Agenda

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Meeting:	**RTP Transportation Design Work Group Meeting #2**
Date:	Thursday, September 28, 2017
Time:	9 to 11 a.m.
Place:	Metro Regional Center, Council Chamber
Purpose:	Review Draft Annotated Outline for the Designing Livable Streets and Trails Guide
Outcome(s):	Input on Draft Annotated Outline

9 a.m.	**Welcome & Introductions** • Name and organization	Lake McTighe, Metro
9:15 a.m.	**Project Overview** • Project approach & timeline • Meeting purpose and agenda • Summary of June meeting • Input from TPAC and MTAC	Lake McTighe, Metro
9:30 a.m.	**Review Draft Annotated Outline** • Overview • Key sections for input	Karla Kingsley, KAI
10:50 a.m.	**Next steps** • Additional comments by Friday, Oct 6 • Nov 9 - Work Group meeting #3 • Nov 15 – update to MTAC • Nov 17- update to TPAC • Jan 2018 - Phase II begins	Lake McTighe, Metro
11 a.m.	**Adjourn**	

Meeting Packet	Next Meetings
• Agenda Mtg. #1 summary • Draft Annotated Outline	**Thursday, Nov. 9, 2017** 9 to 11 a.m. Metro, Council Chamber Final annotated outline, example chapter

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

KITTELSON & ASSOCIATES
610 SW ALDER STREET, SUITE 700
PORTLAND, OR 97205
P 503.228.5230 F 503.273.8169

The purpose of this memorandum is to provide a draft Annotated Outline combining the existing *Creating Livable Streets*, *Green Streets*, and *Trees for Green Streets* guides (Referred to herein as "Existing Metro Guide". This update is referred to as "New Metro Guide"). The content for the New Metro Guide will be a combination of existing material from the Existing Metro Guides (with reference to the *Green Trails and Wildlife Crossings guides)* and new information from current policies and best practices. This memorandum builds on the completed Table of Contents (TOC) – text shown in black – and provides a Draft Annotated Outline where the narrative in *blue italics* indicates specific information anticipated for each chapter and section based on discussion and themes from the project management team (PMT) and technical working group (TWG).

METRO DESIGNING LIVABLE STREETS & TRAILS GUIDE
DRAFT ANNOTATED OUTLINE

CHAPTER 1: INTRODUCTION

Comment [JK1]: 5%

1.1 Purpose

Comment [JK2]: 30%

- Making a Great Place
  - *Describes how land use, transportation, parks and natural areas, housing choice and affordability, etc. come together to create a great place.*
- Regional 2040 Growth Concept
  - *Overview of the concept and how transportation helps achieve it.*
- Regional Transportation Plan (RTP) Vision and Goals
  - *Overview of the goals and reference the Regional Transportation Plan for additional details.*
  - *The Regional Transportation Plan, 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

Comment [JK3]: 10%

- *This subsection will describe the audience the New Metro Guide is intended for and guide them to the areas that might be most useful:*
  - *Planners, landscape architects, and engineers – for best practices.*
  - *Public sector practitioners for best practices and project development guidance.*
  - *It will be public-facing and lay-person friendly.*
  - *Technical appendices (e.g., Trees for Green Streets) will provide more detail.*

1.3 How to Use the Guide

Comment [JK4]: 10%

- *This subsection will describe that this New Metro Guide is a tool for creating a great place and implementing the 2040 Growth Concept and the Regional Transportation Plan.*
- *Describe on-line resources.*
- *Reference the Regional Transportation Functional Plan (RTFP) and highlight that the RTFP is the regional implementation plan that jurisdictions follow.*

1.4 Chapter Highlights

- *Includes key features and "take-aways" presented in each chapter of the New Metro Guide.*
- *A graphic will illustrate how outcomes, design functions, design classifications and design elements relate to each other. The graphic will be used as a device to throughout the document to remind the reader of the flow/structure.*
- *This section introduces and defines the themes and structure of the following chapters by clearly communicating the following:*
  - ***Chapter 2:***
    - ***Desired Outcomes –*** *what are the things that make our region a great place?*
  - ***Chapter 3:***
    - ***Design Functions –*** *how do our transportation corridors contribute to the* ***outcomes?***
    - *Design Classifications – what* ***functions*** *are typically served by each regional classification?*
  - ***Chapter 4:***
    - ***Design Elements –*** *which* ***elements*** *serve the core* ***functions*** *for each type of travelway****?***
  - ***Chapter 5:***
    - *How can the elements be combined to create the different regional design classifications in different land use contexts?*
  - ***Chapter 6:***
    - *How do practitioners make design decisions using a performance-based design approach?*
  - ***Chapter 7:***
    - *What implementation strategies can help the region move towards the envisioned system?*

Notes: The project team anticipates Metro leading the development of this upfront content.

CHAPTER 2: DESIGN POLICY AND DESIRED OUTCOMES

Introduction

Chapter 2 will describe the "story" of the Existing Metro Guides and what has changed over the years. It includes some history, lessons learned, emerging trends, desired outcomes, policies to achieve those outcomes (performance-based design), as well as how the design policy relates to other regional, state, national, and local policies.

2.1 Street and Trail Design in a Land Use Context

This section puts this edition of the guidance (New Metro Guide) in a historical context, acknowledging that the core idea of linking land use context and design is one of the key original ideas of the Existing Metro Guides. It will articulate a design approach that takes a broad perspective of all users and desired outcomes, and connects the land use (existing and future) context and the function(s) of the street.

- Lessons Learned

  Describes what we as a region have learned since the 2040 Growth Strategy was adopted and the Existing Metro Guides were completed, along with many transportation projects.
  - *Street design is not "one size fits all"*
  - *Nature can be part of the street, and designs need to maintain wildlife corridor connectivity and remove barriers for wildlife*
  - *Regional trails are part of transportation system*
  - *Protecting water quality and stormwater management are responsibilities of transportation planners and engineers*
  - *Street design can reduce serious and fatal crashes*
  - *Economic impacts of livable street design*
- Emerging Trends

  Describes emerging trends that are influencing how we design streets:
  - *Population growth and demographic shifts (diversity and aging population)*
  - *Climate change and extreme weather events*
  - *Autonomous and driverless vehicles/connected vehicles, ride-hailing Lyft, Uber, etc.*
  - *Rising use of e-shopping and door-to-door delivery of goods*

Comment [JK5]: 8%

Comment [JK6]: 5%

Comment [JK7]: 20%

- *Rising severe crashes, especially for non-motorized users (pedestrians and bicyclists)*
- *Growing demand for Safe Routes to School, transportation options, trails, bicycle commute options*

2.2 Desired Outcomes: Designing for Today and the Future

Comment [JK8]: 35%

Desired Outcomes are the results we want to support (e.g. healthy people, sustainable economy) through street and trail design.

This section will clearly show how design functions relate to desired outcomes, e.g., the design function of providing space for physical activity is related to the design outcome of increased public health. Desired outcomes are overarching and will not be organized for each street and trail design type. Each bullet (in black text below) will be elaborated with a sentence, short paragraph, and/or references, but will not be an extensive discussion.

