



Metro

600 NE Grand Ave.
Portland, OR 97232-2736

Agenda

Meeting: **RTP Transportation Design Work Group Meeting #1**
 Date: Thursday, June 29, 2017
 Time: 10 a.m. to Noon
 Place: Metro Regional Center, Room 401
 Purpose: Review Draft Table of Contents for the Designing Livable Streets and Trails Guide
 Outcome(s): Input on Table of Contents

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|------------|---|----------------|
| 10 a.m. | Welcome & Introductions <ul style="list-style-type: none"> • Name and organization • Favorite street or trail in the region and why • Topics for forums, panels | Tom Kloster |
| 10:20 a.m. | Project Overview <ul style="list-style-type: none"> • Work group role • Consultant team • Timeline • Lessons learned and new challenges | Lake McTighe |
| 10:45 a.m. | Draft Table of Contents and Resource List <ul style="list-style-type: none"> • Project approach • Discussion and input | Hermanus Steyn |
| 11:45 a.m. | Next steps <ul style="list-style-type: none"> • July 5 - provide any additional comments • Sept 28 – Work group meeting #2 • Nov 9- Work group meeting #3 | Lake McTighe |
| Noon | Adjourn | Tom Kloster |

Meeting Packet	Next Meetings
• Agenda	Thursday, Sept. 28, 2017 9-11 a.m. Metro, room 401 Draft annotated outline Thursday, Nov. 9, 2017 9 to 11 a.m. Metro, room 401 Final annotated outline, example chapter
• Work Group Charge	
• Project Overview Memo	
• Work Group Roster	
• Draft Table of Contents	
• Draft List of Design Resources	

Directions, travel options and parking information

Covered bike racks are located on the north plaza and inside the Irving Street visitor garage. Metro Regional Center is on TriMet bus line 6 and the streetcar, and just a few blocks from the Rose Quarter Transit Center, two MAX stations and several other bus lines. Visit our website for more information: <http://www.oregonmetro.gov/metro-regional-center>

Memo

Date: June 21, 2017
To: 2018 RTP Transportation Design Work Group and Interested Parties
From: Lake McTighe, Senior Transportation Planner
Subject: 2018 RTP Transportation Design Work Group Meeting #1

Purpose

The purpose of the first meeting of the Transportation Design Technical Work Group is to:

- Orient the work group members on the Designing Livable Streets and Trails Guide project.
- Receive input from work group members on the major elements of the draft Table of Contents for the guide and the draft list of resources.

Project Overview

Transportation design is one of eight policy priority areas for the update of the 2018 Regional Transportation Plan (RTP) update.¹ Transportation design policy and guidance will be updated and informed by the Designing Livable Streets and Trails Guide project. The purpose of the project is to update and provide new design guidance for roadways and regional trails to support achieving regional land use and transportation goals and policies.

The Designing Livable Streets and Trails Guide project will:

- Update current regional street and green street design guidelines to reflect current design research, updated agency policies, and best practices for design.
- Create design guidelines for regional multi-use paths and regional nature trails, reflecting current best practices and context sensitive design.
- Combine existing guides into one user-friendly guide with additional online resources.
- Develop resources, including decision making guidance, an image library, community stories, and case studies.
- Develop web-page for easy access of guide and resources.
- Convene workshops, forums and tours to engage, build partnerships, and increase awareness and knowledge of the role of designing livable streets in improving safety and creating healthy, equitable communities and a strong economy.
- Update RTP Design Classification policy map.

Project Approach and Timeline

Scoping of the project started in 2015 and was informed by interviews with agency staff. The project is anticipated to be completed by the end of 2018. The Transportation Design Work Group will provide input and technical expertise and will advise Metro staff on the project. Briefings on the progress of the project will be made to the Transportation Policy Alternatives Committee

¹ The policy priorities define the primary focus of the technical work, policy discussions and engagement activities to support development of the 2018 RTP. Each of the policy priority areas has a work group that will provide input to staff on draft materials and implementing policy direction from the Metro Council and regional policy committees. <http://www.oregonmetro.gov/public-projects/2018-regional-transportation-plan>

(TPAC) and the Metro Technical Advisory Committee (MTAC); those committees will also provide technical input. The work group will meet between six and eight times.

The bulk of the project is divided into two phases. Phase 1, currently underway, seeks input from the work group to determine the content and organization of the design guide. The final product in Phase 1 will be an annotated outline and example visualizations used to gain agreement on the structure and content of the guide. Phase 2 will develop and finalize the design guide and supporting materials. Engagement activities coordinated by Metro will delve into particular topic areas will take place in both phases.

Metro will coordinate the project with relevant 2018 RTP topic areas, including freight, safety, transit and equity.

June 2015 to March 2017 – Scope Project

- Metro conducted interviews with staff from local jurisdictions and agencies to inform the scope of work.
- TPAC and MTAC provided input on the project scope in Sept and Oct of 2015.
- Metro developed a scope of work and selected Kittelson and Associates and their sub-consultants for the project.

April to December 2017 - Phase 1: Draft Outline, Determine Content and Policy Updates

- Develop outline for the guide, receive input from work group on major elements to include in the guide.
- Develop annotated outline indicating intent and level of detail for the content.
- Develop example chapter and visualizations.
- Update Design Classification policy map in the RTP.

January to December 2018 - Phase 2: Develop Guide and Resources

- Public comment on the draft 2018 RTP.
- Develop guide and resources.
- Develop webpage.

Project Team and Work Group

Input on the development of the guide and supporting resources will be provided through a variety of formats. The key participants directly involved in the project are identified below.

- **Project Management Team:** The project is guided by Lake McTighe (Metro, project manager), Lidwien Rahman (ODOT, project liaison), and Kittelson and Associates.
- **Consultant Team:** Kittelson and Associates (Karla Kingsley, Hermanus Steyn, Marc Butorac, Julia Knudsen), GreenWorks (Mike Faha, Gill Williams), Paste in Place (Ryan Sullivan), KLiK Concepts Erin Riddle, Brenda Fuste Bond Payne), and Morgan Holen, consulting arborist.
- **Technical Work Group:** Work group members include topical experts and community, business, city and county partners. The primary role of the work group is to provide in-depth and professional review of the design guidelines as they are developed.

- **Metro Internal Review Team:** Project deliverables are reviewed by an internal review team at Metro covering topics on freight, trails, wildlife habitat, transit, pedestrian and bikeway travel, placemaking and equity.
- **Metro Council and technical and policy advisory committees:** Briefings on the project will be made throughout the process to the Metro Council and to the Transportation Policy Alternatives Committee (TPAC), the Metro Technical Advisory Committee (MTAC), the Joint Policy Advisory Committee on Transportation (JPACT) and the Metro Policy Advisory Committee (MPAC).

Project Background

Metro street design guidelines were first developed in 1997 to provide a set of tools to elected officials, public agency staff, and the private sector for achieving regional livability goals, including protecting air and water quality. A primary goal was to implement the 2040 Growth Concept by linking land-use and transportation planning and providing design guidance for streets that was responsive to surrounding land uses. The design guidelines also provided tools to address state and federal transportation policies related to context sensitive design, the Clean Water Act and the awareness of the impacts of transportation on habitat, wildlife and endangered species.

The program started with the release of the Creating Livable Streets guidelines. Since then the program has grown to include a suite of guidelines. The guidelines are currently only available in hard copy through mail order, and the webpage content for the program is minimal. The need to update the design guides was identified as an implementation activity in the 2010 RTP.

