	0.7			100%				
8	Albany LBCC to Lebanon LBCC	10	1	0.3	30.0	100%					
9	Lebanon LBCC to Walmart	1	4	0.2	6.0	100%					
10	Walmart to Sweet Home Senior Center		7	0.4			100%				
	By Time Period										
	PM	28	28	3.6	7.8				10	Albany LBCC &	L

Figure 33 **Linn Shuttle Running Time by Trip**

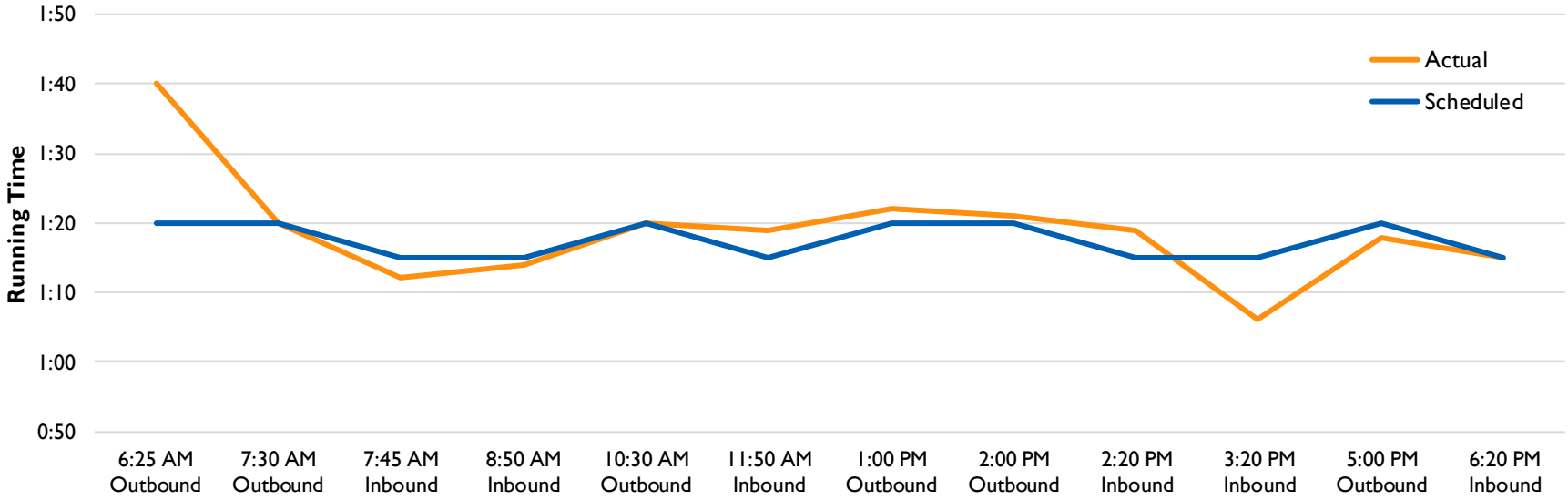


Figure 34 **Linn Shuttle Express Running Time by Trip**

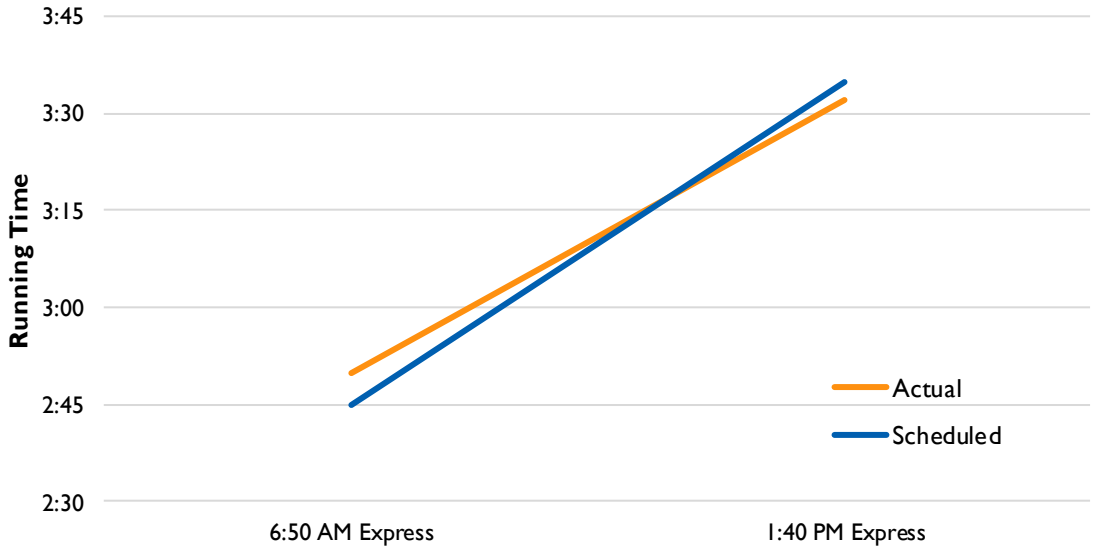


Figure 35 Linn Shuttle Ridership by Trip

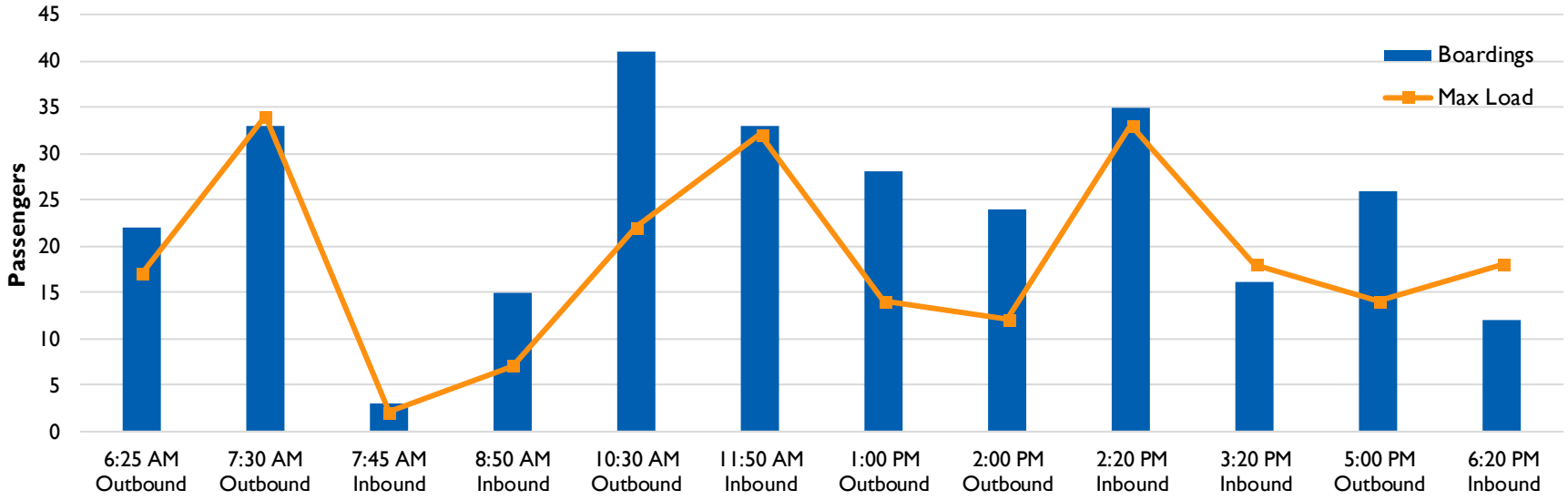