- Safety– Vision Zero
  - *Summarize that the Vision Zero's objective it to eliminate serious and fatal crashes.*
  - *Highlight that street design can contribute to the elimination of serious and fatal crashes, including slowing auto traffic speeds and providing more separation of modes, as well as discouraging undesired human behavior.*
- Transportation Choices
  - *More people have ability to choose to walk, bike, take transit, use rideshare safely and efficiently.*
- Efficient and Reliable Travel
  - *People can get to where they need to go efficiently and reliably by any mode.*
- Healthy People
  - *Through more opportunities for physical activity*
  - *Increased bicycle, pedestrian, and transit mode share*
  - *Lower asthma rates through reduced GHG*
- Security
  - *Personal security through "eyes on the street,"*
  - *Awareness of other users regardless of their mode choice.*
- Healthy Environment
  - *This would include a discussion of reducing environmental and/or natural resource impacts.*
  - *This would also include a discussion of how design may influence mode choice and the environmental impacts it may have by reducing single occupancy vehicles (SOV) trips.*

- *This will include a discussion on how management of the stormwater run-off in the street design benefits street users during rain and how sustainable stormwater solutions in the public right-of-way mitigates downstream water quality and flow control problems protecting urban natural resources.*
- *Mitigating urban heat island effect through strategic tree planting.*

- Reduced Green House Gas Emissions
- Sustainable Economic Prosperity
  - *Business benefits from walkable and bicycle-friendly areas*
  - *Freight access to industrial jobs and growth in export and import activity*
  - *Employees have transportation choices to access jobs*
  - *Tourism*
- Racial Equity – Equity for All
  - *Consider racial equity in transportation design process as a way to address equity for all vulnerable groups: lower income, low English proficiency, older adults, youth, people with disabilities*
  - *People empowered process*
  - *Looking carefully for unintended biases*
  - *Preventing displacement through gentrification*
  - *Streets are intuitive and easy to use regardless of age, ability, cultural background, language*
  - *Streets and trails are welcoming and safe and comfortable for all*
  - *Impacts and benefits of infrastructure are equitable*
- Vibrant Communities
  - *Efficient urban form (supported by transportation)*
  - *Quiet – noise mitigation*
  - *Traffic calming*
  - *Place-making*
  - *"Right-sizing" transportation facilities*
- Resiliency
  - *Resiliency during natural disasters, during extreme weather events and other major events*
- Fiscal Stewardship
  - *Speak to asset management, return on investment*

2.3 **Performance-Based Design**

This section is the KEY overarching design policy from Metro.

- *Describe the need for flexibility in design and context sensitive solutions through performance-based design*[1]
- *Federal Highway Administration (FHWA) and State Policies are supportive of design flexibility and establishing similar guidance. Describe the relationship between adopted standards and flexibility, and when diverging from standards is a smart choice.*

2.4 Regional Policy

Provides a succinct overview of the key regional policies and provide references to specific policy documents for additional details. Discusses how policies support innovative and flexible design, while also limiting what can and cannot be done.

- *Could be presented in a table.*
- 2040 Regional Land Use Types
- Regional Design and Functional Classifications
- Title 13
- Outcomes based planning - moving people
- Regional Modal Plans
- Regional Transportation Functional Plan (RTFP)
- Climate Smart Strategy
- Vision Zero
- Racial Equity

2.5 State Policy

- *This subsection will highlight State agency support of design flexibility through performance-based design. References to specific state policies will be included.*
- *Include discussion about Oregon Highway Plan, Policy 1B, which describes that transportation serves the land use.*
- *This will be coordinated with Oregon Department of Transportation (ODOT) as the Urban Design Initiative (UDI) progresses.*
- *Depending on timing, may note certain statewide policies and/or guidance that is under revision or is being updated.*

Comment [JK9]: 10%

Comment [LSM10]: Consider combining sections 2.4 – 2.7 into one Policy section.

Comment [JK11]: 5%

[1] ***Performance-Based Design*** *is an approach for understanding the desired outcomes of a project and selecting performance measures aligning with those outcomes. This approach provides a framework for practitioners to track design decisions, which can support practitioners in implementing flexible designs. This outcome-oriented framework helps identify the design elements that will achieve identified goals, e.g., increase bicycle/pedestrian mode share. Those elements that help achieve goals are used.*

- *Reference to the "Bicycle Bill" and State Land-Use and Transportation Goals, Transportation Planning Rule*
- *ODOT's policy code of building all regional trails 16 feet wide (12 with two 2-foot shoulders)*
- *Potential to include pull-out quotes from state legislators, Oregon Transportation Commission (OTC), or ODOT*

2.6 National Policy

Comment [JK12]: 5%

- *This subsection will highlight FHWA support of design flexibility that includes the direction of national guidance and evolution toward performance-based design compared to code-based design.*
- *It will note key legislation that impacts how streets are designed: National Highway System designations, Federal Clean Water Act, Title VI, Executive Order Environmental Justice, Americans with Disability Act (ADA), Architectural Barriers Act (limits what can be done on trails in parks)*
- *Potential to include pull-out quotes from transportation secretary or United States Department of Transportation (USDOT) officials*

2.7 Relationship to Local Policies

Comment [JK13]: 10%

- *This subsection will explain how local agencies should use Metro design guidance:*
  - *Local jurisdictions often take the new lead with innovative design (e.g., Portland bike boxes, Gresham stormwater) – their initiative in design makes it easier for other jurisdictions.*
  - *Create code language and design guidance to support implementation.*
  - *Following this design process and guidance is required for projects competing for Regional Flexible Funds Allocation (RFFA) funding.*
- *Potential to include pull-out quotes from Metro-area agency leaders.*

Notes: The project team anticipates Metro leading the development of specific sections in this chapter.

Comment [JK14]: 20%

CHAPTER 3: DESIGN FUNCTIONS AND CLASSIFICATIONS

Introduction

Chapter 3 will introduce and describe the functions of streets and trails, and how they relate to the desired outcomes in Chapter 2. It will then introduce the Regional Design Classifications (captured in the policy chapter of the Regional Transportation Plan) and which functions each should be designed to serve.

3.1 Design Functions

Comment [JK15]: 40%

Design Functions describe the universe of uses (e.g. physical activity, moving goods) that streets and trails can serve and thereby contribute to the desired outcomes.

- *This subsection will provide a brief description of design functions (~2-3 sentences each).*
- *Will include a matrix that connects the functions to the desired outcomes from the previous chapter.*
- *Discuss how Regional Mobility Corridors serve functions within the corridor, and that not all functions necessarily need to be served on one street. There are twenty-four overlapping Regional Mobility Corridors in the region. Each is several miles wide and long and encompasses many highways, streets and trails.*

- Pedestrian Access and Mobility: People walking and people using a mobility device
  - *Describe the importance of walking and walkability to the thriving places*
  - *Brief discussion of destinations where it is most critical to prioritize pedestrian access (transit, schools, etc.)*
- Bicycle Access and Mobility: People riding bicycles
  - *Brief discussion of destinations where it is most critical to prioritize bicycle access (transit, schools, etc.)*
- Transit Access and Mobility: People accessing and using transit
  - *Include various transit modes and brief discussion of the functions/destinations served by each. (light rail, bus, bus rapid transit, enhanced transit, frequent bus, paratransit, and standard bus).*
  - *This will include mention of potential for future driverless transit.*
- Truck Freight Access and Mobility: Moving Goods, deliveries, e-commerce
  - *Discussion of situations where it is critical to prioritize truck/freight.*
- Auto Access and Mobility: People driving, ridesharing, automated and driverless vehicles/connected vehicles
  - *Currently the most "complete" network – this function is constrained by congestion/delay, rather than completeness like the other modes.*
  - *Include discussion of need for safe spaces for rideshare drop-off and pick-up that do not impede the flow of other modes of traffic.*
  - *Will include discussion of autonomous vehicles/connected vehicles and how access considerations may differ for them. Later sections will note specific design considerations related to that type of vehicle.*
- Place-Making and Public Space
  - *Describe how streets/trails can be a place for recreation, civic life, public space, or a canvas for public art*

- *Public enjoyment of street trees and green street elements (such as rain gardens).*

