Acknowledgements

Production of this report has been the collective effort of the following people:

City of West Linn
Dennis Wright, Engineering Manager
Gene Green, Public Works Director
Pat Rich, Public Works
Bryan Brown, Planning Director
Chris Kerr, Senior Planner

DKS Associates
Carl Springer, PTP, PTOE, Project Manager
Colette Snuffin, PE, Project Engineer
Garth Appanaitis, EIT, Transportation Engineering Staff

Angelo Planning Group
DJ Heffernan, Project Manager
Darci Rudzinski

ODOT, Region 1
Gail Curtis, Senior Planner
Marty Jensvold, Traffic Management Engineer

Metro
John Mermin, Transportation Planner

Transportation Advisory Board
David Newell
Erik Gakstatter
Joyce Jackson
Susan Hopkins
Thomas Frank
Tim Collins
William Bennett

This project is partially funded by a grant from the Transportation and Growth Management (TGM) Program, a joint program of the Oregon Department of Transportation and the Oregon Department of Land Conservation and Development. This TGM grant is financed, in part, by federal Transportation Equity Act for the 21st Century (TEA-21), local government, and the State of Oregon funds. The contents of this document do not necessarily reflect views or policies of the State of Oregon.

Table of Contents

1. EXECUTIVE SUMMARY 1-1

INTRODUCTION 1-1
Plan Process and Committees 1-2
Public Involvement 1-2
GOALS AND POLICIES 1-3
TRANSPORTATION PLANS 1-4
Pedestrians 1-5
Bicycles 1-7
Transit 1-9
MOTOR VEHICLE 1-10
Street System Design 1-10
Transportation System Management (TSM) 1-10
Roadway Extensions to Improve Circulation 1-13
Transportation Demand Management (TDM) 1-15
Roadway Improvements 1-15
OTHER MODES 1-21
Rail 1-21
Interstate Bus Transportation 1-21
Air Transportation 1-21
Water Transportation 1-21
Freight and Goods Movement 1-22
Pipeline 1-22
FINANCING 1-22

2. GOALS AND POLICIES 2-1

OVERVIEW GOALS 2-1
GENERAL POLICIES AND ACTION MEASURES 2-2
STREETS 2-3
BICYCLES 2-5
PEDESTRIANS 2-6
TRANSIT 2-7
WATER 2-8
FREIGHT AND GOODS MOVEMENT 2-8
TRANSPORTATION DEMAND MANAGEMENT 2-8

3. EXISTING CONDITIONS 3-1

PEDESTRIAN 3-3
Facility Connectivity 3-3
Pedestrian Activity Levels 3-3
Issues to be Addressed through Plan Update Process 3-5
BICYCLE 3-7
Bicycle Activity Levels 3-7
Issues to be Addressed through Plan Update Process 3-8
TRANSIT 3-10
Issues to be Addressed through Plan Update Process 3-10
MOTOR VEHICLE 3-12
Functional Classification 3-12

Roadway Jurisdiction *3-15*
Roadway Connectivity *3-15*
Roadway Characteristics *3-15*
Pavement Conditions *3-20*
Designated Street Parking *3-21*
Access Management *3-21*
Motor Vehicle Volumes *3-22*
Existing Operation Conditions *3-28*
Traffic Safety *3-30*
Truck Freight *3-31*
Railroad Crossings *3-32*
OTHER TRAVEL MODES 3-32

4. FUTURE CONDITIONS 4-1

PROJECTED LAND USES 4-1
METRO AREA TRANSPORTATION MODEL 4-4
Trip Generation *4-6*
Trip Distribution *4-7*
Mode Choice *4-7*
Traffic Assignment *4-7*
Model Verification *4-7*
Future (2030) System Assumptions *4-8*
FUTURE FACILITY NEEDS 4-9
Future Intersection Capacity Analysis *4-12*
Traffic Signal Warrants *4-15*

5. PEDESTRIAN PLAN 5-1

NEEDS 5-1
Limited Connectivity *5-1*
Limited Facilities *5-2*
CURRENT POLICY 5-4
FACILITIES 5-5
STRATEGIES 5-5
PEDESTRIAN MASTER PLAN 5-6
PEDESTRIAN ACTION PLAN 5-10

6. BICYCLE PLAN 6-1

NEEDS 6-1
Connectivity *6-1*
Street Designations *6-1*
USER TYPES 6-2
CURRENT POLICY 6-2
FACILITIES 6-3
Bicycle Facility Design Considerations *6-3*
Bike Boulevard *6-5*
Bicycle Parking *6-6*
STRATEGIES 6-6
BICYCLE MASTER PLAN 6-7
BICYCLE ACTION PLAN 6-8