Figure 36 Linn Shuttle Express Ridership by Trip

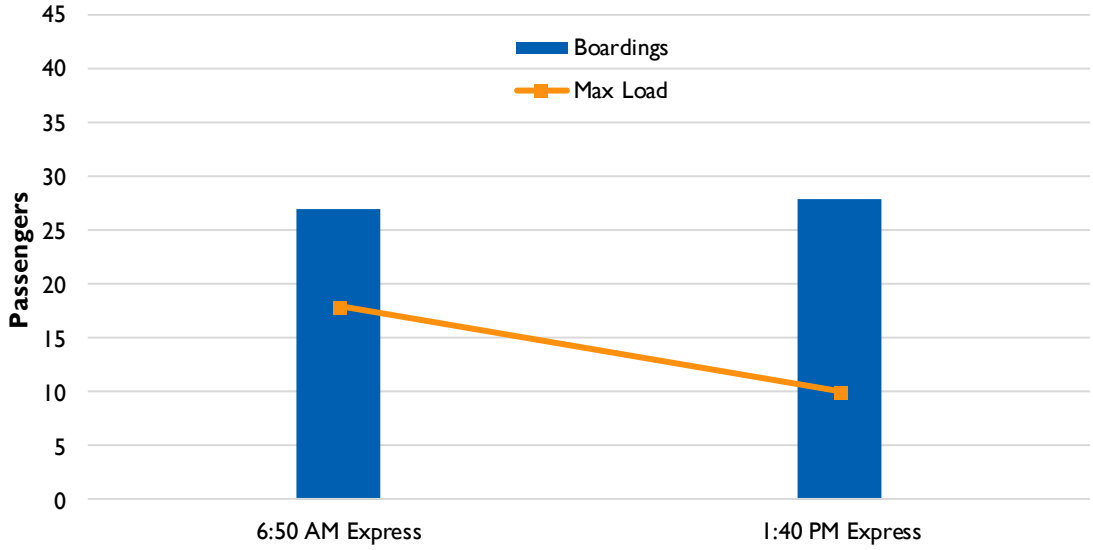


Figure 37 Linn Shuttle On-Board Load by Stop and Time of Day

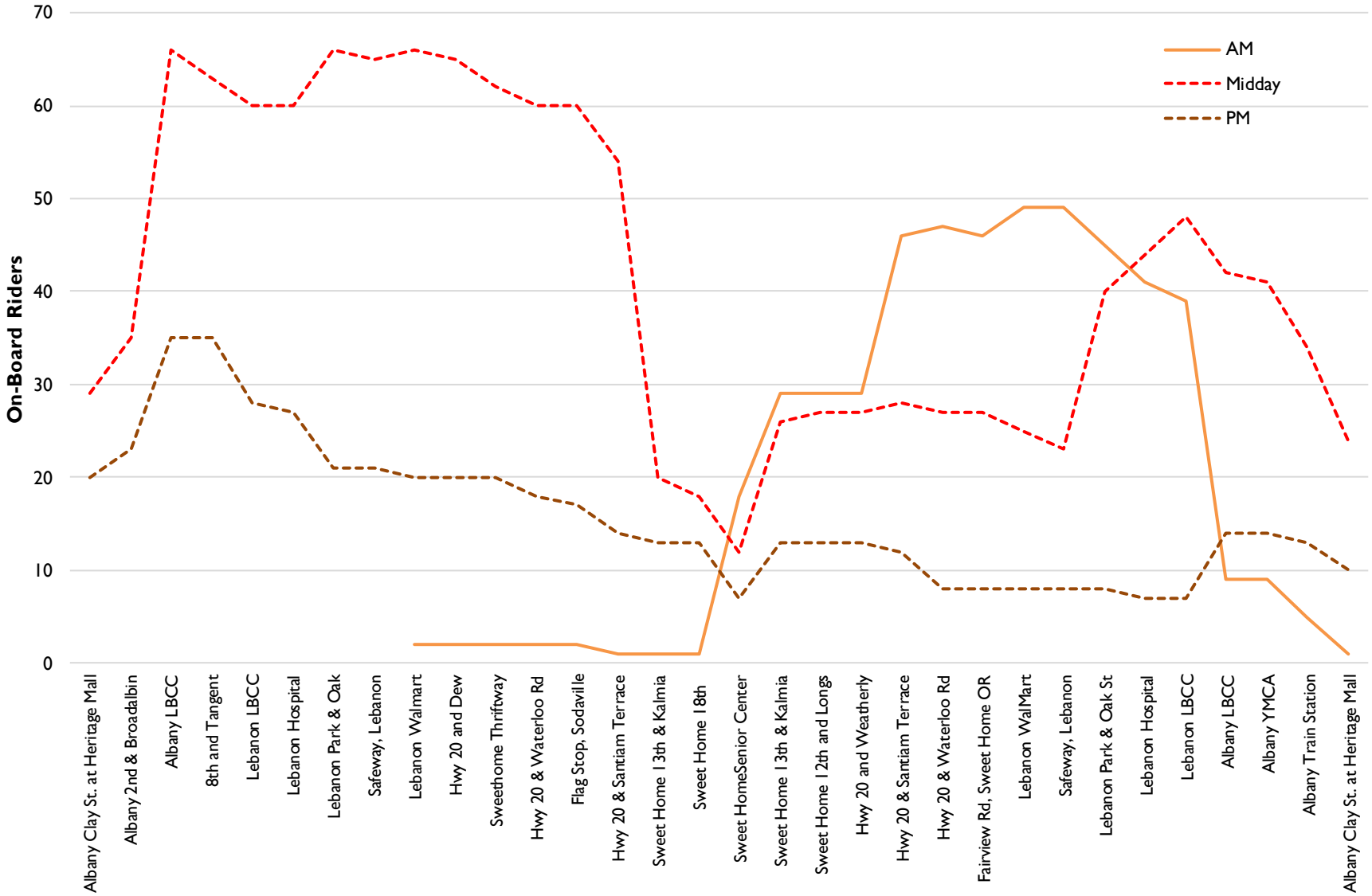


Figure 38 Linn Shuttle Express AM On-Board Load by Stop and Time of Day

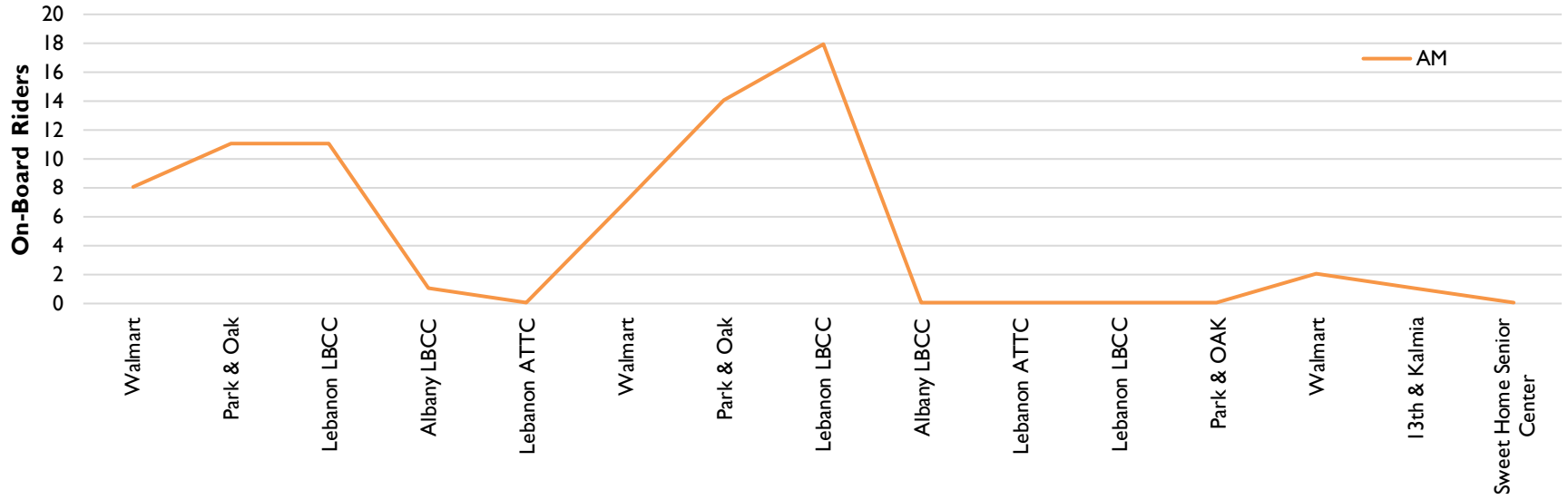


Figure 39 Linn Shuttle Express PM On-Board Load by Stop and Time of Day

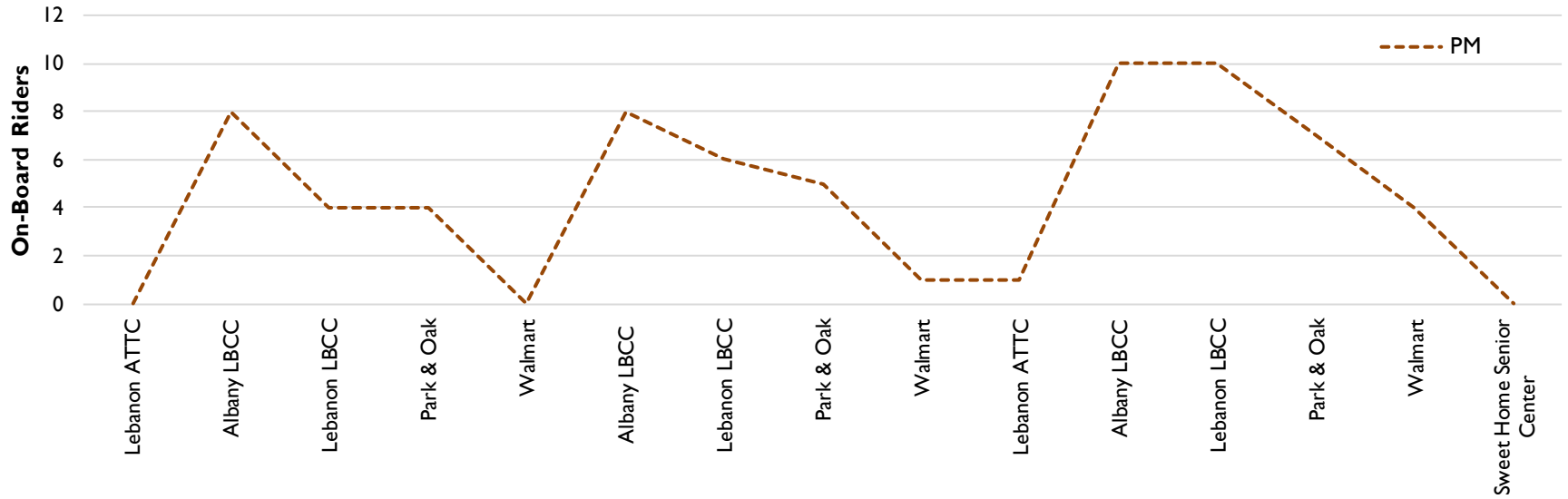


Figure 40 **Linn Shuttle Boardings and Alightings by Stop**

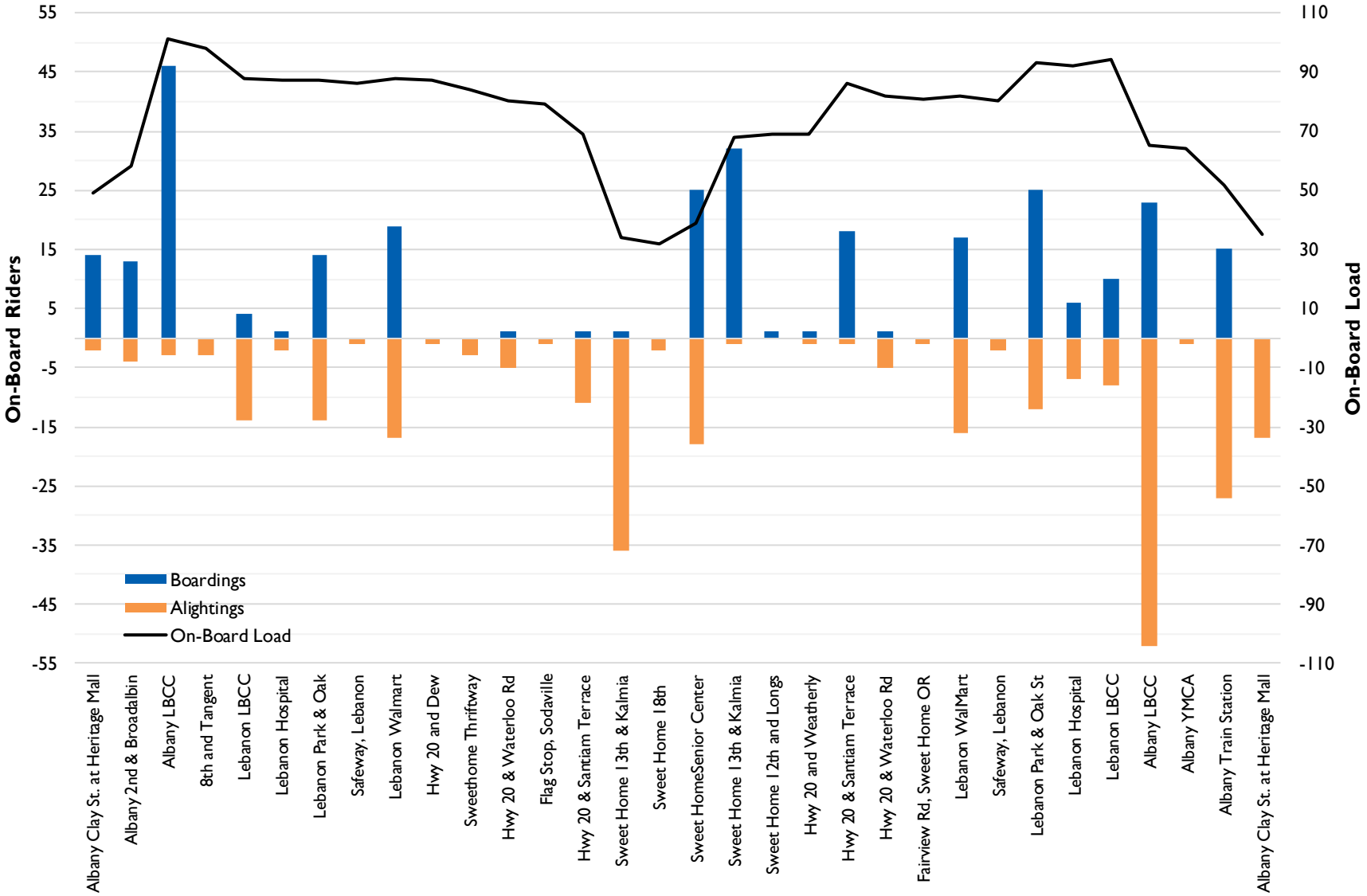