- Corridors for Nature and Stormwater Management
  - *Sustainable stormwater solutions in the public right-of-way protects downstream water quality and flow control problems protecting urban natural resources.*
  - *Discussions of wildlife habitat and corridors, wildlife crossings, and crossing stream corridors.*
  - *Reducing urban heat through tree canopy, handling intense precipitation events*
- Utility Corridors
  - *Brief description of the need to design for power, water, communication, data, etc. infrastructure, and the benefits of coordination*
- Stationary Space
  - *Stationary space is a function that can correspond to each travel mode, and streets/trails may include this function for 1 or more modes:*
    - *auto parking (autos), storage of personal property;*
    - *ride hailing – pick-up and drop-off (autos)*
    - *loading zones (freight/trucks);*
    - *bicycle parking, bikeways behind transit stop (bicycle);*
    - *transit stops/stations (transit);*
    - *benches/seating (pedestrian)*
- Physical Activity
  - *Discussion of how streets/trails serve as a place for physical activity. Potential to move mention of "recreation" to this section instead of, or in addition to, in "Place-making and public space".*
- Emergency Response
  - *Describe the function of providing emergency access and the different needs of emergency vehicles.*
  - *Describes "Designated Emergency Routes"*
  - *Include discussion of "evacuation routes"*

3.2 Regional Functional and Design Classifications

Comment [JK16]: 50%

- *This section will briefly describe the modal networks and functional classifications in the policy chapter of the Regional Transportation Plan.*
- *Link to maps:* ***https://gis.oregonmetro.gov/rtp/***

- Arterial and Throughways Network and Functional Classifications
- Transit Network and Functional Classifications

- Freight Network and Functional Classifications
- Bicycle Network and Functional Classifications (includes Trails)
- Pedestrian Network and Functional Classifications (includes Trails)
  - *This section will provide a description of the regional design types assigned to Arterials and Throughways and shown on the Regional Design Classification map in the policy chapter of the Regional Transportation Plan. Not all streets, and no trails, identified on the bicycle and pedestrian modal networks will have a regional design type assigned to them. Bicycle and pedestrian elements, including regional trails within the right-of-way, are part of the design type description.*
  - *Link to Design Classification map:* ***https://gis.oregonmetro.gov/rtp/***
  - *Metro will work with agency partners and key stakeholder's to finalize the design classifications and update the Regional Design Classification map.*
  - *Design types are general by nature; in practice the ultimate design and function of Regional Boulevard's will be different based on context and desired outcomes.*
  - *This section will include a matrix that describes which functions should typically be served by which design types. (Potentially specifying primary, secondary, and "optional" functions.) For example: An Industrial Street's primary function may be freight access, with optional stationary space, while a Regional Boulevard's main function is multi-modal access and place-making, with optional freight access. It will point to Regional Mobility Corridors and the corridor approach to serve different functions within a corridor (e.g. Industrial Street with nearby regional trail).*
  - *This will review how adjacent land uses impact design classifications.*
  - *May acknowledge and/or draw on the functional classification system described in "National Cooperative Highway Research Program (NCHRP) 15-52: Developing a Context-Sensitive Functional Classification System for More Flexibility in Geometric Design" to note the national trends for functional classification.*

- Throughways: *propose to no longer separate into "freeways" and "highways." This design type is for grade separated, limited access facilities*
- Regional Boulevards: *propose to no longer distinguish between "regional" and "community" boulevards. This design type would be for major and minor arterials that serve as a "main street" and are typically located in centers and activity centers.*
- Regional Streets: *propose to no longer distinguish between "regional" and "community" streets. This design type would be for major and minor arterials that serve as commercial corridors and connect centers, employment, industrial areas and activity centers.*

- Industrial Streets: *propose to eliminate design classifications on roads outside of the Metropolitan Planning Area boundary. Propose to assign the "industrial streets" design classification to certain streets in industrial areas.*

CHAPTER 4: DESIGN ELEMENTS

Introduction

Chapter 4 includes the lowest-level (1000-foot view; most down-to-earth) content, discussing on-the-ground physical design elements and design considerations.

4.1 Performance-Based Design

- *Performance-based design is an approach to designing streets and trails that starts with the desired functions and outcomes of the project and then selects the design elements to support achieving those functions and outcomes performance based design is the key principle underlying the selection of elements and design of streets and trails.*
- *Communicates the importance of the interaction between design elements based on the context and the need to evaluate how different combinations may contribute to the overall performance of the street.*
- *Embraces the interaction of safety, operations and design together rather than focusing on design elements and their respective dimensions.*
- *Discusses balancing overall width with serving desired functions*

Comment [LSM17]: I think we need to provide definitions in the annotated outline in order for people to understand what is being proposed - not everyone understands this approach, or necessarily agrees with it.
- that way if someone does not agree they

4.2 Design Elements

Design Elements are engineering and design solutions (e.g. wide sidewalks, freight aprons) used to support the various functions (e.g. physical activity, goods movement) and desired outcomes of livable streets and trails (e.g. healthy people, sustainable economy).

Information in this subsection will be based on some of the information in the Existing Creating Livable Streets Guide (Chapter 3), the Existing Green Streets Guide, and the resources identified in the Resource List (e.g., Reference Designing for Truck Movements and other large vehicles in Portland (October 2008)), and will emphasize best practices (e.g. protected bikeways).

- *Intended to include design elements that support the desired outcomes and design functions described in Chapter 2 and 3, respectively.*
- *Each element will be covered in approximately 2-3 pages, and will include the following sections:*
  - *Basic description/definition*
  - *Functions – which does it serve? (The "benefits" of this design element)*

- *Design Guidance*
- *Design Considerations/Challenges (will replace much of the envisioned content from "Design Considerations in Context")*
- *Additional Resources*

- *Will not give prescriptive dimensions or detailed design guidance, but will provide ranges and brief guidance for selecting appropriate dimensions depending on context.*

Introduction: The Travelway Realm

- *Describe the on-street/travelway realm, curbside/transition/buffer/roadside realm, pedestrian realm, land use realm. Note that modal facilities may appear in more than one of these realms depending on the street and context. (e.g., bicycles and transit may have dedicated space in the travelway or in the curbside/transition/buffer realm – therefore each of these will have their own organizational section)*
- *Will include a graphic/illustration that shows the different realms.*
- *Intersections and Crossings (Nodes) are discussed in their own section.*
- *Trails are discussed in their own section*

Land Use Realm

- *This section will not include separate "elements" but will treat the land use realm as an "element" – since this guide is not focused on architectural design.*
- *Adjacent land-use (current and planned) guides transportation design.*
- *Brief discussion of building frontage impacts/relationship to key functions of the street; include references with more detail.*

Pedestrian Realm (Sidewalk)

This section will include elements that are primarily found in the pedestrian realm on the sidewalk side of the curb. Numbered entries are the "elements".

1. Frontage Zone of buildings and adjacent parking lots
   - Signage (businesses)
   - Sidewalk cafes, seating
2. Pedestrian Through Zone
   - ADA – Universal design
   - Range of widths for different land use contexts and street types
3. Street Furniture Zone
   - Street furniture
   - Utility vaults *(limits other pedestrian facilities that can be offered, interfere with other design elements)*
   - Transit stops and shelters (reference transit section)

Comment [KK18]: NOTE to TWG we're looking for your input on the org of this section – does it make sense? Other suggestions?

Comment [KK19]: Preferred terminology? Travelway? Street (leaves out trails)? Transportation Corridor?

- Lighting *(pedestrian-scale, wildlife sensitivity – dark skies)*
- Wayfinding
- Bikeshare stations
- Street trees

  - *Include seven roles of urban street trees (Street Design the Secret to Great Cities and Towns)*
  - *Climate resilient*
  - *Sidewalks around existing trees - species that would not damage sidewalk*
  - *Include Appendix with updated Green Trees Guide content.*

4. Street Corners
   - Curbextensions
   - Curb ramp design
   - Bus pullouts
5. Shared space
   - *Reference to trails section – in some cases this is an appropriate design for the pedestrian realm adjacent to streets and in street corners.*
6. Crossings
   - *Reference to midblock crossings and the interaction of pedestrians/bicycles using crossings and how it relates to the Pedestrian Realm adjacent to the travelway, as well as serving potential transit at crossings.*

Curbside/Transition/Buffer Realm

This section will include elements that are found in the on-street curbside area. This area has the most variation in different contexts and different streets. Additional mode-specific detail is found in the "bikeways" and "transitways" sections. Numbered entries are the "elements."