Description of current guidelines:

- **Creating Livable Streets—Street Design Guidelines.** Last updated in 2002, these guidelines describe how communities can design streets to better serve walking, biking and transit while also preserving auto travel and freight movement. The guidelines described in the handbook serve as tools for improving existing streets and designing new streets.
- **Green Streets—Innovative Solutions for Stormwater and Stream Crossings.** Created in 2002, this handbook describes basic stormwater management strategies and illustrates “green” street designs with features such as street trees, landscaped swales and special paving materials. The handbook also provides guidance on balancing the needs of protecting streams and wildlife corridors from urban impacts and providing access across streams as part of good transportation design.
- **Trees for Green Streets—An Illustrated Guide.** This handbook describes the role of street trees in managing stormwater. Appropriate tree species for the region are illustrated in the book, with a list of major characteristics. The handbook is intended for use in conjunction with the Creating Livable Streets and Green Streets handbooks.
- **Wildlife Crossings– Providing safe passage for urban wildlife (will not be updated through the project).** This was developed in 2009 and describes an approach to identifying wildlife inventory and linkages and mitigating the ecological effects of roads on wildlife populations through wildlife crossings.
- **Green Trails (will not be updated through the project)– Guidelines for environmentally friendly trails.** Developed in 2002, this handbook describes approaches to developing trails

and paths that are friendly to the surrounding environment, keeping impacts on natural resources to a minimum.

The guidelines are intended to be used in a variety of ways; however use of the guidelines has declined as they become more outdated and more people desire resources to be available on-line. Metro utilizes the handbooks when commenting on and providing technical assistance on transportation plans, projects and program. The Regional Transportation Functional Plan (RTFP), the implementing plan of the Regional Transportation Plan (RTP), specifies that city and county street design regulations shall allow implementation of the recommended designs. Additionally, transportation projects funded with federal Regional Flexible Funds must follow the design guidelines.

Since the region's growth strategy was adopted and the current design guidelines were last updated, many transportation projects have been completed. Lessons learned and recognition of new challenges should inform the project and the update of the design guidelines, including:

- Use of outcomes based planning framework and performance based design
- One size approach to transportation design does not fit all projects
- Adoption of the 2010 Regional Freight Plan, the 2014 Regional Active Transportation Plan, and the 2014 Climate Smart Strategy
- Completion of the 2012 Regional Transportation Safety Plan, identification of high injury corridors in the region, and rising pedestrian deaths in the region
- Expanding national research and efforts related to street design, especially for bikeway and intersection designs
- Nature can be part of the street
- Recognition of regional trails and multi-use paths as an important part of transportation
- Stormwater management is the responsibility of transportation planners and engineers
- Design can help reduce speeds and prevent severe injury crashes
- Autonomous vehicles
- Rising use of e-shopping and door to door delivery of goods
- Rising severe crashes
- Rapidly growing bicycle commute trips
- Growing diversity
- Growing aging population

Next Steps

June 30	Update to Transportation Policy Alternatives Committee (TPAC)
July 5	Deadline for work group to provide input on draft Table of Contents
July 19	Update to Metro Technical Advisory Committee (MTAC)
Sept 28	Work Group Meeting #2 – Annotated Outline
Nov9	Work Group Meeting #3 Final Annotated Outline/Sample Visualizations
2018	Phase 2 Begins

Attachments

- Work Group Roster
- Draft Table of Contents – Metro Designing Livable Streets and Trails Guide
- Draft List of Design Resources



2018 REGIONAL TRANSPORTATION PLAN

Roster for Design Technical Work Group

Metro is working with local, regional and state partners and the public to update the region's shared vision and strategy for investing in the regional transportation system for the next 25 years.

To support development of the 2018 Regional Transportation Plan, Metro staff are convening eight technical work groups to provide input to the project team on implementing policy direction from the Metro Council and regional policy advisory committees. In this role, the work group members review and provide feedback to Metro staff on draft materials and analysis, keep their respective elected officials and agency/organization's leadership informed. The work groups also help identify areas for further discussion by the Metro Council and regional technical and policy advisory committees.

Work group members include topical experts and representatives from the Metro Technical Advisory Committee (MTAC) and the Transportation Policy Alternatives Committee (TPAC) or their designees, and other community, business, city and county partners. Meetings of the technical work groups are posted on Metro's calendar at www.oregonmetro.gov/calendar and www.oregonmetro.gov/rtp.

Design Work Group | as of 5/22/17

Name	Affiliation
1. Lake McTighe (project manager) Anthony Buczek Robert Spurlock	Metro
4. Chris Strong	City of Gresham
5. Denver Igarta (planning) Scott Batson (engineering) Zef Wagner (alternate)	Portland Bureau of Transportation, City of Portland
6. Jeff Owen	TriMet
7. Dyami Valentine (planning) Rob Saxton (engineering, alternate)	Washington County
8. James Reitz Richard Blackmun (alternate)	City of Forest Grove
9. Jeannine Rustad	Tualatin Hills Parks and Recreation District
10. Scott Hoelscher (planning) Rick Nys (engineering)	Clackamas County
11. Carol Chesarek	Community member/ MTAC
12. Stephanie Noll	Street Trust
13. Zach Weigel	City of Wilsonville
14. Joseph Auth Rich Crossler-Laird Lidwien Rahman (project liaison)	Oregon Department of Transportation
15. Ryan Guy Hashagen	Better Blocks PDX, Portland Pedals
16. Brendon Haggerty	Multnomah County – Public Health
17. Bob Galati Julia Hajduk (alternate)	City of Sherwood
18. John Boren	City of Hillsboro
19. Allan Schmidt	Portland Parks and Recreation, City of Portland

20.	Mike Houck	Urban Greenspaces Institute
21.	Kathryn Doherty-Chapman	Oregon Walks
22.	Nico Larco	Sustainable Cities Initiative, University of Oregon
23.	TBD	Multnomah County – Planning and Engineering
24.	Tim Kurtz	Portland Bureau of Environmental Services, City of Portland
25.	Mary Coolidge	Audubon of Portland

The following Draft Table of Contents (TOC) is based on the information in the existing *Creating Livable Streets, Green Streets, and Trees for Green Streets* guides, work sessions with Metro staff, and a review of other agency best practices. The specific information for each section will be determined during the development of the Annotated Outline. The content for the guide will be a combination of existing material from the existing guides and new information from current policies and best practices.

METRO DESIGNING LIVABLE STREETS & TRAILS GUIDE

DRAFT TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

- 1.1 Purpose
 - Regional Land Use and Transportation Vision
 - Regional Transportation Plan (RTP) Goals
- 1.2 Who Will Use the Guide
- 1.3 How to Use the Guide
- 1.4 Summary

CHAPTER 2: DESIGN IN CONTEXT

- 2.1 Introduction
 - Street and Trail Design in Land Use Context
 - Lessons Learned and New Challenges
- 2.2 Regional Policy
 - 2040 Regional Land Use Types
 - Regional Modal Plans
 - Regional Transportation Functional Plan (RTFP)
 - Climate Smart Strategy
 - Vision Zero
 - Equity
- 2.3 State Guidance
- 2.4 National Guidance
- 2.5 Relationship to Local Policies

CHAPTER 3: REGIONAL STREET AND TRAIL DESIGN TYPES

- 3.1 Introduction: Why street and trail design is important
- 3.2 Connecting Land Use and Transportation Through design
 - Throughways: Freeways and Highways (may be combined)
 - Boulevards: Regional and Community (may change Community to Main Streets)
 - Streets: Regional and Community
 - Roads: Urban and Rural (may change Urban to Industrial)
 - Regional Multi-Use Paths (new)
 - Regional Nature Trails (new)
- 3.3 Design Functions
 - Functions by Street and Trail Design Type
 - Pedestrian Access: People walking and people using a mobility device
 - Bicycle Access: People riding bicycles
 - Transit Access: People using transit
 - Truck Freight Access: Moving Goods
 - Auto Access: People driving and automated vehicles
 - Place-making and Public Space
 - Public Green Space
 - Corridors for Nature
 - Utility Corridors
 - Curb Side Zone
 - Physical Activity
 - Emergency Vehicle Access
- 3.4 Design Outcomes
 - Safety - Elimination of Serious and Fatal Crashes
 - Transportation Choices
 - Healthy People
 - Reduced Green House Gas Emissions
 - Clean Air and Water
 - Economic Vitality
 - Equity
 - Vibrant Communities
 - Resiliency