Figure 41 **Linn Shuttle Express AM Boardings and Alightings by Stop**

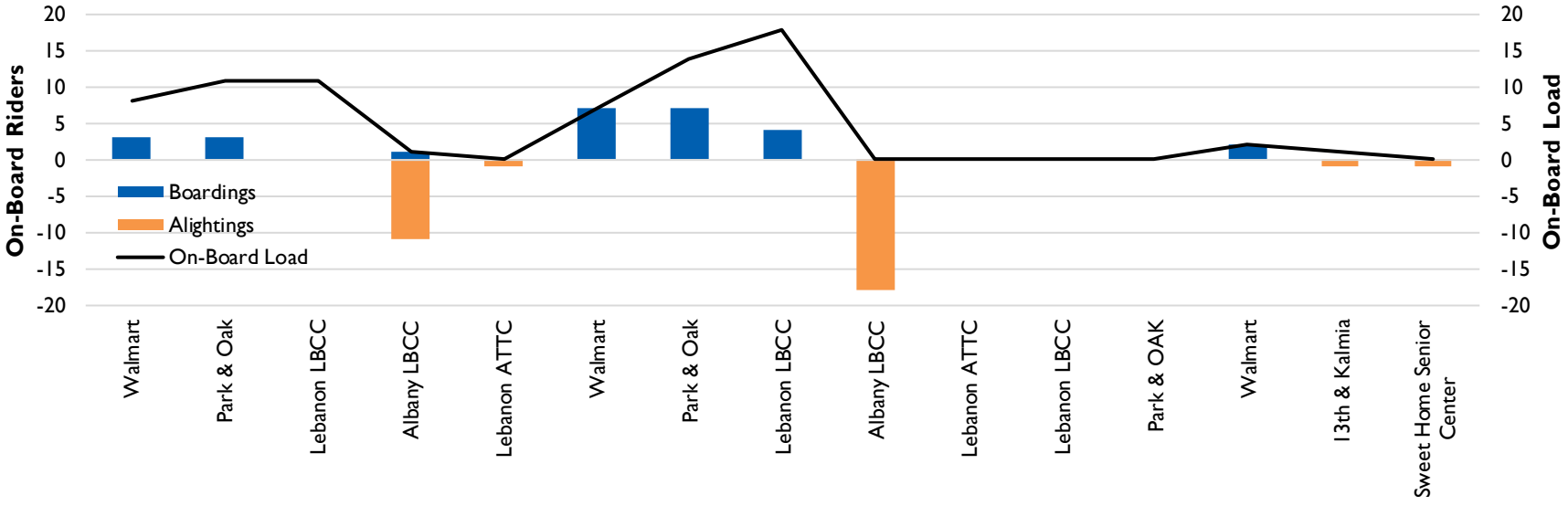
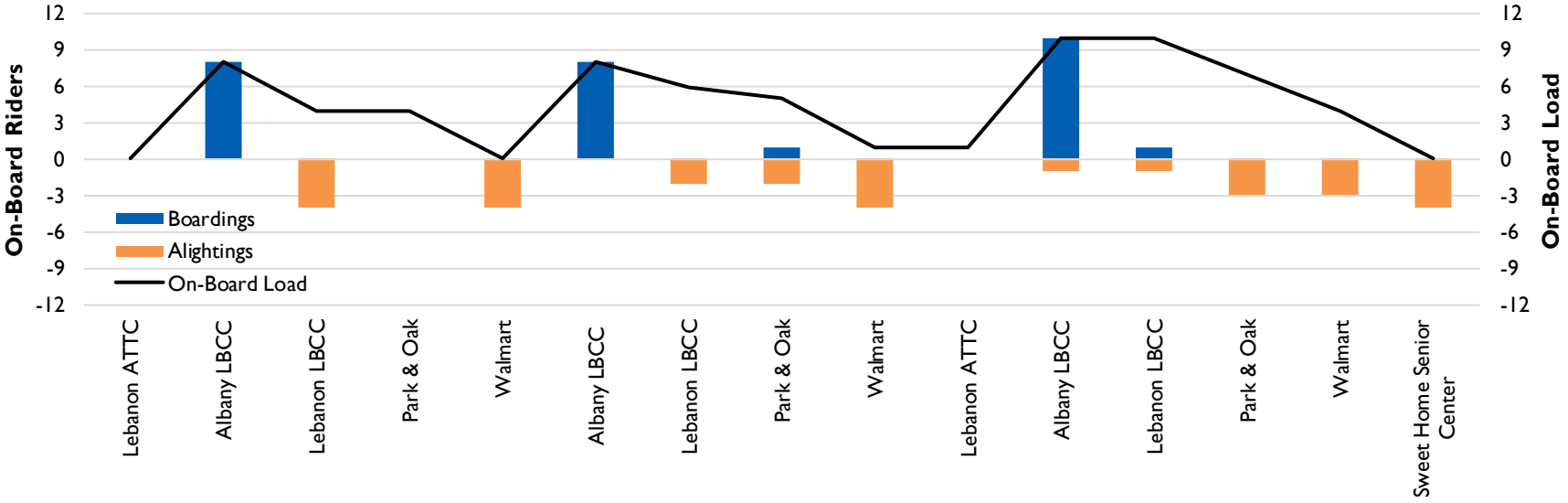


Figure 42 **Linn Shuttle Express PM Boardings and Alightings by Stop**



Review of Fares on Peer Systems

The following figures show the range between the cost of a discounted fare/pass, and the cost of a standard fare/pass. Only one agency—Petaluma Transit—provides a third fare for students that is different from the standard or reduced fares. The student fare falls within the ranges shown below.