7. TRANSIT PLAN 7-1

BACKGROUND 7-1
Transit Telephone Survey *7-3*
Transportation Disadvantaged *7-4*

NEEDS 7-5
Transportation Disadvantaged *7-6*
CRITERIA 7-6
Transit Policies *7-7*
STRATEGIES 7-7
TRANSIT MASTER PLAN 7-9
COMPLEMENTING LAND USE ACTIONS 7-14
TRANSIT ACTION PLAN 7-14

8. MOTOR VEHICLE MASTER PLAN 8-1

STRATEGIES 8-1
TRANSPORTATION SYSTEM MANAGEMENT (TSM) 8-2
INTELLIGENT TRANSPORTATION SYSTEMS (ITS) 8-2
FUNCTIONAL CLASSIFICATION 8-3
How Street Functional Classification is Applied *8-3*
Classification Types *8-3*
ROADWAY CROSS-SECTION STANDARDS 8-4
NEIGHBORHOOD TRAFFIC MANAGEMENT (NTM) 8-10
ACCESS MANAGEMENT 8-11
TRAFFIC SIGNAL SPACING 8-12
LOCAL STREET CONNECTIVITY 8-13
TRANSPORTATION DEMAND MANAGEMENT 8-15
Insert Figure 8-7: Non-SOV Increase by TAZ 2030 Transportation Demand Management Scenario *8-19*
2030 Transportation Demand Management Scenario *8-20*
SAFETY 8-20
MAINTENANCE 8-21
MOTOR VEHICLE ALTERNATIVES ANALYSIS 8-21
Highway 43 Corridor *8-22*
10th Street Interchange Area *8-25*
Other Locations *8-27*
MASTER PLAN AND ACTION PLAN 8-28

9. OTHER TRAVEL MODES 9-1

RAIL TRANSPORTATION 9-1
Needs and Deficiencies *9-1*
Recommended Improvements *9-1*
INTERSTATE BUS TRANSPORTATION 9-2
Needs and Deficiencies *9-2*
Recommended Improvements *9-2*
AIR TRANSPORTATION 9-2
Needs and Deficiencies *9-2*
Proposed Improvements *9-2*
WATER TRANSPORTATION 9-3
Needs and Deficiencies *9-3*
Proposed Improvements *9-3*
FREIGHT AND GOODS MOVEMENT 9-3
Needs and Deficiencies *9-3*
Proposed Improvements *9-3*
PIPELINE 9-4
Needs and Deficiencies *9-4*
Proposed Improvements *9-4*

10. FINANCE AND IMPLEMENTATION 10-1

CURRENT FUNDING STRATEGIES 10-1
State Fuel Tax and Vehicle License Fee 10-1
System Development Charge 10-2
Exactions 10-2
Street Maintenance Fee 10-2
Summary 10-3
PROJECTS AND PROGRAMS 10-3
Project Cost Estimates 10-3
Other Transportation Programs and Services 10-4
West Linn Costs for TSP Action Plans 10-4

List of Tables

Table 1-1: Pedestrian Action Plan (Costs included in Highway 43 Concept Plan) 1-5
Table 1-2: Bicycle Action Plan and Cost Estimates 1-7
Table 1-3: Transit Action Plan 1-9
Table 1-4: Access Spacing Standards for City Street Facilities 1-12
Table 1-5: Motor Vehicle Master Plan and Action Plan Projects – City of West Linn Facilities 1-17
Table 1-6: Motor Vehicle Master Plan and Action Plan Projects – ODOT Facilities 1-18
Table 1-7: Motor Vehicle Action Plan Cost Summary 1-19
Table 1-8: Transportation Action Plan Costs over 23 Years 1-23
Table 3-1: PM Peak Hour Pedestrian Cossing Volumes at Study Intersections 3-4
Table 3-2: PM Peak Hour Bicycle Crossing Volumes at Study Intersections 3-7
Table 3-3: Transit Service Route Weekday Peak Period Level of Service 3-10
Table 3-4: West Linn Street Functional Classification Desription 3-13
Table 3-5: Conflicting Functional Classification 3-15
Table 3-6: Existing Study Area Roadway Characteristics by Functional Class 3-16
Table 3-7: ODOT Access Management Standards 3-21
Table 3-8: Clackamas County Approach Spacing Standards 3-21
Table 3-9: West Linn Spacing Standards 3-22
Table 3-10: ODOT Operating Standads 3-28
Table 3-11: Weekday PM Peak Hour Intersection Level of Service 3-29
Table 3-12: Collision Rates 3-31
Table 3-13: PM Peak Hour Truck Volumes at Study Intersections 3-32
Table 4-1: West Linn Land Use Summary 4-2
Table 4-2: Approximate Average PM Peak Hour Trip Rates Used in Metro Travel Demand Model 4-6
Table 4-3: Existing and Future Projected Vehicle Trips 4-6
Table 4-4: RTP Projects Included in Future 2030 Travel Demand Modeling 4-8
Table 4-5: Weekday PM Peak Hour Intersection Level of Service 4-13
Table 4-6: Traffic Signal Warrant Analysis for PM Peak Hour Volume 4-15
Table 5-1: Pedestrian Deficiency Locations 5-2
Table 5-2: Pedestrian Master Plan Projects 5-6
Table 5-3: Pedestrian Action Plan 5-10
Table 6-1: Bikeway Types 6-3
Table 6-2: Bicycle Master Plan 6-7
Table 6-3: Bicycle Action Plan 6-8
Table 7-1: West Linn Commute Destinations 7-4
Table 7-2: Transit Facility Strategy Comparison 7-8
Table 7-3: Potential Transit Projects 7-9
Table 7-4: Transit Action Plan 7-15