CHAPTER 4: DESIGN ELEMENTS AND CONSIDERATIONS

- 4.1 Introduction
 - Priorities for Design Type and Context
 - Designing for Each Function

- 4.2 Design Elements
 - The Street Realm
 - The Travelway Realm
 - Travel Lane Width
 - Number of Lanes
 - Medians
 - Roundabouts
 - Mid-Block Crossings
 - Transit Lanes
 - Freight Access
 - Bikeways
 - Intersections
 - Mixing Zones
 - Traffic Calming
 - Lighting
 - Wildlife Crossings
 - Curb Side Zone
 - On-Street Parking
 - Street Seats
 - Loading/Unloading
 - Bicycle Corrals
 - Bikeways
 - Bus and Bikeway Interactions
 - Pedestrian Realm
 - Sidewalks and Sidewalk Functions
 - Street Trees Bicycle Parking
 - Public Transit Stops and Stations
 - Streetscape Features
 - Landscaping and Planter Strips
 - The Land Use Realm
 - Buildings Facing the Street
 - Building Street Frontages

- Land-Use Edge Treatments – Buffers, Soundwalls
- Adjacent Land Use
- Regional Multi-Use Paths
 - Widths
 - Lighting
 - Surfaces
 - Environmental Protections
- Regional Nature Trails
 - Widths
 - Lighting
 - Surfaces
 - Environmental Protection
- Transitions
- Stormwater and Run-off Management
 - Bio-Swales
 - Street Trees
 - Vegetation
 - Impervious Surfaces
- Noise Mitigation
- Crime Prevention Through Environmental Design (CPTED) principles
- Street Connectivity

4.3 Design Considerations

- Emergency Vehicle Access
- Transit Access
- Freight Access
- Wildlife Habitat Impacts
- Multimodal Considerations at Complex Intersections
- Removing Existing Parking
- Limited Right of Way (ROW) Considerations
- Volume to Capacity Ratio – Land Use
- Mid-Block Crossings
- Traffic Diversion (from street calming, bicycle boulevards, etc)
- Streets on the Urban-Rural Divide
- Public Perception of “Road Diets”
- Public Perception of Trails (including safety and security)
- Case Studies

CHAPTER 5: DECISION-MAKING IN CONTEXT

- 5.1 Introduction
 - Policy Considerations
 - Applying Engineering Principles
 - Focus on Intended Outcome
- 5.2 Performance-Based Design
 - Developing Complete Networks to Serve the Desired Functions
 - Defining Priorities and Needed Functions for Each Travelway
 - Flexibility in Design
 - Evaluating Trade-offs
- 5.3 Applications – What/If Scenarios
 - Retrofit versus New Street
 - Constrained Right-of-Way (ROW)
 - Case Studies

CHAPTER 6: DESIGN TREATMENTS IN CONTEXT

- 6.1 Streets: Urban and Suburban Context
 - Throughways: Freeways and Highways (may be combined)
 - Boulevards: Regional and Community (may change Community to Main Streets)
 - Streets: Regional and Community
 - Roads: Urban and Rural (may change Urban to Industrial)
- 6.2 Trails: Urban and Suburban Context
 - Regional Multi-Use Paths (new)
 - Regional Nature Trails (new)

CHAPTER 7: IMPLEMENTATION STRATEGIES

- 7.1 Project Development Guidance
- 7.2 Temporary/Pilot Implementation
- 7.3 Low-cost/Near-term
- 7.4 Incremental change (e.g. lot-by-lot through development)
- 7.5 New Street and Trail Designs
- 7.6 Repaving
- 7.7 Incremental Solutions
- 7.8 Evaluation/Performance Based Design
- 7.9 Case Studies

Reference List			
Title	Author/Organization	Location (link)	Description
Smart Transportation Guidebook: Planning and Designing Highways and Streets that Support Sustainable and Livable Communities	NJ DOT/ Penn DOT	http://www.state.nj.us/transportation/community/mobility/pdf/smarttransportationguidebook2008.pdf	Guidebook provides context sensitive planning and design guidance for roadways and transportation networks
Philadelphia Complete Streets Design Handbook	Philadelphia's Mayor's Office of Transportation and Utilities	http://www.philadelphiastreet.com/images/uploads/resource_library/c-s-handbook.pdf	Guidebook on complete street's design guidance specific to Philadelphia City streets.
Complete Transportation Guidebook	Arizona DOT	https://www.azdot.gov/docs/default-source/planning/ctguidebook.pdf	The Complete Transportation Guidebook is a reference tool for integrating sustainable practices into transportation planning, scoping, and design throughout the Arizona Department of Transportation (ADOT) project development process.
FDOT Greenbook: Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways	Florida DOT	http://www.fdot.gov/roadway/FloridaGreenbook/FloridaGreenbook.pdf	Roadway design manual intended to "provide uniform minimum standards and criteria for the design, construction, and maintenance of all public streets, roads, highways, bridges, sidewalks, curbs and curb ramps, crosswalks (where feasible), bicycle facilities, underpasses, and overpasses used by the public for vehicular and pedestrian traffic as directed by Sections 20.23(4)(a), 334.044(10)(a), 334.048(3) and 336.045, F.S."
FDOT Traditional Neighborhood Development Handbook	Florida DOT	http://www.fdot.gov/roadway/FloridaGreenbook/TND-Handbook.pdf	This Traditional Neighborhood Development Handbook (TND) is intended to supplement Chapter 19 Traditional Neighborhood Development of the Florida Greenbook and to provide best practices to facilitate proper design of TND communities.
Main Street, California: A Guide For Improving Community and Transportation Vitality	Cal Trans	http://www.dot.ca.gov/hq/LandArch/mainstreet/main_street_3rd_edition.pdf	This document is an informational guide that reflects many of the recent updates to Caltrans manuals and policies that improve multimodal access, livability and sustainability within the transportation system. "Main Street, California" helps the reader locate information about standards and procedures described in the Caltrans Highway Design Manual (HDM), the California Manual on Uniform Traffic Control Devices (California MUTCD), and the Project Development Procedures Manual (PDPM).