Table 8 Comparison of Fares

Fare Type	ATS	Peer Average	Peer Median
Standard			
One-way cash fare upon boarding	$1.00	$1.15	$1.00
One-way fare (with multi-ride ticket)	$0.85	$1.03	$1.03
Day pass	-	$2.50	$2.50
Monthly pass	$30.00	$30.20	$30.00
Reduced			
One-way cash fare upon boarding	$0.50	$0.57	$0.50
One-way fare (with multi-ride ticket)	$0.43	$0.50	$0.50
Day pass	-	$1.25	$1.25
Monthly pass	$15.00	$15.10	$15.00
ADA / Paratransit one-way fare	$2.00	$2.00	$2.00

Source: City of Albany; Josephine County; Carson City; City of Petaluma; City of Lodi; RiverCities Transit

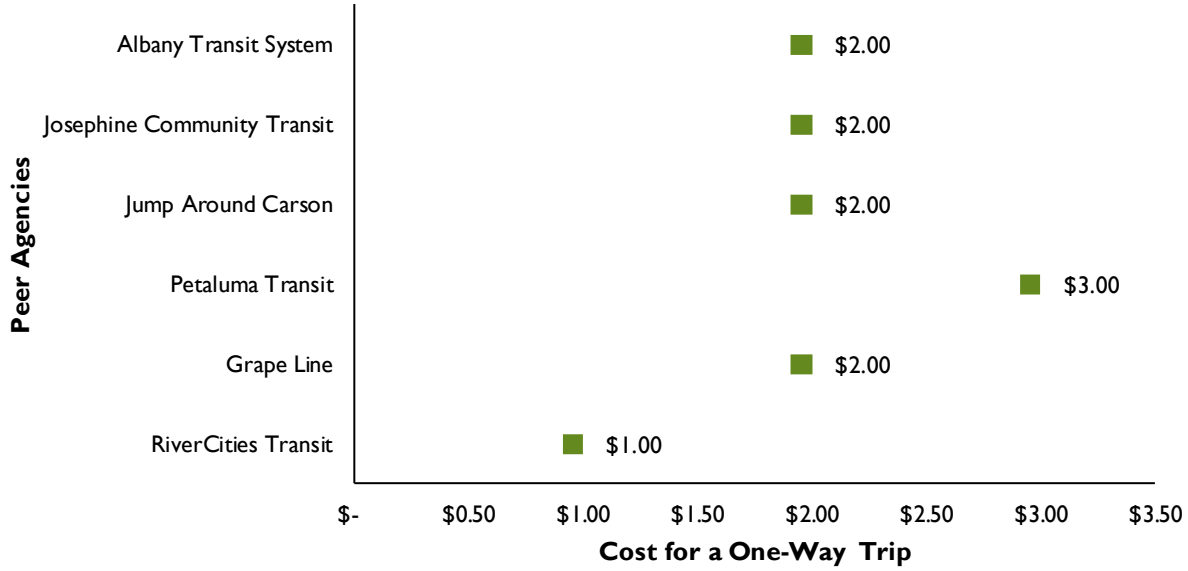
Figure 43 One-Way Fare (Multi-Ride Booklet)

Source: City of Albany; Josephine County; Carson City; City of Petaluma; City of Lodi; RiverCities Transit

Figure 44 Monthly Pass

Source: City of Albany; Josephine County; Carson City; City of Petaluma; City of Lodi; RiverCities Transit

Figure 45 ADA Paratransit One-Way Fare



Source: City of Albany; Josephine County; Carson City; City of Petaluma; City of Lodi; RiverCities Transit

Appendix D – Future Transit System

Conceptual Schedules

Short-Term Scenario Phase 1

Table 9 Conceptual Schedule: Short-Term Phase 1 Route 1

Albany Station	35th & Pacific	LBCC	YMCA	Albany Station	Heritage Plaza	Albany Station
6:30	6:38	6:44	6:54	6:59	7:05	7:10
8:00	8:08	8:14	8:24	8:29	8:35	8:40
9:30	9:38	9:44	9:54	9:59	10:05	10:10
11:00	11:08	11:14	11:24	11:29	11:35	11:40
No service (11:45 to 13:15)						
14:00	14:08	14:14	14:24	14:29	14:35	14:40
15:30	15:38	15:44	15:54	15:59	16:05	16:10
17:00	17:08	17:14	17:24	17:29	17:35	17:40

Table 10 Conceptual Schedule: Short-Term Phase 1 Route 2

Albany Station	2nd & Baker	Costco/ WinCo	3rd & Lyon	North Albany Fire Station	Albany Station
7:15	7:17	7:24	7:32	7:41	7:53
8:45	8:47	8:54	9:02	9:11	9:23
10:15	10:17	10:24	10:32	10:41	10:53
No service (11:45 to 13:15)					
13:15	13:17	13:24	13:32	13:41	13:53
14:45	14:47	14:54	15:02	15:11	15:23
16:15	16:17	16:24	16:32	16:41	16:53
17:45	17:47	17:54	18:02	18:11	18:23

Table 11 Conceptual Schedule: Short-Term Phase 1 Route 3

Albany Station	9th & Geary	Costco/ WinCo	Walmart	Costco/ WinCo	9th & Geary	Albany Station	West Albany HS	Albany Station
6:30	6:33	6:36	6:43	6:50	6:54	6:58	7:01	7:04
8:00	8:03	8:06	8:13	8:20	8:24	8:28	8:31	8:34
9:30	9:33	9:36	9:43	9:50	9:54	9:58	10:01	10:04
11:00	11:03	11:06	11:13	11:20	11:24	11:28	11:31	11:34
No service (11:45 to 13:15)								
14:00	14:03	14:06	14:13	14:20	14:24	14:28	14:31	14:34
15:30	15:33	15:36	15:43	15:50	15:54	15:58	16:01	16:04
17:00	17:03	17:06	17:13	17:20	17:24	17:28	17:31	17:34

Table 12 Conceptual Schedule: Short-Term Phase 1 Route 4

Albany Station	Heritage Plaza	South Albany HS	Heritage Plaza	Albany Station	Good Samaritan Hospital	Albany Station
7:15	7:20	7:30	7:40	7:46	7:50	7:53
8:45	8:50	9:00	9:10	9:16	9:20	9:23
10:15	10:20	10:30	10:40	10:46	10:50	10:53
No service (11:45 to 13:15)						
13:15	13:20	13:30	13:40	13:46	13:50	13:53
14:45	14:50	15:00	15:10	15:16	15:20	15:23
16:15	16:20	16:30	16:40	16:46	16:50	16:53
17:45	17:50	18:00	18:10	18:16	18:20	18:23

Short-Term Scenario Phase 2

Table 13~~9~~ Conceptual Schedule: Short-Term Phase 2 Route 1

Albany Station	35th & Pacific	LBCC	YMCA	Albany Station	Heritage Plaza	Albany Station
6:30	6:38	6:44	6:54	6:59	7:05	7:10
8:00	8:08	8:14	8:24	8:29	8:35	8:40
9:30	9:38	9:44	9:54	9:59	10:05	10:10
11:00	11:08	11:14	11:24	11:29	11:35	11:40
12:30	12:38	12:44	12:54	12:59	13:05	13:10
14:00	14:08	14:14	14:24	14:29	14:35	14:40
15:30	15:38	15:44	15:54	15:59	16:05	16:10
17:00	17:08	17:14	17:24	17:29	17:35	17:40
18:30	18:38	18:44	18:54	18:59	19:05	19:10

Table 14~~10~~ Conceptual Schedule: Short-Term Phase 2 Route 2

Albany Station	2nd & Baker	Costco/ WinCo	3rd & Lyon	North Albany Fire Station	Albany Station
7:15	7:17	7:24	7:32	7:41	7:53
8:45	8:47	8:54	9:02	9:11	9:23
10:15	10:17	10:24	10:32	10:41	10:53
11:45	11:47	11:54	12:02	12:05	12:11
13:15	13:17	13:24	13:32	13:41	13:53
14:45	14:47	14:54	15:02	15:11	15:23
16:15	16:17	16:24	16:32	16:41	16:53
17:45	17:47	17:54	18:02	18:11	18:23
19:15	19:17	19:24	19:32	19:35	19:41