Table 8-1: City of West Linn Roadway Cross-Section Standards....8-10
Table 8-2: Traffic Calming measures by Roadway Functional Classification....8-11
Table 8-3: Access Spacing Standards for City Street Facilities....8-12
Table 8-4: ODOT Access Spacing Standards for Highway 43....8-12
Table 8-5: Transportation Demand Management Strategies....8-16
Table 8-6: TDM Improvements included in the RTP 2025 Financially Constrained System....8-17
Table 8-8: 2030 Base PM Peak Hour LOS – Intersections Not Meeting Standards....8-22
Table 8-9: 2030 Weekday PM Peak Hour LOS – Highway 43 Concept Plan Improvements....8-23
Table 8-10: 2030 Weekday PM Peak Hour LOS – Highway 43 5-Lane Widening and Improvements....8-24
Table 8-11: 2030 Weekday PM Peak Hour LOS – Split Diamond Alternative....8-27
Table 8-12: 10th Street Interchange Alternative Benefit Comparison....8-27
Table 8-13: 2030 Weekday PM Peak Hour Intersection Operations – Other West Linn Locations....8-28
Table 8-14: Motor Vehicle Master Plan and Action Plan Projects....8-29

List of Figures

Figure 3-1: Study Area....3-2
Figure 3-2: Existing Pedestrian Facilities....3-6
Figure 3-3: Existing Bicycle Facilities....3-9
Figure 3-4: Existing Transit Facilities....3-11
Figure 3-5: Existing Functional Class....3-14
Figure 3-6: Roadway Jurisdiction....3-18
Figure 3-7: Existing Intersection Control....3-19
Figure 3-8: 24 Hour Volumes....3-23
Figure 3-9: 24 Hour Tube Count Data on Willamette Falls Drive and Salamo Road....3-24
Figure 3-10: PM Peak Hour Traffic Volumes....3-25
Figure 3-11: Freight Routes....3-33
Figure 4-1: Transportation Analysis Zones (TAZ)....4-3
Figure 4-2: Model Process....4-5
Figure 4-3: Percent Increase in PM Peak Hour Volumes....4-10
Figure 4-4: Future Study Area Intersection Operations....4-11
Figure 5-1: Pedestrian Plan....5-9
Figure 6-1: Bicycle Markings....6-5
Figure 6-2: Bicycle Plan....6-9
Figure 7-1: Existing/Proposed Transit Facilities....7-2
Figure 7-2: TriMet Route 154 – Previous and Current Service Routes....7-11
Figure 7-3: Potential Transit Supportive Areas....7-13
Figure 8-1: Functional Class....8-5
Figure 8-2: Roadway Cross Section Standards – Arterial....8-6
Figure 8-3: Roadway Cross Section Standards – Collector....8-7
Figure 8-4: Roadway Cross Section Standards – Neighborhood Route....8-8
Figure 8-5: Roadway Cross Section Standards – Residential Local....8-9
Figure 8-6: Local Street Connectivity....8-14
Figure 8-7: Growth in Non Single Occupancy Vehicle (SOV) Use....8-19
Figure 8-8: 10th Street Interchange Configuration Alternatives....8-26
Figure 9-9: Motor Vehicle Master Plan Project Locations....8-31

Technical Appendix

(Included in a separate volume)