Reference List

Title	Author/Organization	Location (link)	Description
Class IV Bikeway Guidance (Separated Bikeways/Cycle Tracks)	Cal Trans, Division of Design, Office of Standards and Procedures	http://www.dot.ca.gov/hq/oppd/dib/dib89.pdf	The design criteria and guidance in this DIB has been written to allow designers to exercise sound judgment when applying it, consistent with the Project Development philosophy (see Caltrans Highway Design Manual Index 81.1) when designing projects and has been written to allow for flexibility in applying the design criteria, taking into consideration the context of the project location; which enables the designer to tailor the design, as appropriate, for the specific circumstances while maintaining safety.
NACTO Urban Street Design Guide	NACTO	http://nacto.org/publication/urban-street-design-guide/	Design guidebook on best practices of street design in an urban setting. The design guide compiles best practices from cities across the US and provides context sensitive design guidance.
NACTO Urban Bikeway Design Guide	NACTO	http://nacto.org/publication/urban-bikeway-design-guide/	The NACTO Urban Bikeway Design Guide is based on the experience of the best cycling cities in the world. The designs in this document were developed by cities for cities, since unique urban streets require innovative solutions. Most of these treatments are not directly referenced in the current version of the AASHTO Guide to Bikeway Facilities, although they are virtually all (with two exceptions) permitted under the Manual on Uniform Traffic Control Devices (MUTCD).
NACTO Urban Street Stormwater Guide	NACTO	To become available online. Currently order hard copy.	infrastructure related to sustainable stormwater solutions in our public ROWs. The guide defines and illustrates typical green street stormwater elements.
Rethinking Streets	University of Oregon Sustainable Cities Initiative	http://www.rethinkingstreets.com/	This guide reviews evidence-based transformations of 25 various street typologies across the U.S.
WSDOT Design Manual (Chapter 1230)	Washington State DOT	http://www.wsdot.wa.gov/publications/manuals/fulltext/M22-01/1230.pdf	This guide provides cross section level design guidance based on jurisdictional requirements in Washington State.
Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts	FHWA	https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/fhwahep16055.pdf	This publication is a resource for practitioners seeking to build multimodal transportation networks. The publication highlights ways that planners and designers can apply the design flexibility found in current national design guidance to address common roadway design challenges and barriers. It focuses on reducing multimodal conflicts and achieving connected networks so that walking and bicycling are safe, comfortable, and attractive options for people of all ages and abilities.
Community ReDesign: Integrating Land Use, Transportation and Natural Resources	University of Minnesota: Design Center for Urban American Landscape, College of Architecture and Landscape Architecture	http://www.wsdot.wa.gov/NR/rdonlyres/171FFBE0-F823-4888-BDAB-061D259DAE07/0/Community_Redesign.pdf	The handbook concentrates on the place-making elements of design that can enhance livability in the following ways: protecting and restoring natural systems, strengthening social connections, providing transportation choices, enhancing homes and neighborhoods, and integrating land uses and economic activities.

Reference List			
Title	Author/Organization	Location (link)	Description
When Main Street is a State Highway: A Handbook for Communities and Designers	Maryland State Highway Administration	http://www.sha.maryland.gov/OHD/MainStreet.pdf	This handbook concentrates on the development of projects through the planning process and the integration of street design treatments, placemaking, landscape and land use along Maryland State Highway Administration's roads.
Separated Bike Lane Planning and Design Guide	Massachusetts DOT	https://www.massdot.state.ma.us/highway/DoingBusinessWithUs/ManualsPublicationsForms/SeparatedBikeLanePlanningDesignGuide.aspx	This planning and design guide provides guidance on best practices as it relates to separated bike lanes. The guide presents considerations and strategies for the development of separated bike lanes. The Guide provides a framework for determining when separated bike lanes are appropriate and feasible. It presents design guidance for separation strategies, bike lane configuration, and considerations for transit stops, loading zones, utilities, drainage, parking and landscaping.
Designing Walkable Urban Thoroughfares: A Context Sensitive Approach: An ITE Recommended Practice	ITE	http://library.ite.org/pub/e1cff43c-2354-d714-51d9-d82b39d4dbad	This report focuses on applying the concepts and principles in the planning and design of urban thoroughfares—facilities commonly designated by the conventional functional classifications of arterials and collectors. Freeways, expressways and local streets are not covered in this report.
Integration of Safety in the Project Development Process and Beyond: A Context Sensitive Approach	ITE	http://library.ite.org/pub/e4edb88b-bafd-b6c9-6a19-22e98fedc8a9	This report conveys a common understanding of and approach to how substantive safety, or performance-based safety, should be integrated into project development and throughout the project life cycle.
Design Factors to Control Speeds: Fact Sheet #3	ITE	http://library.ite.org/pub/e1cfaec4-2354-d714-51ee-02d880c363a5	This fact sheet introduces engineering design professionals to the Institute of Transportation Engineers recommended practice (RP) Designing Walkable Urban Thoroughfares: A Context Sensitive Approach as a tool for designing urban streets that are compatible with and supportive of the surrounding context and community.
Flexibility in Highway Design	FHWA	https://www.fhwa.dot.gov/environment/publications/flexibility/flexibility.pdf	This Guide is about designing highways that incorporate community values and are safe, efficient, effective mechanisms for the movement of people and goods. It is written for highway engineers and project managers who want to learn more about the flexibility available to them when designing roads and illustrates successful approaches used in other highway projects. It can also be used by citizens who want to gain a better understanding of the highway design process.
FHWA's Revision of Thirteen Controlling Criteria for Design and Documentation of Design Exceptions	FHWA	https://www.gpo.gov/fdsys/pkg/FR-2016-05-05/pdf/2016-10299.pdf	The FHWA notice provides an update to its 1985 policy regarding controlling criteria for design, applicable to projects on the NHS, to reduce the number of controlling criteria from 13 to 10, and to apply only 2 of those criteria to low speed roadways.
Memo: Level of Service on the National Highway System	FHWA	https://www.fhwa.dot.gov/design/standards/160506.cfm	FHWA issued memo that outlines that FHWA does not have a minimum LOS standard for projects on the National Highway System.
United States Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations	FHWA	https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/policy_accom.cfm	FHWA issued policy statement that all transportation projects are to incorporate safe and convenient walking and bicycling facilities. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems.

Reference List

Title	Author/Organization	Location (link)	Description
The Best Complete Streets Policies of 2015	Smart Growth America and National Complete Streets Coalition	https://www.smartgrowthamerica.org/app/legacy/documents/best-cs-policies-of-2015.pdf	Provides guidance on best practices in developing and applying Complete Streets policies. The document also ranks the best complete streets policies passed in 2015.
Improving Decision-making for Sustainable Urban Transport: An Introduction to the DISTILLATE Research Programme	Anthony May, Institute for Transport Studies, University of Leeds, England	http://www.ejtir.tudelft.nl/issues/2009_03/pdf/2009_03_01.pdf	The series of papers in this special issue describe the research undertaken in an integrated research programme, DISTILLATE, which has developed a set of decision-support tools designed to help overcome these barriers. This paper outlines the context of the programme, which was conducted with sixteen local authority partners involved in the UK Local Transport Plan process.
Link' and 'Place': A New Approach to Street Planning and Design	Peter Jones, Centre for Transport Studies, UCL, London and Natalya Boujenko, Adelaide, SA	http://atrf.info/papers/2009/2009_Jones_Boujenko.pdf	The paper describes the development and application of a new approach to planning and designing urban streets, based on their „Link“ and „Place“ functions, which include transport performance, economy and environmental indicators. As a Link, a street is for movement and designed for users to pass through as quickly and conveniently as possible, in order to minimise travel time; while as a Place, the street is a destination in its own right, where people are encouraged to spend time taking part in activities. Both functions have their own sets of design requirements.
Funding Biking and Walking Improvements	Transportation and Growth Management Program	https://www.oregon.gov/LCD/TGM/docs/WalkBikeFund.pdf	This handout lists several options for funding transportation improvements specific to walking and biking.
Moving Beyond Prevailing Street Design Standards: Assessing Legal and Liability Barriers to More Efficient Street Design and Function	University of California, Berkley - The Center for Law, Energy, and the Environment at Berkley Law School	https://www.law.berkeley.edu/files/4.1_CREC_codes_and_standards.pdf	This white paper assess California and FHWA design standards and the challenges they place in the face of policy changes that support multimodal design and, in some cases, contradict with the design standards that prioritize automobile traffic.
ODOT's TGM Parking Management: A Powerful Tool to Meet Community Goals	Oregon DOT	https://www.oregon.gov/LCD/TGM/docs/parkingmanagement.pdf	This online resource summarizes the benefits of parking management and provides a list of resources for parking management.
ODOT's TGM Transportation Demand Management (TDM) Plans for Development	Oregon DOT	https://www.oregon.gov/LCD/TGM/docs/TDM%20guide%20and%20model%20code%20final.pdf	This guide contains background information about TDM, a step-by-step approach for local governments interested in implementing a TDM Plan program, and model code language compatible with the Model Development Code for Small Cities.
ODOT's TGM Cool Planning: A Handbook on Local Strategies to Slow Climate Change	Oregon DOT	https://www.oregon.gov/LCD/TGM/docs/cool_planning_handbook.pdf	This handbook is intended to help local governments and communities throughout Oregon understand how specific community development, land-use, and transportation planning techniques can enable us to reduce our carbon footprints. The desired outcomes of such planning often are
ODOT Highway Design Manual	Oregon DOT	https://www.oregon.gov/ODOT/HWY/ENGSERVICES/Pages/hwy_manual.aspx#2012_English_Manual	The 2012 Highway design Manual provides uniform standards and procedures for the Oregon Department of Transportation (ODOT). It is intended to provide guidance for the design of new construction, resurfacing, restoration and rehabilitation. The manual shall be utilized by all Department personnell for planning studies and project development.
Oregon Bicycle and Pedestrian Design Guide (Oregon Highway Design Manual - Appendix L)	Oregon DOT	ftp://ftp.odot.state.or.us/techserv/roadway/web_drawings/HDM/2011%20HDM%20Rewrite/2012%20Appendix%20L%20Bike%20Ped%20Design%20Guide.pdf	This document serves as supplemental guidance on pedestrian and bicycle facilities for the Oregon Highway Design Manual.