Table 15~~11~~ Conceptual Schedule: Short-Term Phase 2 Route 3

Albany Station	9th & Geary	Costco/ WinCo	Walmart	Costco/ WinCo	9th & Geary	Albany Station	West Albany HS	Albany Station
6:30	6:33	6:36	6:43	6:50	6:54	6:58	7:01	7:04
8:00	8:03	8:06	8:13	8:20	8:24	8:28	8:31	8:34
9:30	9:33	9:36	9:43	9:50	9:54	9:58	10:01	10:04
11:00	11:03	11:06	11:13	11:20	11:24	11:28	11:31	11:34
12:30	12:33	12:36	12:43	12:50	12:54	12:58	13:01	13:04
14:00	14:03	14:06	14:13	14:20	14:24	14:28	14:31	14:34
15:30	15:33	15:36	15:43	15:50	15:54	15:58	16:01	16:04
17:00	17:03	17:06	17:13	17:20	17:24	17:28	17:31	17:34
18:30	18:33	18:36	18:43	18:50	18:54	18:58	19:01	19:04

Table 16~~12~~ Conceptual Schedule: Short-Term Phase 2 Route 4

Albany Station	Heritage Plaza	South Albany HS	Heritage Plaza	Albany Station	Good Samaritan Hospital	Albany Station
7:15	7:20	7:30	7:40	7:46	7:50	7:53
8:45	8:50	9:00	9:10	9:16	9:20	9:23
10:15	10:20	10:30	10:40	10:46	10:50	10:53
11:45	11:50	11:58	12:00	12:06	12:10	12:16
13:15	13:20	13:30	13:40	13:46	13:50	13:53
14:45	14:50	15:00	15:10	15:16	15:20	15:23
16:15	16:20	16:30	16:40	16:46	16:50	16:53
17:45	17:50	18:00	18:10	18:16	18:20	18:23
19:15	19:20	19:28	19:30	19:36	19:40	19:46

Medium-Term Scenario

Table 17~~13~~ Conceptual Schedule: Medium-Term Route 1

Albany Station	Heritage Plaza	Walmart	Heritage Plaza	Albany Station
7:00	7:05	7:11	7:17	7:23
8:00	8:05	8:11	8:17	8:23
9:00	9:05	9:11	9:17	9:23
10:00	10:05	10:11	10:17	10:23
11:00	11:05	11:11	11:17	11:23
12:00	12:05	12:11	12:17	12:23
13:00	13:05	13:11	13:17	13:23
14:00	14:05	14:11	14:17	14:23
15:00	15:05	15:11	15:17	15:23
16:00	16:05	16:11	16:17	16:23
17:00	17:05	17:11	17:17	17:23
18:00	18:05	18:11	18:17	18:23
19:00	19:05	19:11	19:17	19:23

Table 18~~14~~ Conceptual Schedule: Medium-Term Route 2

Heritage Plaza	Waverly & Grand Prairie	South Albany HS	Queen & Hill	Heritage Plaza
6:30	6:34	6:39	6:46	6:51
7:30	7:34	7:39	7:46	7:51
8:30	8:34	8:39	8:46	8:51
9:30	9:34	9:39	9:46	9:51
10:30	10:34	10:39	10:46	10:51
11:30	11:34	11:39	11:46	11:51
12:30	12:34	12:39	12:46	12:51
13:30	13:34	13:39	13:46	13:51
14:30	14:34	14:39	14:46	14:51
15:30	15:34	15:39	15:46	15:51
16:30	16:34	16:39	16:46	16:51
17:30	17:34	17:39	17:46	17:51
18:30	18:34	18:39	18:46	18:51
19:30	19:34	19:39	19:46	19:51

Table 19~~15~~ Conceptual Schedule: Medium-Term Route 3

Albany Station	Pacific & 35th	LBCC	YMCA	Albany Station
6:30	6:36	6:44	6:52	6:58
7:30	7:36	7:44	7:52	7:58
8:30	8:36	8:44	8:52	8:58
9:30	9:36	9:44	9:52	9:58
10:30	10:36	10:44	10:52	10:58
11:30	11:36	11:44	11:52	11:58
12:30	12:36	12:44	12:52	12:58
13:30	13:36	13:44	13:52	13:58
14:30	14:36	14:44	14:52	14:58
15:30	15:36	15:44	15:52	15:58
16:30	16:36	16:44	16:52	16:58
17:30	17:36	17:44	17:52	17:58
18:30	18:36	18:44	18:52	18:58
19:30	19:36	19:44	19:52	19:58

Table 20~~16~~ Conceptual Schedule: Medium-Term Route 4

Albany Station	North Albany Road & Hickory Street	North Albany Fire Station	North Albany Road & Hickory Street	Albany Station
6:30	6:35	6:42	6:49	6:54
7:30	7:35	7:42	7:49	7:54
8:30	8:35	8:42	8:49	8:54
9:30	9:35	9:42	9:49	9:54
10:30	10:35	10:42	10:49	10:54
11:30	11:35	11:42	11:49	11:54
12:30	12:35	12:42	12:49	12:54
13:30	13:35	13:42	13:49	13:54
14:30	14:35	14:42	14:49	14:54
15:30	15:35	15:42	15:49	15:54
16:30	16:35	16:42	16:49	16:54
17:30	17:35	17:42	17:49	17:54
18:30	18:35	18:42	18:49	18:54
19:30	19:35	19:42	19:49	19:54

Table 21~~17~~ Conceptual Schedule: Medium-Term Route 5

Heritage Plaza	Costco/WinCo	Knox Butte & Timber Ridge	Costco/WinCo	Heritage Plaza
7:00	7:07	7:13	7:19	7:24
8:00	8:07	8:13	8:19	8:24
9:00	9:07	9:13	9:19	9:24
10:00	10:07	10:13	10:19	10:24
11:00	11:07	11:13	11:19	11:24
12:00	12:07	12:13	12:19	12:24
13:00	13:07	13:13	13:19	13:24
14:00	14:07	14:13	14:19	14:24
15:00	15:07	15:13	15:19	15:24
16:00	16:07	16:13	16:19	16:24
17:00	17:07	17:13	17:19	17:24
18:00	18:07	18:13	18:19	18:24
19:00	19:07	19:13	19:19	19:24

Table 22~~18~~ Conceptual Schedule: Medium-Term Route 6

Albany Station	2nd & Baker	Costco/WinCo	Good Samaritan Hospital	Albany Station
7:00	7:02	7:09	7:20	7:25
8:00	8:02	8:09	8:20	8:25
9:00	9:02	9:09	9:20	9:25
10:00	10:02	10:09	10:20	10:25
11:00	11:02	11:09	11:20	11:25
12:00	12:02	12:09	12:20	12:25
13:00	13:02	13:09	13:20	13:25
14:00	14:02	14:09	14:20	14:25
15:00	15:02	15:09	15:20	15:25
16:00	16:02	16:09	16:20	16:25
17:00	17:02	17:09	17:20	17:25
18:00	18:02	18:09	18:20	18:25
19:00	19:02	19:09	19:20	19:25

Long-Term Scenario

Table 23~~19~~ Conceptual Schedule: Long-Term Route 1

LBCC	YMCA	Albany Station	Heritage Plaza	Walmart	Heritage Plaza	Albany Station	35th & Pacific	LBCC
-	-	6:00	6:03	6:10	6:18	6:21	6:27	6:35
6:15	6:24	6:30	6:33	6:40	6:48	6:51	6:57	7:05
6:45	6:54	7:00	7:03	7:10	7:18	7:21	7:27	7:35
7:15	7:24	7:30	7:33	7:40	7:48	7:51	7:57	8:05
7:45	7:54	8:00	8:03	8:10	8:18	8:21	8:27	8:35
8:15	8:24	8:30	8:33	8:40	8:48	8:51	8:57	9:05
8:45	8:54	9:00	9:03	9:10	9:18	9:21	9:27	9:35
9:15	9:24	9:30	9:33	9:40	9:48	9:51	9:57	10:05
9:45	9:54	10:00	10:03	10:10	10:18	10:21	10:27	10:35
10:15	10:24	10:30	10:33	10:40	10:48	10:51	10:57	11:05
10:45	10:54	11:00	11:03	11:10	11:18	11:21	11:27	11:35
11:15	11:24	11:30	11:33	11:40	11:48	11:51	11:57	12:05
11:45	11:54	12:00	12:03	12:10	12:18	12:21	12:27	12:35
12:15	12:24	12:30	12:33	12:40	12:48	12:51	12:57	13:05
12:45	12:54	13:00	13:03	13:10	13:18	13:21	13:27	13:35
13:15	13:24	13:30	13:33	13:40	13:48	13:51	13:57	14:05
13:45	13:54	14:00	14:03	14:10	14:18	14:21	14:27	14:35
14:15	14:24	14:30	14:33	14:40	14:48	14:51	14:57	15:05
14:45	14:54	15:00	15:03	15:10	15:18	15:21	15:27	15:35
15:15	15:24	15:30	15:33	15:40	15:48	15:51	15:57	16:05
15:45	15:54	16:00	16:03	16:10	16:18	16:21	16:27	16:35
16:15	16:24	16:30	16:33	16:40	16:48	16:51	16:57	17:05
16:45	16:54	17:00	17:03	17:10	17:18	17:21	17:27	17:35
17:15	17:24	17:30	17:33	17:40	17:48	17:51	17:57	18:05
17:45	17:54	18:00	18:03	18:10	18:18	18:21	18:27	18:35
18:15	18:24	18:30	18:33	18:40	18:48	18:51	18:57	19:05
18:45	18:54	19:00	19:03	19:10	19:18	19:21	19:27	19:35
19:15	19:24	19:30	19:33	19:40	19:48	19:51	-	-
19:45	19:54	20:00	-	-	-	-	-	-