7. Stormwater Management
   - Green stormwater Infrastructure – planters, swales, basins
   - Pervious surfaces *(pavements, pavers – sidewalks, bikeways, islands, some streets)*
   - Manufactured technologies
   - Detention
   - Site conditions *(infiltration, slopes, utilities, contamination)*
   - Management goals (volume reduction, flow control, water quality) and approach (regional vs. distributed)
   - Maintenance

Comment [LSM20]: Pervious surfaces can be used throughout the street and on trails. Rather than keeping here, perhaps reference in the various sections – bikeways, trails, on-street travel lanes…

- *This subsection likely will reference an appendix with more content from the existing Green Streets Guide, including partnerships, operations and maintenance (O&M), performance measurement*

8. On-Street Parking
    - Diagonal (front and back-in)
    - Parallel
    - Publicly shared vehicle parking
    - Management strategies for flex-space
    - Loading and unloading zones
    - Pick-up / drop-offs
    - Electric vehicle charging
    - Bicycle corrals
    - Bike-share stations
    - Transit stops (reference transit section for further transit-related design)
9. Other buffer elements
    - Between pedestrians and travelway (bicycle or auto)
    - Between bicycle and auto
    - Street seats
    - Noise mitigation – sound walls

On-Street Realm

10. Motor-Vehicle Travel Lanes

    Include discussions on what types and general widths of facilities are needed depending on the context of vehicular activity (e.g. speeds, volumes, number of lanes, heavy vehicles). Numbered entries are the "elements".

    - Widths and attributes for:
        - Transit
        - Freight
        - Emergency vehicles
        - Autonomous/driverless vehicles/Connected Vehicles
            - *Outlines challenges and considerations, starting with list developed by Urbanism Next*
    - Turn-lanes
11. Medians
    - Landscaped or hard surface
12. Traffic Calming
    - Vertical Speed Controls
    - Horizontal Speed Controls

- *Include overall discussion that reducing speeds does not always mean the creation of congestion. Some discussion on how lower speeds does not always mean a significant increase in travel times (particularly over shorter distance trips).*

13. Access Management/Driveways
14. Shared Streets
    - Auto/bicycle shared lanes
    - Bus/bicycle lanes
    - All modes (woonerf-style)

Bikeway Design

This section will include elements related to on-street bikeways. Bikeway intersection design is covered under the Intersections section. Multi-use paths in the right-of-way are covered under the trails section. Numbered entries are the "elements".

15. Dedicated bicycle facilities
    - Protected or separated bikeways/cycletracks (consideration, driveways)
    - Buffered bicycle lanes
    - Standard bicycle lanes
    - Bicycle-specific Signing and Markings
        - Striping options
        - Bicycle boxes
        - Wayfinding
16. Shared spaces
    - Bus and Bikeway Interactions
    - Freight, bicycle, and pedestrian interactions
    - Mixing zones *(e.g., right turns and bicycles)*
    - Shared travel lanes
        - *greenways, bike boulevards, neighborhood bikeways, etc. – routes that are parallel to major streets*

Transitway Design

This section will include elements related to transit access and mobility. Numbered entries are the "elements".

17. Transit stops (show design in conjunction with bicycle facilities, shared and separate spaces)
18. Transit priority treatments
    - Lanes (Business Access & Transit (BAT), Pro-time transit, shoulder, etc.)
    - Queue jumps

Comment [HJS21]: From a legal perspective, and nationally, we have started referring to "separated", because some of the treatments do not necessarily provide protection – what terminology do we want to use regionally?

- Signal priority
- Enhanced transit treatments *(Portland developing toolkit)*

19. Transit in travelways
    - High Capacity Transit (HCT) bus
    - High Capacity Transit (HCT) rail
    - Streetcar
    - Center-running / side-running

Intersections and crossings (nodes)

This section will include elements related to intersections and crossings for all facility types and modes. Numbered entries are the "elements".

20. Midblock crossings
    - Pedestrian
    - Bicycle
    - Trail
    - Wildlife Crossings
        - *This section will primarily reference the existing Wildlife Crossings Guide (which will not be updated through the New Metro Guide process)*
21. Un-signalized intersections
    - Crosswalks
    - Bicycle crossings
    - Stop controls
    - Traffic diversion
    - Curb radii
22. Signalized intersections
    - Crosswalks
    - Bicycle crossings
    - Signalization considerations
    - Turn lanes
    - Conflict points - Multimodal Considerations at Complex Intersections
    - Curb radii / freight aprons
23. Roundabouts/mini-roundabouts (including mountable curbs for freight trucks)
24. Unique / Gateway / Transition Contexts
    - Raised intersections/treatments

Regional Trails and On-Street Multi-Use Paths

Comment [KK22]: Alternatively this could be located under design element 16. Shared spaces.

Comment [KK23]: This section – needs revision from Lake based on input regarding multi-use paths and nature trails. Are we only addressing transportation?

25. Different trail types

This section will describe the different trail types in different contexts.

- *Multi-use paths*
- *Multi-use paths in the right-of-way*
- *Multi-use paths in riparian corridors – Green Trails guidance*

26. Trail elements Widths for different contexts and levels of use

- Separating modal users – lane striping
- On-street connections and transitions between on- and off-street
- Access points and trail heads
- Bridges
- Crossings – mid-block, end block, intersections and driveways
- Lighting – when to light, types, wildlife sensitivity
- Personal safety - Crime Prevention Through Environmental Design
- Surfaces
- Railings, walls
- Wayfinding
- Amenities – seating, water fountains
- ADA and Architectural Barriers Act

4.3 Design Considerations Checklist

Section 4.3 is a checklist of design considerations that may influence design. These considerations are described in above sections, so this is a "summary" that will help practitioners easily identify the elements they need to consider. Some of these considerations have an influence on design even if they are not contributing to the core function of the street.

- How is emergency vehicle access provided? Is this an emergency vehicle route? Evacuation route?
- Is this street within ¼ mile of a school? (Safe Routes to School Access)
- Is this a transit route?
- Is this a Metro freight route? Is it an ODOT "Hole in the Air" route (i.e., ORS 366.215)?
- Is this an National Highway System (NHS) route?
  - *Reference the Guide for Integrating Goods and Services Movement by Commercial Vehicles in Smart Growth Environments.*
- Are there environmental constraints? (parks, wetlands, streams, sensitive wildlife habitat)
- Cultural or historical constraints or influences?
- What is the topography / Slope and structures? (Retaining Walls, Bridges)

- Do we need to design for automated and driverless vehicles/connected vehicles, emerging technologies?
- How would this street be impacted by extreme weather events? (heat, more rain, street trees, shade, shelter, pavement)
- What are the maintenance needs – above and underground?
  - *this can be a particular challenge in areas with low home-ownership (e.g., street trees, bioswales)*
- Traffic diversion (from street calming, bicycle boulevards, etc)
- What are the Public Input and Community Desires?
  - *may include perception of design strategies, such as "road diets" or trails*.
- Are there conflicting policies from different jurisdictions?
- Are there parallel routes to serve certain functions (e.g. parallel bicycle routes)?

Comment [JK24]: 12%

CHAPTER 5: VISUALIZING DESIGN CLASSIFICATIONS IN CONTEXT

Introduction

Chapter 5 will provide illustrative examples of what the design elements look like for the design classifications and in a variety of contexts (e.g., existing, constrained Regional Boulevard in a dense older neighborhood, new Regional Street in a new development). The examples will include several schematic drawings for each design type to illustrate that one size does not fit all and flexibility in design. Photos of existing streets and trails in the region (that people recognize!) and show different design elements on the various street types can also be used to illustrate how the design elements come together o create livable streets and trails.

- *This chapter will focus on "visualization" of the classifications through schematics and cross-sections. Photos may also be used to show existing examples.*
- *Visualizations and cross sections represent design classifications from Section 3.2 and include elements from Chapter 4: how treatments fit within the different contexts; including stormwater and trees treatments.*

Comment [LSM25]: TWG: examples provided below are for discussion purposes. Input from the work group needed.