Reference List

Title	Author/Organization	Location (link)	Description
Metro's Creating Livable Streets: Street Design Guidelines for 2040	Oregon Metro	Hard copies available for purchase at: http://www.oregonmetro.gov/tools-partners/guides-and-tools/guide-safe-and-healthy-streets	One of the four guides developed to explain how to integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit and ensure the well being of wildlife. Last updated in 2002, these guidelines describe how communities can design streets to better serve walking, biking and transit while also preserving the region's mobility needs. Street design elements such as wide sidewalks, marked crosswalks, landscaped buffers, bikeways, on-street parking, street trees, pedestrian-scale lighting, bus shelters, benches and corner curb extensions provide an environment that is not only attractive, but can slow traffic speeds and encourage walking, bicycling and use of transit. The guidelines described in the handbook serve as tools for improving existing streets and designing new streets. They reflect the fact that streets perform many—and often conflicting—functions and there is a need to reconcile conflicts among travel modes. A section of the handbook provides guidance for making design tradeoffs to respond to changes in land use or when right of way is limited.
Metro's Green Streets: Innovative Solutions for Stormwater and Stream Crossings	Oregon Metro	Hard copies available for purchase at: http://www.oregonmetro.gov/tools-partners/guides-and-tools/guide-safe-and-healthy-streets	One of the four guides developed to explain how to integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit and ensure the well being of wildlife. Created in 2002, this handbook describes basic stormwater management strategies and illustrates “green” street designs with features such as street trees, landscaped swales and special paving materials that allow infiltration and limit stormwater runoff, helping protect stream habitats. The handbook also provides guidance on balancing the needs of protecting streams and wildlife corridors from urban impacts and providing access across those streams as part of good transportation design.
Metro's Tree's for Green Streets: An Illustrated Guide	Oregon Metro	Hard copies available for purchase at: http://www.oregonmetro.gov/tools-partners/guides-and-tools/guide-safe-and-healthy-streets	One of the four guides developed to explain how to integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit and ensure the well being of wildlife. This handbook describes the role of street trees in managing stormwater. Appropriate tree species are illustrated in the book, with a list of major characteristics. The street tree guide focuses on the Portland region, but tree suggestions apply to any West Coast temperate climate from Vancouver, B.C., to parts of Northern California. The handbook is intended for use in conjunction with the Creating Livable Streets and Green Streets handbooks.

Reference List

Title	Author/Organization	Location (link)	Description
Metro's Wildlife Crossings: Providing Safe Passage for Urban Wildlife	Oregon Metro	Hard copies available for purchase at: http://www.oregonmetro.gov/tools-partners/guides-and-tools/guide-safe-and-healthy-streets	One of the four guides developed to explain how to integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit and ensure the well being of wildlife. This was developed in 2009 and describes an approach to identifying wildlife inventory and linkages and mitigating the ecological effects of roads on wildlife populations through wildlife crossings. Examples and case studies are provided of planning activities, along with implemented wildlife overpasses, underpasses, culverts, and at-grade treatments.
Metro's Green Trails: Guidelines for Environmentally Friendly Trails	Oregon Metro	Hard copies available for purchase at: http://www.oregonmetro.gov/tools-partners/guides-and-tools/guide-safe-and-healthy-streets	One of the four guides developed to explain how to integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit and ensure the well being of wildlife. Developed in 2002, this handbook describes approaches to developing trails and paths that are friendly to the surrounding environment, keeping impacts on natural resources to a minimum. The focus is on trails in environmentally sensitive areas and recommends strategies for avoiding or limiting the impacts on wildlife, water quality and water quantity.
Metro's 2014 Regional Active Transportation Plan	Oregon Metro	http://www.oregonmetro.gov/sites/default/files/2014_regional_active_transportation_plan_0.pdf	This document provides region-specific guidance on active transportation. It provides guidance on policy, network planning, project development and design.
Portland Pedestrian Design Guide	City of Portland	https://www.portlandoregon.gov/transportation/article/84048	This document integrates a wide range of design criteria and practices into a coherent set of new standards and guidelines that, over time, will promote an environment conducive to walking.
Bikeway Facility Design: Survey of Best Practices (Appendix D to the Portland Bicycle Plan for 2030)	City of Portland	https://www.portlandoregon.gov/transportation/article/334689	This report documents an extensive review of best practices from world-class bicycling cities where the most innovative technology advances in designing for bicycle traffic have been proven effective. The purpose of the report is to create a guide for traffic engineers, designers and planners detailing tried-and-tested bicycle facility designs along with essential considerations for their implementation.
City of Portland's Environmental Services: Green Streets	City of Portland	https://www.portlandoregon.gov/bes/article/414873	This online resources provide guidance from the City of Portland's Environmental Services Office on green streets, planters, green infrastructure and starting a green street project.
City of Portland's Bureau of Transportation - Signals and Infrastructure	City of Portland	https://www.portlandoregon.gov/transportation/article/554938	This online resource provides design guidance on signals design and operations for pedestrians and bicyclist.

Reference List

Title	Author/Organization	Location (link)	Description
Metro's 2014 Regional Transportation Plan	Oregon Metro	http://www.oregonmetro.gov/sites/default/files/RTP-2014-final.PDF	Metro worked with state and local government partners, residents, community groups and businesses to develop this edition of the plan. It continues most of the policies, goals and objectives from the 2035 Regional Transportation Plan, which adopted an outcomes based approach that distinguished it from past RTPs. This update has strengthened and added more detail to the bicycling and walking policies to reflect direction from the Regional Safety Plan and the Regional Active Transportation Plan. There is an overall emphasis on desired outcomes and measurable performance.
Metro's Regional Functional Transportation Plan	Oregon Metro	http://www.oregonmetro.gov/regional-transportation-functional-plan	Part of the Metro Code, the Regional Transportation Functional Plan contains policies and guidelines to help local jurisdictions implement the policies in the Regional Transportation Plan and its modal plans, include those for active transportation, freight movement and high capacity transit.
Metro's 2010 Regional Freight Plan	Oregon Metro	http://www.oregonmetro.gov/regional-freight-plan	The Regional Freight Plan presents policies and strategies for moving freight that complement the region's multimodal transportation system and support regional land use goals.
Metro's 2012 Regional Transportation Safety Plan	Oregon Metro	http://www.oregonmetro.gov/regional-transportation-safety-plan	The Regional Transportation Safety Plan identifies ways to cut the number of fatalities and serious injuries for pedestrians, bicyclists and motor vehicle occupants in half by 2035, based on 2005 numbers. This is the goal outlined in the Regional Transportation Plan. Tailored to the Portland metropolitan area, the safety plan uses data and analysis collected in the State of Safety Report to create short- and long-term solutions. Solutions include drug/alcohol intervention programs, increased street lighting, car-slowing infrastructure and enforcement at crosswalks.
Metro's 2014 Climate Smart Strategy	Oregon Metro	http://www.oregonmetro.gov/climate-smart-strategy	The Climate Smart Strategy is a set of policies, strategies and near-term actions to guide how the region moves forward to integrate reducing greenhouse gas emissions with ongoing efforts to create the future we want for our region.
Metro's Regional transportation System (RTP) Component Maps	Oregon Metro	https://gis.oregonmetro.gov/rtp/	The Regional Transportation Plan (RTP) establishes policies for each component of the regional transportation system. The purpose of the system maps is to define the extent of the regional transportation system based on the function(s) an individual facility serves. The system maps represent the long range vision necessary to achieve the goals of the RTP.