Table 24~~20~~ Conceptual Schedule: Long-Term Route 2

Albany Station	2nd & Baker	Heritage Plaza	South Albany High School	Heritage Plaza	Albany Station
6:00	6:02	6:08	6:23	6:33	6:44
7:00	7:02	7:08	7:23	7:33	7:44
8:00	8:02	8:08	8:23	8:33	8:44
9:00	9:02	9:08	9:23	9:33	9:44
10:00	10:02	10:08	10:23	10:33	10:44
11:00	11:02	11:08	11:23	11:33	11:44
12:00	12:02	12:08	12:23	12:33	12:44
13:00	13:02	13:08	13:23	13:33	13:44
14:00	14:02	14:08	14:23	14:33	14:44
15:00	15:02	15:08	15:23	15:33	15:44
16:00	16:02	16:08	16:23	16:33	16:44
17:00	17:02	17:08	17:23	17:33	17:44
18:00	18:02	18:08	18:23	18:33	18:44
19:00	19:02	19:08	19:23	19:33	19:44

Table 25~~21~~ Conceptual Schedule: Long-Term Route 3

LBCC	Waverly & Del Rio	Heritage Plaza	Costco/ WinCo	Heritage Plaza	Waverly & Del Rio	LBCC
6:00	6:12	6:20	6:26	6:31	6:39	6:50
7:00	7:12	7:20	7:26	7:31	7:39	7:50
8:00	8:12	8:20	8:26	8:31	8:39	8:50
9:00	9:12	9:20	9:26	9:31	9:39	9:50
10:00	10:12	10:20	10:26	10:31	10:39	10:50
11:00	11:12	11:20	11:26	11:31	11:39	11:50
12:00	12:12	12:20	12:26	12:31	12:39	12:50
13:00	13:12	13:20	13:26	13:31	13:39	13:50
14:00	14:12	14:20	14:26	14:31	14:39	14:50
15:00	15:12	15:20	15:26	15:31	15:39	15:50
16:00	16:12	16:20	16:26	16:31	16:39	16:50
17:00	17:12	17:20	17:26	17:31	17:39	17:50
18:00	18:12	18:20	18:26	18:31	18:39	18:50
19:00	19:12	19:20	19:26	19:31	19:39	19:50

Table 2622 Conceptual Schedule: Long-Term Route 4

Albany Station	North Albany Park-and- Ride	Laura Vista & Flame Tree	North Albany Park-and-Ride	Albany Station	Heritage Plaza	Albany Station
6:00	6:04	6:15	6:25	6:31	6:41	6:52
7:00	7:04	7:15	7:25	7:31	7:41	7:52
8:00	8:04	8:15	8:25	8:31	8:41	8:52
9:00	9:04	9:15	9:25	9:31	9:41	9:52
10:00	10:04	10:15	10:25	10:31	10:41	10:52
11:00	11:04	11:15	11:25	11:31	11:41	11:52
12:00	12:04	12:15	12:25	12:31	12:41	12:52
13:00	13:04	13:15	13:25	13:31	13:41	13:52
14:00	14:04	14:15	14:25	14:31	14:41	14:52
15:00	15:04	15:15	15:25	15:31	15:41	15:52
16:00	16:04	16:15	16:25	16:31	16:41	16:52
17:00	17:04	17:15	17:25	17:31	17:41	17:52
18:00	18:04	18:15	18:25	18:31	18:41	18:52
19:00	19:04	19:15	19:25	19:31	19:41	19:52

Table 2723 Conceptual Schedule: Long-Term Route 5

Albany Station	Samaritan Hospital	2nd & Baker	Costco/ WinCo	Walmart	Costco/ WinCo	3rd & Lyon	Samaritan Hospital	Albany Station
6:00	6:05	6:08	6:16	6:25	6:35	6:43	6:46	6:51
6:30	6:35	6:38	6:46	6:55	7:05	7:13	7:16	7:21
7:00	7:05	7:08	7:16	7:25	7:35	7:43	7:46	7:51
7:30	7:35	7:38	7:46	7:55	8:05	8:13	8:16	8:21
8:00	8:05	8:08	8:16	8:25	8:35	8:43	8:46	8:51
8:30	8:35	8:38	8:46	8:55	9:05	9:13	9:16	9:21
9:00	9:05	9:08	9:16	9:25	9:35	9:43	9:46	9:51
9:30	9:35	9:38	9:46	9:55	10:05	10:13	10:16	10:21
10:00	10:05	10:08	10:16	10:25	10:35	10:43	10:46	10:51
10:30	10:35	10:38	10:46	10:55	11:05	11:13	11:16	11:21
11:00	11:05	11:08	11:16	11:25	11:35	11:43	11:46	11:51
11:30	11:35	11:38	11:46	11:55	12:05	12:13	12:16	12:21
12:00	12:05	12:08	12:16	12:25	12:35	12:43	12:46	12:51
12:30	12:35	12:38	12:46	12:55	13:05	13:13	13:16	13:21
13:00	13:05	13:08	13:16	13:25	13:35	13:43	13:46	13:51
13:30	13:35	13:38	13:46	13:55	14:05	14:13	14:16	14:21
14:00	14:05	14:08	14:16	14:25	14:35	14:43	14:46	14:51
14:30	14:35	14:38	14:46	14:55	15:05	15:13	15:16	15:21
15:00	15:05	15:08	15:16	15:25	15:35	15:43	15:46	15:51
15:30	15:35	15:38	15:46	15:55	16:05	16:13	16:16	16:21
16:00	16:05	16:08	16:16	16:25	16:35	16:43	16:46	16:51
16:30	16:35	16:38	16:46	16:55	17:05	17:13	17:16	17:21
17:00	17:05	17:08	17:16	17:25	17:35	17:43	17:46	17:51
17:30	17:35	17:38	17:46	17:55	18:05	18:13	18:16	18:21
18:00	18:05	18:08	18:16	18:25	18:35	18:43	18:46	18:51
18:30	18:35	18:38	18:46	18:55	19:05	19:13	19:16	19:21
19:00	19:05	19:08	19:16	19:25	19:35	19:43	19:46	19:51
19:30	19:35	19:38	19:46	19:55	-	-	-	-

Scenario Impacts

Ridership

Overall, service improvements and population growth are likely to increase ATS ridership. To estimate future ridership in each of the recommended scenarios, three key drivers of ridership are used: frequency, travel time and population growth.

Transit riders typically seek to minimize their travel times, just as people traveling by other modes. According to the Transit Capacity and Quality of Service Manual,[1] ridership increases between 0.3% and 0.5% for every 1.0% increase in frequency, and by the same amount for every 1.0% decrease in travel times. We used the midpoint of 0.4% as the rate of change, or elasticity, in this analysis. Estimated travel times using existing and proposed schedules were used as a proxy for overall system travel times.

Increased reliability is valued highly by transit riders because of the impacts it has on their travel time, and the reliability of the schedule. According to the Transit Capacity and Quality of Service Manual, passengers perceive wait time to cost approximately two to three times their typical value of time. However, there was little quantitative research defining a ridership elasticity factor for wait time. For this analysis therefore, no ridership impact is assumed as a result of reliability improvements. Table 28~~Table 26~~ lists estimated changes in ridership for each scenario based on changes in service frequency and average route travel time.

Table 28~~26~~ Estimated Ridership Impacts of Fixed Route Service Changes

Scenario	Value	Percent Change from Existing	Percent Change in Ridership	Change in Daily Ridership[2]
Frequency (in minutes)				
Existing	60	-	-	-
Short-Term	90	-50%	-20%	-168
Medium-Term	60	0%	0%	0
Long-Term	43[3]	28%	11%	97
Average Travel Time (roundtrip, in minutes)				
Existing	70	-	-	-
Short-Term	45	-31%	12%	104
Medium-Term	49	-16%	6%	55
Long-Term	45	-36%	14%	124

In addition to service changes, long-term population growth in Albany will increase ridership. Currently, ATS serves approximately 86,000 passengers per year, or about 1.6 annual boardings per capita. Table 29~~Table 27~~ lists the future annual projected ridership for each scenario, using population values derived from the CALM Model.

[1] Transit Capacity and Quality of Service Manual, 3rd Edition. 2013. TCRP Report 165.
[2] Change in Daily Ridership is the total change in boarding and alightings from existing ridership (minus the ridership from stops that will no longer be served in a scenario).
[3] Long-Term frequency of 43 minutes is based on a weighting of frequency by revenue hours. 57% of revenue hours are at 30-minute frequencies, and 43% of revenue hours are at 60-minute frequencies.

Table 2927 Fixed Route Ridership Impacts of Population Growth

Scenario	Year	Population (City of Albany)	Ridership per Capita	Annual Ridership	Percent Change in Ridership	Change in Daily Ridership[4]
Existing	2017	53,593	1.61	86,149	-	-
Short-Term	2020	54,892	1.61	88,237	2.4%	22
Medium-Term	2024	56,624	1.61	91,021	5.7%	50
Long-Term	2040	63,553	1.61	102,159	18.6%	165

Source: City of Albany, CALM model

The cumulative effects to ridership based on service changes are presented in Table 30~~Table 28~~. The Short-Term scenario could lose 10% of its ridership, particularly due to the reduction in service frequency. In the Medium and Long-Term scenarios, notable ridership growth is expected. Growth in both scenarios are largely attributable to reductions in travel time and overall population growth.