Comment [KK26]: Potential to show some sample metrics about performance – TWG member was interested in person-through-put. How far should the New Metro Guide go in discussing metrics?

  - Throughways
    - *Below grade in urban area, four motor-vehicle travel lanes, bus rapid transit lanes, concrete divider, adjacent multi-use path with lighting, trees and green elements on embankments.*
    - *Below grade, six vehicle motor-travel lanes, concrete separator, adjacent light rail, trees and green elements on embankment.*
  - Regional Boulevards
    - *One to four story mixed use development, frequent transit corridor, bicycle and pedestrian parkway, four motor-vehicle travel lanes, transit priority lane,*

median with trees, turn lane, roundabout at intersection, adjacent multi-use path with two way bikeway and pedestrian zone.

- *Intersection with bicycle treatments, paving treatments, raised crosswalk, roundabout.*
- *Two to four story mixed use development, frequent transit corridor, bicycle and pedestrian parkway, freight route, four motor-vehicle travel lanes, separated two-way bikeway, planted buffer with bikeshare station and bio-swales, wide sidewalk.*
- *One to two story mixed use development and single family housing, frequent transit corridor, pedestrian parkway, two motor-vehicle travel lanes, median and turn lane, planted buffer with electric vehicle charging and bio-swales, wide sidewalk, bicycle boulevard one street over.*
- *One to four story mixed use development, frequent transit corridor, bicycle and pedestrian parkway, freight route, four motor-vehicle travel lanes, median with trees, turn lane, separated bikeways, wide sidewalk with transit stations, regional trail one street over.*

- Regional Streets
  - *Commercial development, big box, mixed use at intersections, frequent transit, freight route, bicycle and pedestrian parkway. Four motor-vehicle travel lanes, transit priority lanes, median, turn lane, wide sidewalk with transit stations, bicycle boulevard one street over.*
  - *Commercial development, big box, frequent transit, freight route, bicycle and pedestrian parkway. Two motor-vehicle travel lanes, transit priority lanes, buffered bikeway, planted buffer with bikeshare station and bio-swales, wide sidewalk, freight aprons at curb*
  - *Commercial development, big box, mixed use at intersections, frequent transit, and pedestrian parkway. Two motor-vehicle travel lanes, median and turn lane, planted buffer with electric vehicle charging and bio-swales, wide sidewalk.*
- Industrial Streets
  - *Industrial development, large lots. Four motor-vehicle travel lanes, wider streets, wider turning radii at intersections and driveways, adjacent multi-use path separated from street by planted buffer.*
  - *Intersection with freight apron, mountable curbs.*

Comment [JK27]: 18%

CHAPTER 6: DECISION-MAKING IN CONTEXT

Introduction

Chapter 6 is intended to provide practitioners with a framework to guide decision-making. Ultimately, the decision-making guidance in this chapter will need to be flexible enough that a variety of jurisdictions can use it to make decisions, and also use it to explain their decision-making process to other agency stakeholders, members of the public, elected officials, etc.

- *Will emphasize consistency with previous chapters – policies focus on **desired outcomes** (6.1), and the performance-based design process (6.2) is based on serving design **functions** by combining design **elements.***

6.1 **Policy Guides Decision-Making**

- Policy Guidance
  - *Policies and desired outcomes should guide transportation design*
  - *Restate Metro's overarching policy from Chapter 2, Section 2.4 – performance-based design.*
- Focus on Desired Outcome
  - *Emphasize that desired outcomes and functions must be clearly determined prior to embarking on design.*
  - *Also acknowledge that streets and trails are not developed in a "perfect world". Funding constraints, competing policy objectives, existing infrastructure and traditional approaches to designing streets are part of the reality in which street designs are developed.*

Comment [JK28]: 15%

6.2 **Performance-Based Design: Decision-Making**

This subsection will outline a decision-making process or flow-chart for travelway design, drawing on NCHRP 785: Performance-Based Analysis of Geometric Design of Highways and Streets.[2] The process/flow will draw on content from earlier chapters in this New Metro Guide, with practitioners guided through a series of questions (the following questions are examples/possibilities).

Comment [JK29]: 50%

- Developing Complete Networks to Serve the Design Functions
  - *What is the land use context and regional (or local) classification of the travelway?*
  - *For which networks is this travelway critical? For which networks are there alternate/parallel routes that can serve?*
    - *Walking?*
    - *Biking?*

[2] *Reference NCHRP Report 785, Performance-Based Analysis of Geometric Design of Highways and Streets, as well as direction from Federal Highway Administration (FHWA) encouraging states to implement performance-based practical design to address system performance, mobility, and safety needs in the current era of financial limitations.*

        - *Driving?*
        - *Driverless vehicles?*
        - *Transit?*
        - *Freight?*
        - *Nature/habitat corridors?*
            - *This subsection will highlight how function and modal priorities can be evaluated in the context of the greater transportation network. This is intended to help practitioners decide when trade-offs can be made given the nature and presence of parallel routes.*
            - *Safety considerations will be included in this section. If the project team states that a street is going to serve a particular mode, then it should include safety-related design treatments for that particular mode.*
    - Defining Priorities and Needed Functions for Each Travelway
        - *What design functions must be included or improved to further the desired outcome?*
            - *And/or: What design functions must be maintained…?*
            - *And/or: What design functions are not carrying us towards the desired outcome?*
            - *Potentially specify primary, secondary, and "optional" functions.*
        - *What metrics will be used to evaluate the function of existing (if applicable) and future design options?*
    - Flexibility in Design – Combining Elements
        - *Based on answers to above and guidance outlined within the design elements, what design elements or design solutions should be considered (develop alternatives)?*
        - *How well do the design elements serve the desired functions?*
        - *How do these alternatives compare to the available right-of-way (ROW)? (Are you designing for a travelway that has the opportunity to obtain more ROW, or is it constrained to the existing ROW?)*
            - *This subsection would provide guidance (e.g., range of dimensions) for different travelway design types.*
        - *What are the key design controls and influences? (speeds, sight distance)*
    - Data to support decision making
        - *Include discussion of typical data that would be available or that can be collected to support decision-making and evaluate the impacts of the selected design (before/after implementation).*

- Evaluating Trade-offs
  - *If right-of-way is constrained, insert series of questions/process that will help identify trade-offs to guide the practitioner, e.g.:*
    - *Can an alternate/parallel route within this corridor serve one or more of the desired functions?*
    - *Can widths of particular design elements be minimized without sacrificing the function? (and/or is more research needed to determine appropriate widths?)*
    - *Is there an existing function that can be removed from this travelway, keeping in mind the desired outcomes?*
    - *Can the travelway space be allocated in different ways depending on time of day?*
    - *Can a particular mode be de-emphasized?*

Comment [JK30]: 17%

CHAPTER 7: IMPLEMENTATION STRATEGIES AND EXAMPLES

Introduction *This chapter will consider implementation strategies illustrated with actual implemented projects to describe the project development and how the design comes together following the decision-making process in Chapter 6. This chapter will rely heavily on case studies, which will cover a range of topics and projects, aiming to show a variety of themes that different agencies can relate to. Each case study will be 1-2 pages and will include images and potential diagrams as well as explanatory text. Case studies will be either completed, or based on potential redesigns of existing streets.*

7.1 New Streets and Trails

- *Discussion of balancing overall width with serving desired functions. Note that the maximum width for new streets/trails is not necessarily the optimal even if it serves the most functions, due to impacts on the surrounding land uses and the potential for it to be a barrier.*
- *Include case study of new street that is successful at this.*
- *Trail case study: South waterfront example of separating bicycles and pedestrians into two facilities. Good design for the context, but not appropriate for all regional trails. The point is that one size does NOT fit all.*

7.2 Retrofit / Redesigns

- Temporary/Pilot Implementation
  - Moving the curb with paint
  - Parklets
  - Temporary street closures
  - Interim public plazas