Reference List

Title	Author/Organization	Location (link)	Description
Ammendments to the Transportation System Plan (City of Portland)	City of Portland	https://www.portlandoregon.gov/transportation/73296	Ammendments to the Portland TSP, which includes: Revised Street Design Classifications to incorporate Corridors and Greenways designated as part of the Comp Plan Urban Design Framework, Updated Performance Measures to reflect City Council adopted goals and targets, Expanded Transportation Demand Management (TDM) strategies for new development, and Incorporating adopted plans for Bicycle Classifications, Area Studies, and Master Street Plans



Metro

2018 REGIONAL TRANSPORTATION PLAN UPDATE

Designing Livable Streets

Transportation Design Technical Work Group
Meeting #1 – June 29, 2017

Welcome & introductions

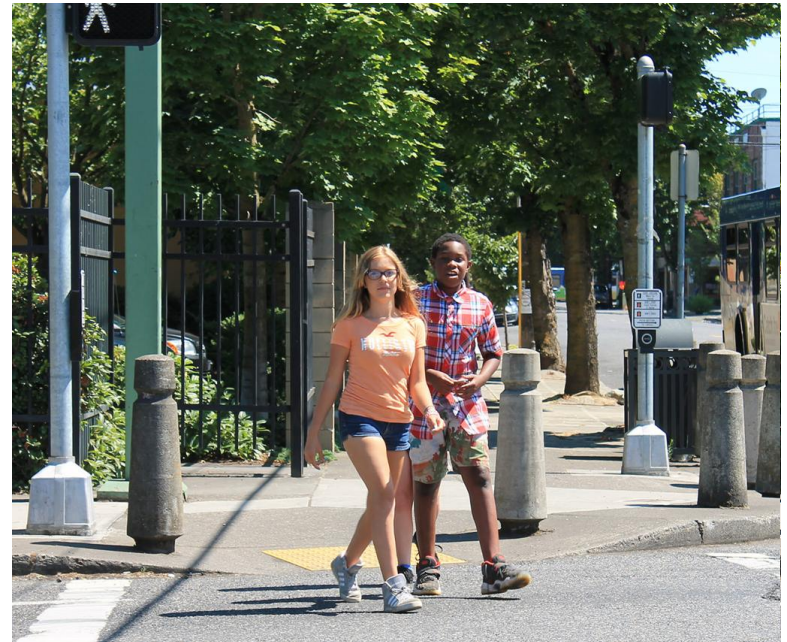
- Name & organization
- Favorite street or trail in the region and why
- Topic you would most like to see explored in a forum, workshop, panel, etc.



Avenue A, Lake Oswego

Meeting purpose and agenda

- Orient the work group members on the project and their role.
- Receive input from work group members on the major elements of the draft Table of Contents for the guide and the draft list of resources.



N Lombard, St. Johns Portland

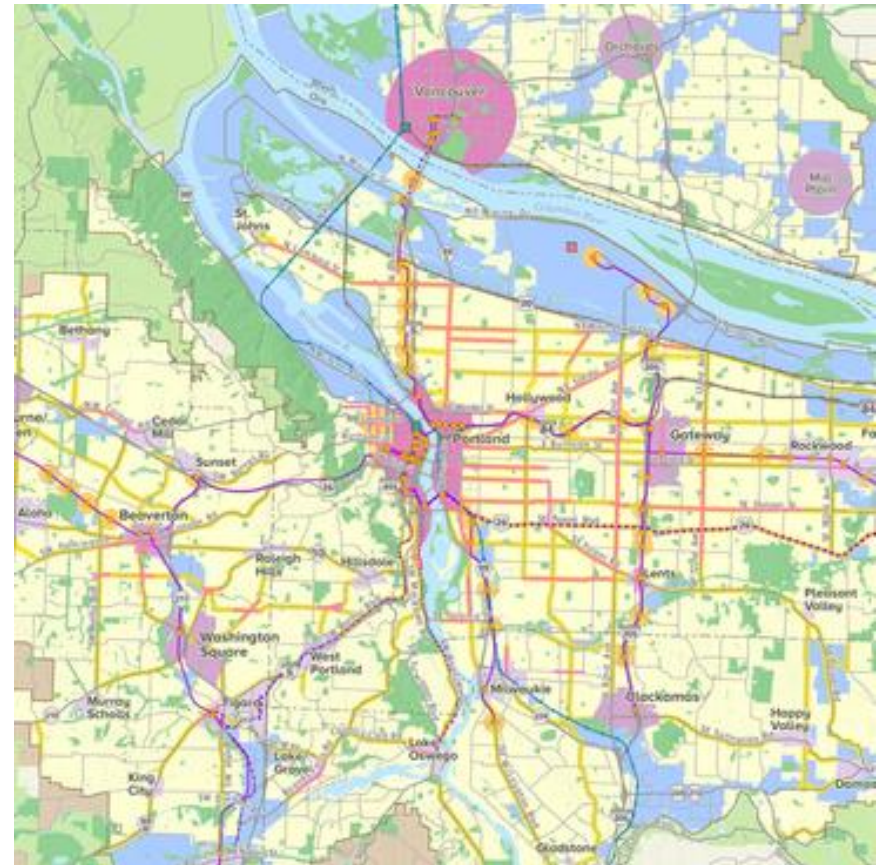
Project Overview



Main Street, Tigard

Project background

Transportation design guidance developed to implement the 2040 Growth Concept by linking land-use and transportation planning and providing design guidance for streets that was responsive to surrounding land uses



2040 Growth Concept

Design linked to RTP Goals

Best practices in transportation design help implement RTP Goals:

1. Foster vibrant communities and efficient urban form
2. Sustain economic competitiveness and prosperity
3. Expand transportation choices
4. Emphasize efficient management of the transportation system
5. Enhance safety and security
6. Promote environmental stewardship
7. Enhance public health
8. Demonstrate leadership on reducing greenhouse gas emissions
9. Ensure equity

Design in 2018 RTP

Transportation design in one of eight policy priority areas for the 2018 Regional Transportation Plan update



SE Division Street, Portland

Why an update is needed

- RTP framework has evolved – performance based planning
- New Freight, Active Transportation, and Safety plans and Climate Smart Strategy
- Relationship of livable streets to congestion, safety and mobility is better understood
- Street design has continued to evolve, especially for bikeway and intersection designs
- Lessons learned and new challenges