Table 3028 Future Fixed Route Ridership Forecast

Scenario	Change in Daily Ridership based on:				Net Change in Daily Ridership	Future Daily Ridership	Percent Change
	Service Removal[5]	Frequency	Travel Time	Population Growth			
Short-Term	-49	-168	104	22	-91	797	-10.3%
Medium-Term	-33	0	55	50	72	960	8.1%
Long-Term	-29	97	124	165	357	1,246	40.2%

Note: Some values may not add up due to rounding. Daily Ridership is the sum of boardings and alightings.

Fare Revenue

The future growth of ridership will directly impact ATS' fare revenue. Estimated fare revenue impacts are based on the following assumptions:

- Forty-four percent of passengers pay a full $1.00 fare per trip.[6,7]
- Each passenger boards on average 3.23 days per week (or approximately 168 days per year).[6]
- Existing annual fare revenue is approximately $30,000.

[4] Daily Ridership is the sum of boardings and alightings. The values in this column represents the change from existing boardings and alightings.
[5] Service removal is the estimated ridership that is expected to be eliminated by no longer serving existing stops in each scenario. These reductions are assumed for stops that are located more than ¼-mile from proposed service.
[6] Based on data collected from the Fall 2014 on-board survey (excluding responses from the Loop and the Linn Shuttle). This is due to high ridership on ATS by LBCC students, who do not pay a fare.
[7] On-board survey data indicates 44% of passengers paid a fare. The survey showed a significant portion of these passengers paid reduced or discounted fares. For estimation purposes, all fare-paying passengers are assumed to pay the full $1.00 fare.

The potential fare revenue effect for each scenario is listed in Table 31~~Table 29~~. Estimated annual revenue changes range between about $3,500 less than today's annual fare revenue (Short-Term) to an increase of more than $13,000 over the existing value (Long-Term).

Table 31~~29~~ Potential Change in Fare Revenue

Scenario	Change in Daily Boardings[8]	Daily Change in Fare-Paying Ridership	Annual Change in Fare Revenue	Projected Fare Revenue	Percent Change in Fare Revenue
Short-Term	-46	-20	-$3,400	$26,600	-11%
Medium-Term	36	16	$2,660	$32,660	9%
Long-Term	179	79	$13,229	$43,229	44%

Evaluation

Service changes in each scenario were evaluated against several performance measures that were vetted with the project's Technical Advisory Committee Transit Subgroup. The measures evaluated are listed in Table 32~~Table 30~~. Effort was made to keep the list of measures short and easy to measure for future evaluation of the system.

Table 32~~30~~ Performance Measures

Category	Measure
Service Design	Percent of revenue hours meeting frequency of service goals.
	Percent of revenue hours meeting span of service goals.
Productivity-Focused	Travel time between key destinations.
	Ratio of in-service hours to vehicle hours.
Coverage-Focused	Percent of jobs within ¼ mile walk of transit stop.
	Percent of households within ¼ mile walk of transit stop.
	Percent of households below poverty line within ¼ mile walk of transit stop.
	Percent of households without a vehicle within ¼ mile walk of transit stop.
	Percent of key destinations within ¼ mile walk of transit stops.

Service Design Measures

When routes run and how frequently they run are key components of transit service. Service design metrics were developed early in the project to guide the planning and scheduling of the transit scenarios for Albany. Table 33~~Table 31~~ lists the span and frequency goals for different route types (local and commuter), for each service day (weekday, Saturday and Sunday). These reflect the long-term desire for improved service levels.

[8] Daily Boardings are half of the Net Change in Daily Ridership from Table 30~~Table 11~~.

Table 33~~31~~ Service Design Targets

Service Type	Weekday	Saturday	Sunday
Span of Service (hours)			
Local	16	12	12
Commuter	6 AM-9 AM 3 PM-6 PM	0	-
Frequency of Service (minutes)			
Local	60	60	60
Commuter	4 trips per day	4 trips per day	-

Table 34~~Table 32~~ identifies the percent of service hours in each route that meet the span and frequency goals. A summary of the scenarios is in Table 35~~Table 33~~. Overall, the scenarios continue to fall short of meeting the span goals, while the frequency goals are achieved in all scenarios, except the Short-Term Scenario.

Table 34~~32~~ Achievement of Service Design Targets

Scenario	Route	Route Type	Span		Meets Span Goals	Frequency	Meets Frequency Goals
Existing	1	Local	6:30 AM – 8:40 PM	2 hours	No	60 min	Yes
	2	Local	9 AM – 6 PM	9 hours	No	60 min	Yes
	3	Local	9 AM – 6 PM	9 hours	No	60 min	Yes
	Percent of service hours meeting goals:				**0%**	**-**	**100%**
Short-Term	1	Local	6:30 – 11:45 AM 2:00 – 5:45 PM	9 hours	No	90 min	No
	2	Local	7:15 – 11:00 AM 1:15 – 6:30 PM	9 hours	No	90 min	No
	3	Local	6:30 – 11:45 AM 2:00 – 5:45 PM	9 hours	No	90 min	No
	4	Local	7:15 – 11:00 AM 1:15 – 6:30 PM	9 hours	No	90 min	No
	Percent of service hours meeting goals:				**0%**	**-**	**0%**
Medium-Term	1	Local	7:00 AM – 6:30 PM	11.5 hours	No	60 min	Yes
	2	Local	6:30 AM – 6:00 PM	11.5 hours	No	60 min	Yes
	3	Local	6:30 AM – 6:00 PM	11.5 hours	No	60 min	Yes
	4	Local	6:30 AM – 6:00 PM	11.5 hours	No	60 min	Yes
	5	Local	7:00 AM – 6:30 PM	11.5 hours	No	60 min	Yes
	6	Local	7:00 AM – 6:30 PM	11.5 hours	No	60 min	Yes
	Percent of service hours meeting goals:				**0%**	**-**	**100%**
Long-Term	1	Local	6:00 AM – 8:00 PM	14 hours	No	30 min	Yes
	2	Local	6:00 AM – 8:00 PM	14 hours	No	60 min	Yes

Scenario	Route	Route Type	Span		Meets Span Goals	Frequency	Meets Frequency Goals
	3	Local	6:00 AM – 8:00 PM	14 hours	No	60 min	Yes
	4	Local	6:00 AM – 8:00 PM	14 hours	No	60 min	Yes
	5	Local	6:00 AM – 8:00 PM	14 hours	No	30 min	Yes
	Percent of service hours meeting goals:				**0%**	**-**	**100%**

Table 3533 Service Hours Meeting Span and Frequency Goals

Scenario	Span	Frequency
Existing	0%	100%
Short-Term	0%	0%
Medium-Term	0%	100%
Long-Term	0%	100%

Travel Times

Transit riders place high value on travel times, especially riders who have other transportation options. Therefore, a key measure is how well each scenario reduces travel time and out-of-direction travel relative to the existing network. To estimate the travel times in each of the scenarios, hypothetical schedules were developed for each of the routes based on the span, frequency and cycle times. These schedules were used to calculate the travel time for a round trip, including transfer time, where applicable.

Table 36~~Table 34~~ provides the estimated travel times between six destinations for five different travel pairs. These travel pairs were identified with input from the RTP TAC Transit Subgroup. The locations and flows analyzed are shown in Figure 46. The roundtrip travel times for each pair and the percent change from the existing system are all provided.

The data suggest each of the scenarios will reduce roundtrip travel times for passengers, with overall roundtrip travel times reduced by 15 to 40%. Some trips may take considerably longer due to transfers or out-of-direction travel, while others are expected to see significant reductions as a result of more direct trips or route interlining.