Comment [KK31]: 15%

- *Include a case study illustrating these methods.*
- *Discuss who needs to be involved, what type of code allows these, what potential barriers to consider.*

- Low-cost
  - *Will discuss low-cost strategies for improving outcomes in the near-term. Include discussion of:*
    - *Metro policy on constructing active transportation facilities – fill gaps first*
    - *Low-cost does not need to mean low-quality*
    - *Outline different examples of low-cost changes and discuss how they change the function of the travelway.*
    - *How might a low-cost/near-term implementation impact the potential for a larger project in the future?*
  - *Discuss strategies that leverage routine repaving and maintenance to make improvements.*
  - *Include a case-study of a project that has been implemented with re-striping / paint only.*
- Incremental change (e.g. lot-by-lot through development)
  - *Discussion of factors that influence whether incremental change is feasible (e.g., street frontage improvements)*
  - *What types of design elements provide benefit when they are constructed incrementally (e.g. sidewalks)*
  - *Discussion of best practices for timing of construction*
  - *Include a case-study of a street that has gone through incremental change over time, with each parcel redeveloping, or dedicating ROW. (?)*

Comment [KK32]: 20%

7.3 **Intersection Project**

7.4 **Evaluation: Before and After Implementation**

- *Discuss the importance of documenting before and after metrics. Evaluation should be included in all implementation.*
- *Include summary of relevant performance measures and include references with more detail.*
  - *Include a matrix of project-level performance measures that align with the RTP system performance measures (though they will not be the same measures in most cases.)*

Comment [KK33]: Need input from TWG on the importance / level of detail in this section, and where it best fits. The design guides will not be able to go into depth on metrics and data collection.

Meeting minutes

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

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 and Resource List

Work Group Attendees	**Affiliate**
Joseph Auth	Oregon Department of Transportation
Scott Batson	City of Portland
Richard Blackmun	City of Forest Grove
John Boren	City of Hillsboro
Anthony Buczek	Metro
Mary Coolidge	Audubon Society of Portland
Rich Crossler-Laird	Oregon Department of Transportation
Kathryn Doherty-Chapman	Oregon Walks
Roger Geller [sub for Igarta]	City of Portland
Brendon Haggerty	Multnomah County Public Health
Julia Hajduk	City of Sherwood
Ryan Guy Hashagen	Better Blocks PDX
Scott Hoelscher	Clackamas County
Tim Kurtz	City of Portland
Nico Larco	Sustainable Cities Initiative, U. of Oregon
Stephanie Noll	The Street Trust
Jeff Owen	TriMet
Stacy Revay	City of Beaverton
Jeannine Rustad	Tualatin Hills Parks and Recreation Dept.
Rob Saxton	Washington County
Chris Strong	City of Gresham
MyKaela Thoma	Multnomah County
Zef Wagner	City of Portland
Zach Weigel	City of Wilsonville

Interested Parties Attendees	**Affiliate**
Eileen Cunningham	Multnomah County
Marie Miller	Metro
Luke Norman	Clackamas Community College
Susan Peithman	Oregon Department of Transportation

Staff Attendees	
Lake McTighe	Metro – Work Group Lead
Tom Kloster	Metro
Rebecca Hamilton	Metro
Nicholas Simmons	Metro

Hermanus Steyn	Kittelson and Associates, Inc.
Lidwien Rahman	Oregon Department of Transportation

Unable to Attend	**Affiliate**
Robert Galati	City of Sherwood
Mike Houck	Urban Greenspaces Institute
Rick Nys	Clackamas County
James Reitz	City of Forest Grove
Allan Schmidt	Portland Parks and Recreation
Robert Spurlock	Metro
Dyami Valentine	Washington County

Action items

- ✓ Address comments for the updated Table of Contents (TOC) and Annotated Outline, as well as expanded Resource List
- ✓ Seek input from staff working in maintenance
- ✓ Develop workshop and forum topics
- ✓ Send out Annotated Outline ahead of next work group meeting (which is on September 28th)

Welcome & introductions

Work group members and interested parties listed their favorite street or trail in the region:

- A Avenue, Lake Oswego (x3)
- Multnomah Blvd cycletrack, Portland
- Trolley Trail, Clackamas County
- Burnside Street, Portland
- Mt. Talbert Trails
- Tom McCall Waterfront Park MUP (x2)
- Tualatin River Trail
- Tualatin Hills Nature Park Trail
- Banks-Vernonia State Trail
- Tillamook Neighborhood Greenway to Steel Bridge Bicycle-Ped Path
- Neighborhood Greenways - Ladd, Lincoln, Harrison
- Ice Age Tonquin Trail
- Tilikum Crossing
- Powell Butte Trails

- Lincoln and Harrison Neighborhood Greenway
- Alameda and pedestrian staircases
- Springwater Corridor – Hogan to Boring section
- SE 49th between Hawthorne and Harrison
- Separated bikeway on 154th Terrace
- Council Creek Trail (when it is built!)
- Pedestrian Bridge in Salem
- Wild Wood Trail (x2)
- Columbia Slough Trail
- NE Couch Court
- N Lombard (what it could be on day)
- Beaverton Creek Trail
- Historic Columbia River Trail (x2)
- 17th Avenue Path
- Fanno Creek Trail (x2)
- 32nd Avenue Neighborhood Greenway

Work group members identified topics they would like to see addressed in workshops, forums, panels, etc:

- Different options for constrained right-of-way (ROW), specifically on higher classification roads (x4)
- Maintenance, especially for new/different designs (e.g. protected bikeways)
- Accessibility for people with disabilities
- Stormwater
- Financing, creative financing, bundling projects for finance packages (x3)
- Iterative design, pilot projects (examples in Calgary, Vancouver)
- Freight mobility
- How automated vehicles and e-commerce could impact how streets function
- Lighting and balancing environmental considerations (habitat, carbon emissions, costs) (x2)
- Roundabouts, mini-roundabouts (x3)
- Protected bicycle lanes, better bicycle facilities in high traffic/constrained areas (x3)
- Car-free streets/spaces (temporary or permanent), mixing zones
- Shared space between bicycle and pedestrian (mixing zones)
- Opportunities for separating modes (particularly freight from walking and biking)

- Pedestrian safety – walking audit
- Safe trail design, especially intersections/mid-block crossings (interested in walk along or bicycle on some of Clackamas trails so people can see the intersections)
- Future congestion in the region if we do not hit our targets (what does it entail for travel and freight) – role of street design
- Wildlife crossings
- Low income communities and people of color have safe and comfortable access to natural spaces and transit
- Trails as transportation, on-street connections (Beaverton Creek Trail), lighting and gaps, lighting in relation to safety on regional trails and access ways
- Protected crossings across arterials
- Transit priority treatments – what is and is not working, connections to transit

Project overview

Tom Kloster provided historical context and background of why and how the original design guidelines developed.

- 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
- Our focus has been part of a national movement to link street design and land use
- Guidance applies to regional system – regional streets and trails – not local
- First regional design guidance developed in the 1990s
- Current guidelines last updated in 2002
- Currently five handbooks
- Cities and counties must allow implementation of guidance
- Transportation projects funded with Regional Flexible Funds s must use guidance

Tom noted that we will also be addressing topics that come up through other areas of the 2018 Regional Transportation Plan (RTP) update.

Lake McTighe provided an overview of the project including

- How the work group will help inform how we talk about design in the regional transportation plan
- Explanation of why an update is needed
- Want to increase knowledge of street design; want public to have access/understanding

Draft Table of Contents and Resource List

Hermanus Steyn, of Kittelson and Associates Inc., provided an overview of the approach to the project, the draft Table of Contents and the draft resource list. Work group members provided input on the Draft TOC and the resource list. *The meeting summary includes comments from work group members provided via email after the meeting.*

Hermanus noted that the "more feedback we get, the better the outcome will be" and that the project approach is designed to get agreement on what to include before moving forward. Hermanus walked through each of the chapters and provided an overview.