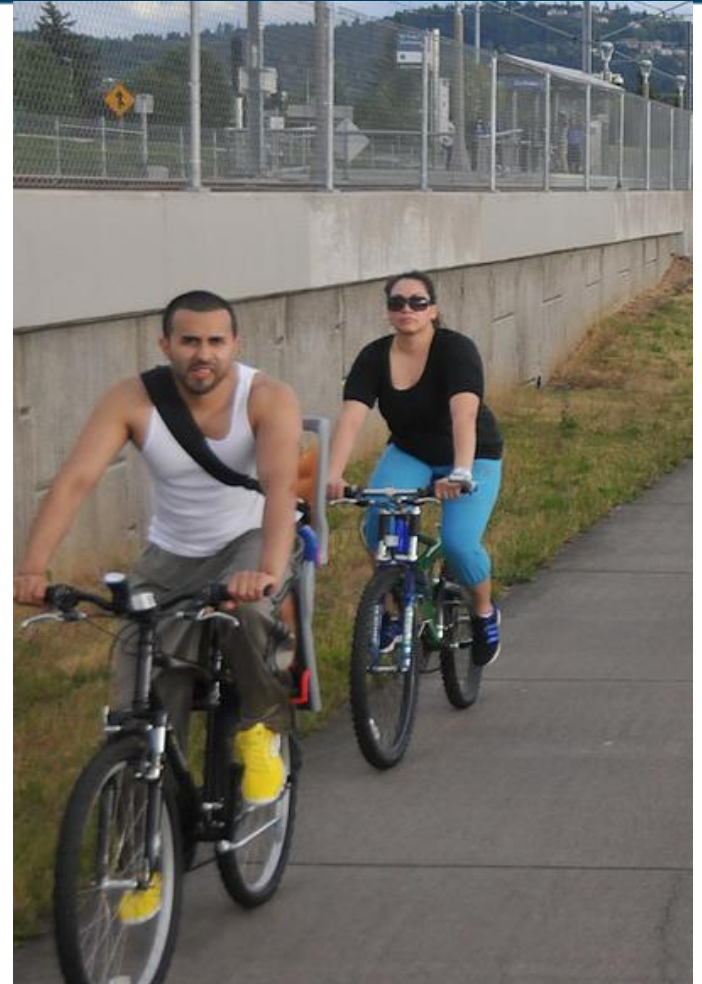
Why an update is needed

Lessons learned and new challenges

- Nature can be part of the street
- Recognition of regional trails and multi-use paths as an important part of transportation
- Stormwater management is the responsibility of transportation planners and engineers
- Design can help reduce speeds and prevent severe injury crashes
- Autonomous vehicles
- Rising use of e-shopping and door to door delivery of goods
- Rising severe crashes, pedestrian deaths
- Rapidly growing bicycle commute trips
- Growing diversity
- Growing aging population

Main project elements

- Update current regional street design guidelines
- Create design guidelines for regional trails
- Develop tools, best practices and other resources to support implementation
- Convene workshops, forums and tours to explore topics



I-205 MUP, Clackamas TC

Project objectives

- Address recommendations from freight, active transportation, and safety plans and climate strategy
- Increase knowledge and understanding
- Inspire and educate
- Reflect unique areas of the region and the needs of diverse and different communities
- Provide up-to-date, state of the practice transportation design guidance
- Support context sensitive design and best practices in transportation projects

Project timeline

- June 2015 to March 2017 – Interview Agencies, Scope Project
- April to December 2017 - Phase 1: Draft Outline, Determine Content and Policy Updates
- January to December 2018 - Phase 2: Develop and Finalize Guide and Resources

Project guidance

- Project Management Team – Metro, ODOT, Consultants
- Consultant Team: KAI, GreenWorks, Paste in Place, KLiK
- Technical Work Group: topical experts and community, business, city and county partners
- Metro internal review team: planning, engineering, urban design, nature, transit, freight, wildlife habitat, equity, communications
- Metro technical and policy advisory committees: TPAC, MTAC, MPAC, JPACT
- Metro Council

Work Group role

- Advise Metro staff and project management team, providing input and technical expertise
- Review guide as it develops and provide substantive comments
- Serve as a liaison to your community, organization, or agency and bring forward topics and issues
- Meet six to eight times between now and end of 2018

2018 Regional Transportation Plan

We've all got places to go. Metro works across the region to help people and goods get there safely, affordably and reliably.

- Overview
- Getting there
- Call for projects
- Design**
- Equity
- Finance
- Freight
- Performance
- Safety
- Transit



MEETING MATERIALS

Future meetings

Meeting materials are available in PDF format about one week in advance.

Jun 29, 2017

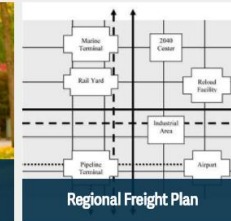
Sep 28, 2017

Nov 9, 2017

KEY DOCUMENTS



RELATED PAGES



Project webpage:

www.oregonmetro.gov/public-projects/2018-regional-transportation-plan/design

Draft TOC and resource list, project approach



Fanno Creek Trail, Beaverton – mid-block crossing

Metro Designing Livable Streets Guidelines *Project Approach*

Technical Work Group Meeting

Hermanus Steyn
Kittelson & Associates, Inc.
June 29, 2017



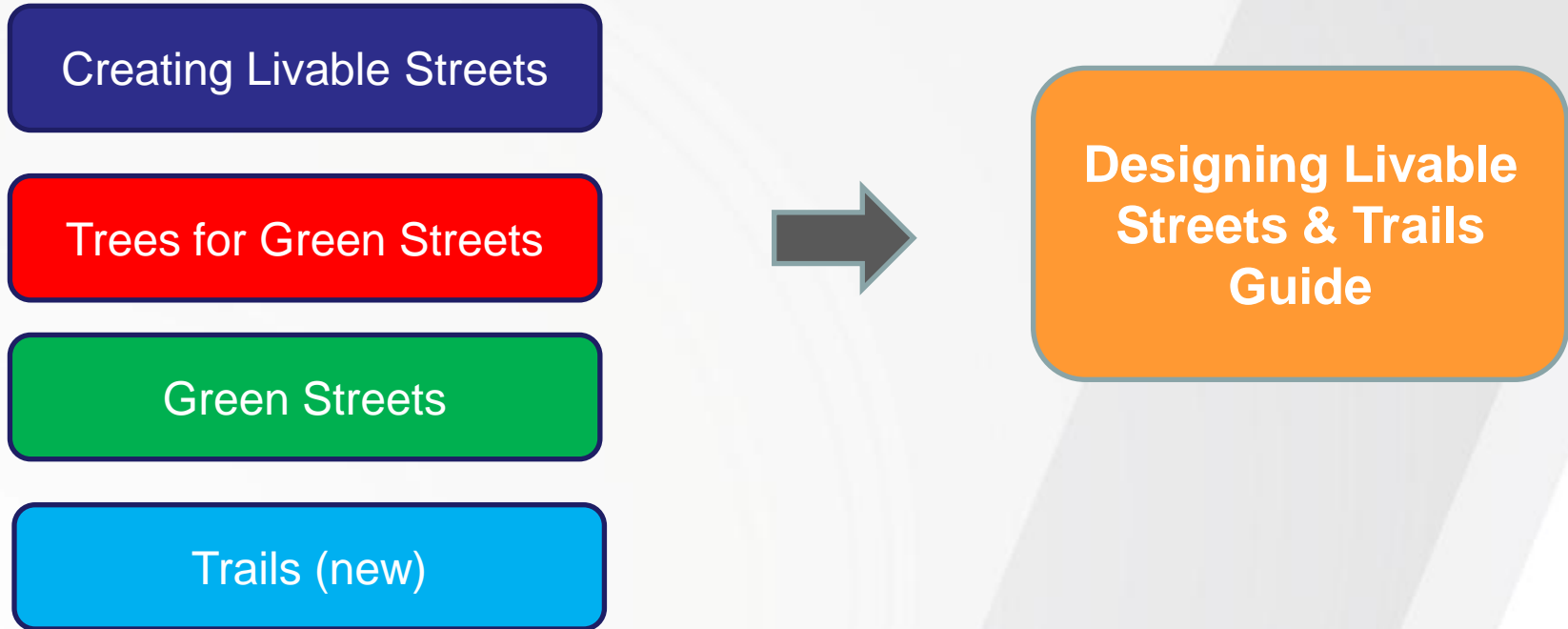
Project Approach

- Update the existing guides to reflect current design research, updated agency policies, and best practices for design.
- Combine existing Guides into one user-friendly Guide with additional online resources.
- Work collaboratively with Metro staff and Technical Work Group to gain input and feedback throughout each task.
- Establish an annotated outline upfront (Phase 1) to gain agreement on structure and initial content.