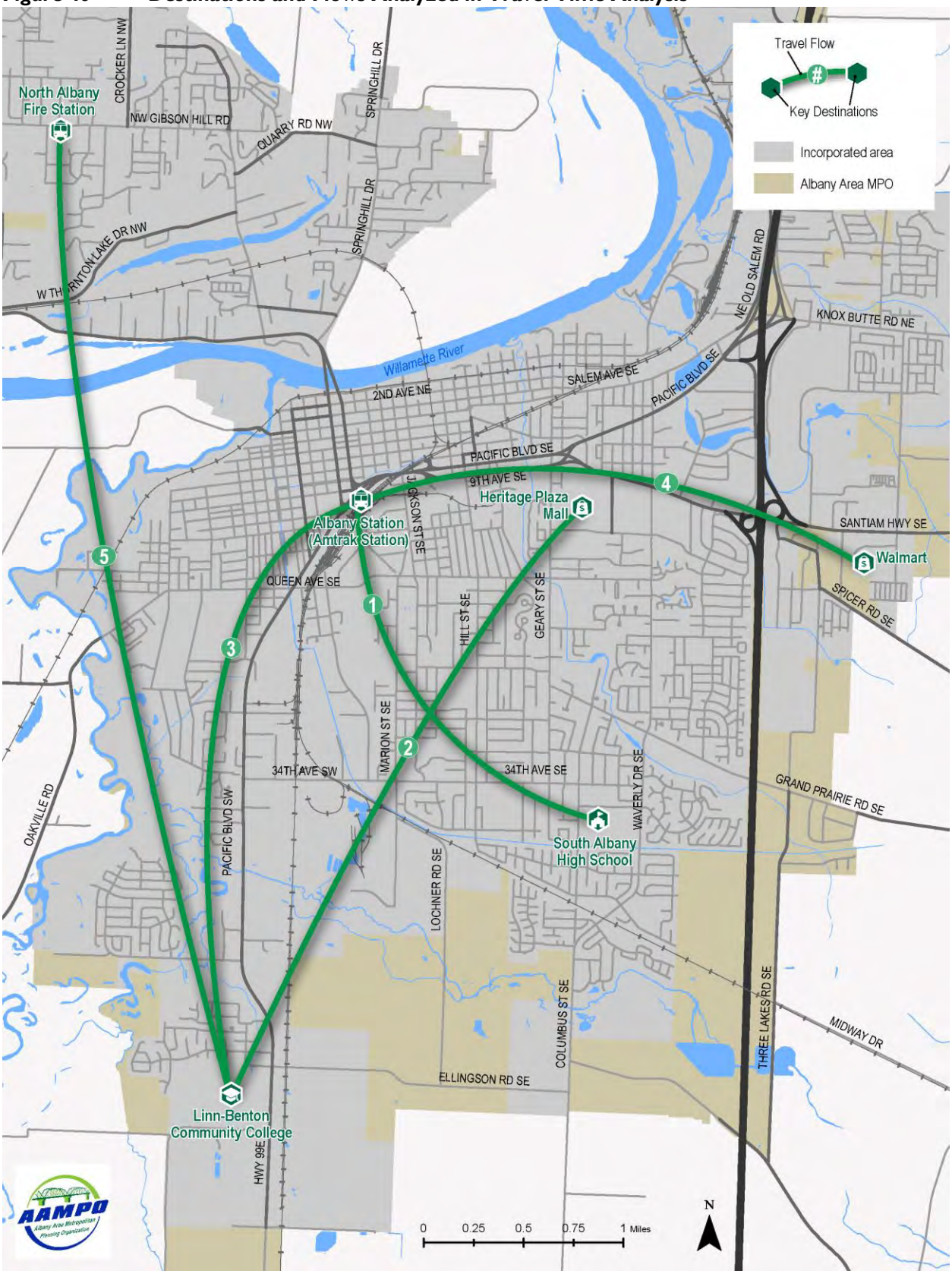
Table 3634 Estimated Roundtrip Travel Time between Destinations

ID	Start	End	Scenario Travel Times (Minutes)				Change in Travel time		
			Existing	Short	Medium	Long	Short	Medium	Long
1	South Albany High School	Albany Station (Amtrak Station)	59	38	63	44	-36%	-7%	-25%
2	LBCC	Heritage Plaza Mall	111	55	60	50	-50%	-46%	-55%
3	LBCC	Albany Station (Amtrak Station)	60	29	28	29	-52%	-53%	-52%
4	Walmart	Albany Station (Amtrak Station)	60	28	23	21	-53%	-62%	-65%
5	North Albany Fire Station	LBCC	60	90	120	80	50%	100%	33%
Average Roundtrip Travel Time (minutes)			**70**	**48**	**59**	**45**	**-31%**	**-16%**	**-36%**

Increase in travel times: 0 to 5% | 6 to 25% | 26% or more

Decrease in travel times: 0 to 5% | 6 to 25% | 26 to 50% | 51% or more

Figure 46 Destinations and Flows Analyzed in Travel Time Analysis



In-Service Hours

In addition to travel time, transit customers also place high value on reliability. People need to be sure that they can get to their destination at the times listed on the schedules. The current system suffers from low on-time performance. Buses often run late, and there is little time for operators to recover following each run. On-time performance, reliability and efficiency for future scenarios can best be predicted based on the percent of cycle time dedicated to in-service time (or run time).

A very high percent in-service time (or low percent layover time) indicates little time to recover from being behind schedule. A very low percent in-service time (or high percent layover time) indicates inefficient use of operator time and vehicle resources. A reasonable in-service time is between 80 and 90%, giving operators enough time to take a break or make up for time lost due to active train crossings or heavy passenger loads.

Table 37~~Table 35~~ lists the cumulative in-service time, cumulative cycle time, percent run time and percent layover time for each scenario. It shows a significant improvement in layover time for all scenarios. This suggests on-time performance and reliability will improve in all scenarios.

Table 37~~35~~ In-Service Time, Cycle Time and Layover Time by Scenario

Scenario	Cumulative In-Service Time	Cumulative Cycle Time	Percent In-Service Time	Percent Layover Time
Existing	120	120	100.0%	0.0%
Short-Term	149	180	82.7%	17.2%
Medium-Term	150	180	83.3%	16.7%
Long-Term[1]	247	300	82.3%	17.7%

[1] Long-Term service time and cycle time do not include commuter service.

Coverage of Employment and Housing

Service efficiency must be weighed against ensuring service availability. Each community decides how to allocate resources to either make sure the highest percent of people can walk to a bus route or to focus service on arterial corridors and expect people to walk a little farther to service. One way to measure coverage is to analyze the percent of jobs, households, and vulnerable population groups that would be served in each scenario. The existing system serves approximately 80% of jobs and 70% of households in Albany. Additionally, approximately 80% of people with incomes below the federal poverty level, and 80% of households with no access to a vehicle are within ¼ mile of a bus stop served by the current network. Table 38~~Table 36~~ shows the numbers of jobs, households, people below poverty and zero-vehicle households that would continue to be served in each scenarios.

Table 38~~36~~ Access to Transit within ¼-Mile Walkshed of Stops

Scenario	Number				Percent			
	Jobs	Households	People Below Poverty	Zero-Vehicle Households	Jobs	Households	People Below Poverty	Zero-Vehicle Households
Existing	14,777	12,622	6,981	1,057	77%	67%	78%	83%
Short-Term	13,820	11,810	6,163	974	72%	62%	69%	76%
Med-Term	14,612	12,176	6,450	1,032	76%	64%	72%	81%
Long-Term	15,193	13,315	6,997	1,085	79%	70%	78%	85%
Albany	**19,256**	**18,947**	**8,936**	**1,279**	**100%**	**100%**	**100%**	**100%**

Notes: Albany values are for the City of Albany only and do not include other areas within the AAMPO Area.. Jobs and Household values based on 2010 CALM data at the TAZ level. People Below Poverty values based on US Census ACS 2011-2015 5-Year Estimates by Block Group (Table C17002). Zero-Vehicle Household values based on US Census ACS 2011-2015 5-Year Estimates by Block Group (Table B25044).

Coverage of Key Destinations

In addition to providing access to jobs and households, transit serves community destinations, including commercial and shopping centers, health facilities, employment centers, educational facilities, and other high-demand destinations.

Table 39~~Table 37~~ lists the key destinations identified within Albany. These destinations were used to assess how well each of the scenarios provides services to locations where Albany residents live, work, shop, recreate and receive healthcare.

Table 39~~37~~ Key Destinations

ID	Name	Type
1	West Albany High School	Education - High School
2	South Albany High School	Education - High School
3	LBCC	Education - Higher Education
4	Sherman Oaks Apartments	Housing
5	Albany Court Senior Apartments	Housing
6	Albany RV & Trailer Park	Housing
7	Geary & 24th (high density housing)	Housing
8	Mennonite Village	Housing
9	Albany Public Library	Library
10	Samaritan Albany General Hospital	Medical
11	Samaritan Albany Cancer Resource Center	Medical
12	Downtown Albany	Downtown / Mixed Use Area
13	Heritage Plaza Mall	Shopping/Commercial
14	Walmart	Shopping/Commercial
15	Fred Meyer	Shopping/Commercial
16	North Albany Village	Shopping/Commercial
17	Bi-Mart	Shopping/Commercial
18	Safeway and Grocery Outlet	Shopping/Commercial

ID	Name	Type
19	Costco and Kohl's	Shopping/Commercial
20	Albany Senior Center	Social Services
21	YMCA	Social Services
22	Family Tree Relief Nursery	Social Services
23	Habitat for Humanity ReStore	Social Services
24	Linn County Public Health	Social Services
25	Boys & Girls Club	Social Services
26	Albany Station (Amtrak Station)	Transportation
27	North Albany Park & Ride	Transportation
28	North Albany Fire Station	Transportation

Of the 28 key destinations within Albany, only 24 are currently served within a ¼ mile of transit. All scenarios preserve service to the same 24 locations. With the expansion of service in the Long-Term Scenario, one additional key destination is served: the Mennonite Village on Columbus Street. Table 40~~Table 38~~ lists the percent of key destinations within a ¼-mile walk of stops in each scenario.

Table 40~~38~~ Key Destinations Served by Transit

Scenario	All Transit Service	
	Number	Percent
Existing	24	86%
Short-Term	24	86%
Medium-Term	24	86%
Long-Term	25	89%
Albany	**28**	**100%**

Note: Assumes a destination is served by transit if it is located within ¼ mile walk of a transit stop.