General

- Chapter flow. Chapter 2 seems to look at broad policy issues, chapter 3 at groupings, or classes of corridors, chapter 4 seems to get into the puzzle pieces, then chapter 5 seems to back up into a broader topic of decision making. Also, chapter 5 seems to literally place decision making after the design elements, when it seems that the process for deciding should go before the deciding.

  Chapters and Sections have been reorganized. Changes are noted in track changes and referenced here.

  - **Design Outcomes Section was moved from Ch 3 to Ch 2**

- Chapter 3 and chapter 6 seem to be about similar topics.

  They are. Chapter 3 (now Ch 4) introduces the different design classifications and Chapter 6 gives examples, through cross-sections and schematics of what different combinations of the elements in each of the design classifications could look like.

- In chapter 3 and 6 there appear to be decision points about what to call things, Urban v. Industrial, etc. How would 'urban' be addressed? In 'Main Streets'?

  We have an opportunity to clean up the design classifications that are in the current design guidelines and on the RTP Design Classification Map. The work group will have an opportunity to weigh in on the changes. All streets, other than those with the design classification "Rural Road" would be considered urban. Metro used to have an "Industrial Road" design classification for some freight oriented roads. We may replace "Urban Roads" with Industrial Roads for clarity.

- I did not see where Safe Routes to School was explicitly discussed. Will this be referenced in any way? Ties to Federal programs, or State funding focus areas would be helpful for smaller jurisdictions.

  Added to Sec 5.4 Design Considerations (along with emergency vehicle access, freight access and transit access)

- Address access to schools (Safe Routes to School), transit and prioritizing street design to serve those purposes

  The need to design streets for access to schools and transit (nearly every part of the region is within a mile of transit and/or a school) will be discussed in Chapter 4 Design Functions (what was ch 3) under pedestrian and bicycle access, it will also be touched on in the descriptions of the design street and trail classifications. A safety and Vision Zero design lens will be applied to the whole design guidelines.

- Even if something is not a problem today, we should think about if it may be and anticipate designs to address – e.g., access, automated/connected vehicles

  Added a section in Ch 2 to design for today and the future

- Autonomous/ automated/ self-driving/ driverless vehicles and e-commerce need to be included – looked at

  Included in Chapter 2 under policy, in Ch 4 under Design functions, design considerations

- Include discussion of single occupancy vehicle (SOV) congestion – biggest challenge to freight

  Will be part of the policy discussion in Ch 2 – the need to design streets for multiple options as a strategy to reduce congestion

- Throughout guide hit on the need to look at policies when evaluation trade-offs – guided by policies

  This will be emphasized in the decision making chapter, and in Ch 2 – policy and context guide design

- Designs that adapt to climate change impacts – hotter weather, more rain, street trees, shade, etc.

  Climate change will be discussed in Ch 2 under policy, under design considerations, and in design elements

- This update is a great opportunity to encourage jurisdictions to adapt our streets to climate change through the design choices we make. Some of the issues I could envision addressing include: planting climate-resilient tree species, designing for intense precipitation events, reducing urban heat through tree canopy, transit shelters, and cool pavements.

These types of treatments are captured in the design elements section - now Ch 5.

- There should be some input from maintenance folks. Considerations for protected bicycle lanes. How do cities finance new equipment needed for that?

  Maintenance added as a design consideration

- Something used a lot in the past guide were the places that monetize the value of different investments/features (street trees, stormwater) are useful when discussing with people – would be good to update, include bikeways, transit

  We will try to include this in a way that won't be outdated quickly. We added Fiscal Stewardship as an outcome under "design outcomes" in Ch 2.

- Issue of context sensitivity was important for Multnomah County, should be considered here as well.

  Context sensitivity will be a theme throughout

- Consider an approach to prioritize modes in design, similar to National Association of City Transportation Officials (NACTO) design guide – look at National Cooperative Highway Research Program (NCHRP) Project 15-52 (prioritize modes Matrix)

  We will address this in the Decision Making section with guidance on how/when to prioritize modes

Chapter 2 Design in Context (now Design Policy)

- Consider changing title to "Design Policy" Chapter 2, 3, and 4, all refer to design in their titles, so more distinction would be helpful to users.

  YES

- Reducing long distance satellite commutes should be addressed

  This is addressed through land use – jobs, services and housing in proximity – which is captured in the big picture framing in ch 2

Chapter 3 Regional Street and Trail Design Types (Now Design Classifications)

- Section 3.4– Economic Vitality – is 'Vitality' a new catch-word? Sustainability seems more familiar, while activity seems easier to understand. Ever increasing economic activity, and the expectation of it, do not seem sustainable to me.

  We'll replace with something else. Economic Prosperity is the term used in Metro's adopted Six Desired Outcomes. RTP Goal 6 uses Economic Competitiveness and Prosperity. I like sustainability too.

- Section 3.3 - 'Curb side zone' seems imprecise. I gathered it means the road side of the curb, not the sidewalk side of the curb, but I had to read other text to figure it out.

  In lieu of a better term we'll leave as is, for now, but will

- Section 3.3 Design Functions: Functions by Street and Trail Design Type: At the meeting, someone mentioned creating a mode priority system. I express caution on considering a priority system on mode by type of corridor. I am nervous establishing a priority system may overlook the system needs (e.g. If bicycles exceed pedestrians on the priority list for treatment on the corridor that has more pedestrians than bicycles, we may end up with narrow sidewalks not fulfilling the need for wider ped space). Every corridor is unique within its own challenges. Our goal as engineers is to find the safe balance of competing transportation modes and land uses while designing a facility that can be constructed and maintained properly. I am okay with the document 'emphasizing' a mode for consideration instead of using the term 'priority.'

  My understanding of this comment was not to prioritize some streets for certain modes, e.g. a transit street, but to utilize what is commonly referred to as a "Green Hierarchy" and use street design to implement this policy. The RTP does not a specific green hierarchy policy, but it does have policies for safe and comfortable pedestrian and bicycle travel on regional streets and transit mobility and access. The design guidelines will help implement adopted policies (Chapter 2 will outline the policies).

- Design Outcomes Section 3.4: **(this section has been moved to Chapter 2)** On design outcomes: there is nothing about protecting habitat (environmental protection)

Will update Clean air and water to "Healthy Environment" and include habitat protection in discussion

Chapter 4 Design Elements and Considerations

- Section 4.2: Add section on Nature Corridors – street trees, climate resilient tree species, vegetated buffers, green/ natural features, fountains

  Added a section on Nature Corridors – Design elements section may end up being reorganized

- Section 4.2 – Design Elements - Curb Side Zone: Shoulder / shy – Need for service vehicles, stormwater space (inlets, reduce water entering travel lane), extra space for freight or emergency vehicle passage, curb clearance, clear zone

  Yes, these needs will be noted in this section

- Section 4.2 – Design Elements - Pedestrian Realm:
  - Consider space for vertical elements: Regulatory/ advisory signs, illumination poles, utility poles, traffic signal poles, fire hydrants, space for placement of trash/recycle bins, mailboxes.

    Yes, these types of uses will be noted

  - Provide clear space for ADA (sidewalk ramps, transit wheelchair landing space).

    Yes this will be noted

  - Cross-sections should use 0.5-feet for curb

    Yes – we will discuss this in the design approach as well as the gutterpan, where provided. We would not show this level of detail in the cross sections.

  - Cross-sections should provide a minimum of 1-feet on the back of sidewalk for future maintenance work and space if pedestrians accidentally step off the sidewalk. The City of Portland uses 1.5 to 2.5-feet of space behind the back of sidewalk, so doors from storefront buildings do not swing onto the sidewalk.

    This will be discussed in principle in the design elements section, but will not recommend specific dimensions.

- Section 4.3 – Design Considerations
  - Driveways / Access Management – Examples: Trees and other vertical elements will need to be located a certain distance to provide sight distance. Cars may wait for a gaps in the area of separated bicycle lane. Type of vehicles entering and exiting driveway. Grade of driveway for car, bicycle crossing, and ADA crossing.