Project Approach

- Combine existing Guides and new Trails Guide into one user-friendly Guide with additional online resources.



Project Approach

- **Phase 1 – Develop Annotated Outline**
 - Table of Contents
 - List of Resources
 - Annotated Outline
 - Sample Page Layouts and Example Visualizations
- **Phase 2 – Develop Guide**
 - Guide Development



Project Approach

- **Phase 1 – Develop Annotated Outline**
 - Table of Contents
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 - Guide Development



Table of Contents

- Establish the guide framework prior to developing the Annotated Outline.
 - Chapter Organization
 - Primary Sections within Chapters

METRO DESIGNING LIVABLE STREETS & TRAILS GUIDE DRAFT TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

- 1.1 Purpose
 - Regional Land Use and Transportation Vision
 - Regional Transportation Plan (RTP) Goals
- 1.2 Who Will Use the Guide
- 1.3 How to Use the Guide
- 1.4 Summary

CHAPTER 2: DESIGN IN CONTEXT

- 2.1 Introduction
 - Street and Trail Design in Land Use Context
 - Lessons Learned and New Challenges
- 2.2 Regional Policy
 - 2040 Regional Land Use Types
 - Regional Modal Plans
 - Regional Transportation Functional Plan (RTFP)
 - Climate Smart Strategy
 - Vision Zero
 - Equity



List of Resources

- Spreadsheet Summary of Resources
 - Local, Regional, State, and National
 - Title, Organization, Location, Description
 - Integrated in the Guide Development

Reference List			
Title	Author/Organization	Location (link)	Description
Smart Transportation Guidebook: Planning and Designing Highways and Streets that Support Sustainable and Livable Communities	NJ DOT/ Penn DOT	http://www.state.nj.us/transportation/community/mobility/pdf/smarttransportationguidebook2008.pdf	Guidebook provides context sensitive planning and design roadways and transportation networks
Philadelphia Complete Streets Design Handbook	Philadelphia's Mayor's Office of Transportation and Utilities	http://www.philadelphistreets.com/images/uploads/resource_library/c/s-handbook.pdf	Guidebook on complete street's design guidance specific to City streets.
Complete Transportation Guidebook	Arizona DOT	https://www.azdot.gov/docs/default-source/planning/ctguidebook.pdf	The Complete Transportation Guidebook is a reference to integrating sustainable practices into transportation planning, scoping, and design throughout the Department of Transportation (ADOT) project development process.
FDOT Greenbook: Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways	Florida DOT	http://www.fdot.gov/roadway/FloridaGreenbook/FloridaGreenbook.pdf	Roadway design manual intended to "provide uniform minimum standards and criteria for the design, construction, and maintenance of all public streets, highways, bridges, sidewalks, curbs and curb ramps, crosswalks (where feasible), underpasses, and overpasses used by the public for vehicular and pedestrian traffic as directed by Sections 20.23(4)(a), 334.044(10)(a), 334.048(1)(a), and 334.048(1)(b), F.S."
			This Traditional Neighborhood Development Handbook (TNDH) supplement Chapter 19 Traditional Neighborhood Development



Annotated Outline

- Expands Table of Contents to provide information on the guide content, exhibits, and resources used.

CHAPTER 1: INTRODUCTION

1.1 Purpose

- Regional Land Use and Transportation Vision
- Regional Transportation Plan (RTP) Goals
 - *This will include an overview of the goals and reference the RTP for additional details.*
 - *The RTP, Chapter 2, Section 2.4 Regional System Definition will be used as a reference for developing this section.*

1.2 Who Will Use the Guide

- *This subsection will describe the audience the guide is intended for:*
 - *Planners, landscape architects, and engineers – for best practices*
 - *Public sector practitioners for best practices and project development guidance*
 - *Public-facing and lay-person friendly*

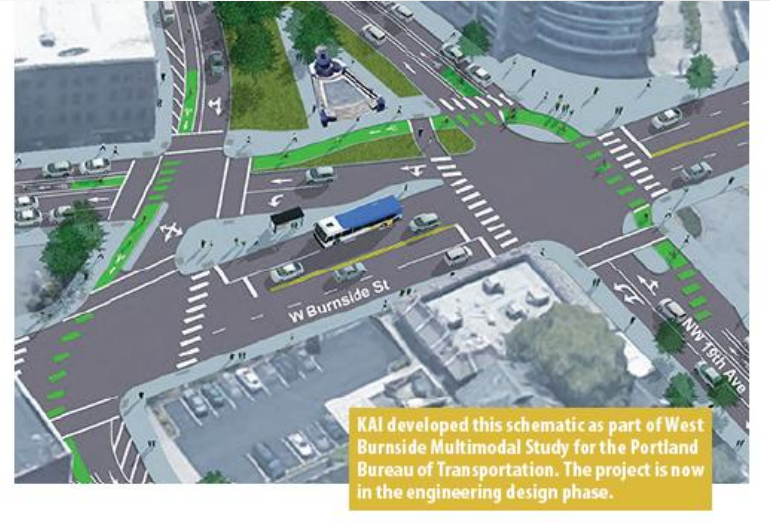
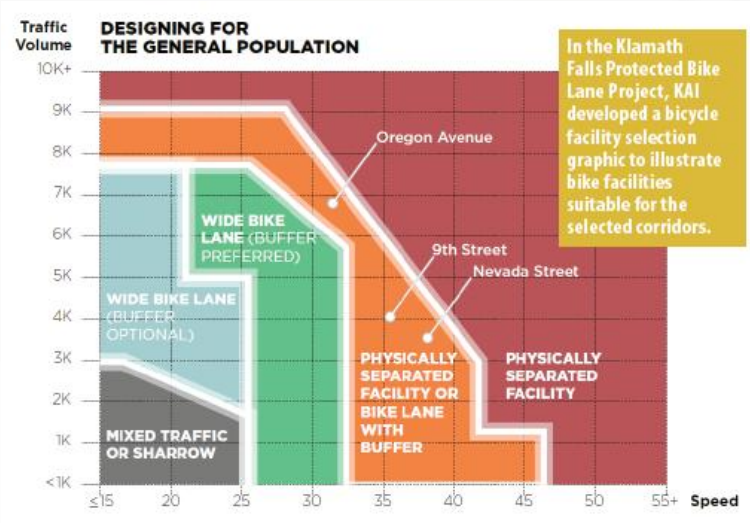
1.3 How to Use the Guide

- *The Regional Transportation Functional Plan (RTFP) will be referenced. This discussion will highlight that the RTFP has been adopted and is the regional implementation plan that jurisdictions follow.*
- *This subsection will describe that this Metro Guide is a tool for implementing the overall RTP.*



Sample Page Layouts and Examples

- Prepare example layouts and visualizations
 - Fonts, heading, margins, tables, exhibits
 - Design and Visualization Workshop
 - Example visualizations and schematics



Project Approach

- **Phase 1 – Develop Annotated Outline**
 - Table of Contents
 - List of Resources
 - Annotated Outline
 - Sample Page Layouts and Examples
- **Phase 2 – Develop Guide**
 - Guide Development



Next steps

- July 5 - provide any additional comments
- June 30 - Update to TPAC
- July 19 - Update to MTAC
- Sept 28 - Work Group Meeting #2 – Annotated Outline
- Nov 9 - Work Group Meeting #3 - Final Annotated Outline/Sample Visualizations
- 2018 - Phase 2 Begins

Thank you!



N Lombard and Ivanhoe, freight apron



Downtown Milwaukie