Added access management as a design element (best practices would reduce the number of driveways)

- Topography (Slopes) and Structures (Retaining Walls, Bridges)

  Added this to be noted in the design considerations

- Above- and Underground Utilities

  Added to design considerations

- Maintenance – Does the design require additional work or special equipment? How does maintenance handle feature during snow events?

  Added to design considerations

- Environmental constraints: Parks, wetland, streams, etc.

  Added to design considerations

- Section 4.2: Give intersection design a separate section

  Done

- Address Americans with Disability Act (ADA) - under both design elements and design considerations

  Added to design elements

- Address access to schools, transit and prioritizing street design to serve those purposes

  Added to design considerations, and will be noted in the Introduction of the chapter in the discussion of context

- Curb Zone – add: issues around pick-up and drop-off, happening more, Bike Share stations

  Will be noted

- Add Bike Share as a function and design element

  Will be noted in the Sidewalk section

- Add transit priority lanes

  Added as a design element

- Design Considerations: Emerging technologies needs to be included

  Included with automated vehicles

- Chapter 4 is broken down between travel way and pedestrian realm; lots of people are walking to get somewhere to travel – pedestrians are part of the travel realm

Chapter is reorganized around specific design elements – e.g. sidewalks, travel lane widths – and not 'realms'

- Design Considerations: There needs to be discussion about existing conditions along corridors (e.g. driveways, garbage pickup, mailboxes, etc.) that make adding things like bikeways in difficult, how to balance the two

  This will be addressed in the discussion of context, where the street design is responding to and influencing the character of the street

- Look at design and transit at bottlenecks – transit caught in congestion

  Transit priority lanes will note the need for transit priority. Ch 2 will discuss policy and need to reduce drive alone trips

- Street trees and issue with large trees- sidewalks – how to design /add sidewalk around existing big trees where no sidewalk exists without disrupting tree – innovative solutions, adapting sidewalk standards (different classification/treatments for those streets?)

  Can include some information under street trees

- Good to see crime prevention – add to section under trails too, discuss how design can prevent crime

  Adding crime prevention through design to a general principles discussion in the introduction, also added security to design outcomes

- Address off-street parking, edge transitions

  Included in the design elements under frontage zones

- Design Functions/ Considerations: Address access for fire, police (emergency response)

  Included

- There is overlap between Sections 4.2 and 4.3 – consider different way to organize?

  Re-organization is in process as a way to

- New treatments may raise maintenance issues
- Section 4.3 – context sensitivity in more rural like locations

  Context is an overarching theme throughout the guidelines - where the street design is responding to and influencing the character of the street (based on future plans, 2040 vision, policies)

- Local trail design?

  there will not be a local trail section, but there will be a nature trail section

- School bus stops may need to be included (mentioned rural school bus stops)

  Bus stops, loading/unloading are part of the sidewalk zones and will be addressed. Implementation strategies will consider ways to address safety in areas without sidewalks

- Are we trying to get the arborist to identify trees that will not damage our roadways and sidewalks?

  Yes will include recommendations

- There could be some mention of new sidewalk materials/treatments that work with trees

- **Yes will include recommendations**

- There should be a best practices section for lighting. There is a lot of intersection with lighting and other features.

  Yes, for both streets and trails

- Add intersections/crossing to the Regional Multi-Use Paths section, which have unique design considerations, including:
  - Higher speeds by all users
  - Less expectation of need to yield or stop for other users
  - Mid-block and end block crossings
  - Design guidance for driveway, private street and public street crossings

  Added

- Unsure if signage is part of the scope of this project, but if so it would be good to have a section on Regional Multi-Use Paths.
  Added for streets and trails

- Interim and long-term design guidance is needed, especially when Multi-Use Paths include segments on streets or sidewalks until funding is available to complete gaps.
  Added

- Design Elements: address wayfinding.
  Added to design elements

- Section 4.2 Design Elements. Unsure why "roundabouts" were listed separately from "intersections". Is "intersections" used only to refer to traffic signals?

  Moved under intersections

- Section 4.2 (not listed) Signs and Markings. No need that this guide even try to get into the Manual on Uniform Traffic Control Devices (MUTCD) design standards

realm, but signs and markings are critical for safely and effectively using the transportation system, and they have implications on maintenance, aesthetics, etc. It may be worth acknowledging the importance of signs and markings, and the discretion that an agency can (or cannot) have in applying these.

Wayfinding added – will be addressed conceptually with guidance to refer to guidelines such as MUTCD

- Section 4.2 Under "Pedestrian Realm", There should be a line break between "Street Trees" and "Bicycle Parking". **Fixed**
- Section 4.2 "The Land Use Realm". Initially read this to state that this would provide guidance related to land use policy, which would be out-of-place. Upon a second look, assume that this section refers to how the transportation system interacts with existing and/or desired land uses, which is very on-point.

  Correct
- Section 4.2 (not listed) Like to see more overt reference to ADA, accessibility and vulnerable users. This is most directly addressed under Section 3.3, but even greater emphasis is warranted. It is vital that this guidance help to shape practitioners' understanding that ADA accessibility is not an option. This is especially critical when it comes to the discussion of tradeoffs in Chapter 5.

  Added
- Section 4.2 "Transitions" – Unsure what that refers to.

  Transitioning from one context to another, design treatments to make it work
- Section 4.2 "Stormwater and Run-off Management". Though we do not promote or embrace either of these methods, perhaps pervious pavement or pavers could be added.

  Yes, will be addressed
- Section 4.2 "Noise Mitigation" – This is referring to using soundwalls or a buffer distance to reduce the impact of transportation noise on adjacent land uses. However, vehicle noise can provide very important queues for the vision-impaired. This section should be clear about what noise is trying to be mitigated.

  noted
- Section 4.3 "Design Considerations" – this could be a place for greater emphasis on ADA and vulnerable users.

  Added ADA and safe routes to schools. added principles section to beginning of chapter and will note designing for all ages and abilities

- Section 4.1: Context should include macro land use (i.e. zoning, main streets) and micro land use (i.e. proximity to schools, parks, transit stops)
  Will note/address

- Section 4.2: Several comments:
  - Reference/take into account actual common Metro street widths in design recommendations
    yes will do
  - Use "Vehicle Realm" rather than "Travelway Realm", since people travel by walking, biking, rolling, etc outside the curbs
    Have changed, not using the 'realms' focusing on design elements, e.g. sidewalks, bikeways, lane width
  - Use "Auto Lane Width" rather than "Travel Lane Width"
    Changed to lane width – some street designs may include shared bike/auto space
  - Include mini-roundabouts in roundabouts section
    Will include
  - Consider separate section/chapter for intersections
    Separated out
  - Include Freight and automated vehicles (AVs) in Loading/Unloading section
    Will address
  - Bus/Bikeway interactions are listed. Also include Bicycle/Pedestrian shared space examples (we are considering this on Division Transit at certain intersection approaches)
    Included in mixing zones section

Section 4.2 Design Elements (suggested edits/ additions): **all added/ noted – still to be determined is level of detail**

- Stormwater ~~and Run-off~~ Management *[I don't think we need to distinguish]*
  - Facility Types
    - ~~Bio-Swales~~ Green Stormwater Infrastructure *[GSI tends to be the term-of-the-moment, though Portland still typically uses green infrastructure)*
      - Planters
      - Swales
      - Basins
    - Pervious Pavement *[non-street surfaces such as sidewalks, separated bicycle facilities, and islands; potentially the street surface, though most major streets may be poor candidates]*
    - Street Trees
    - Vegetation *[not sure what you mean here – de-paving? protecting existing vegetation?]*
    - ~~Impervious Surfaces~~ *[not sure what you mean?]*

        - Manufactured Technologies *[water quality only; e.g. StormFilter, Filterra, Modular Wetlands, PerkFilter, etc.]*
        - Detention *[flow control only]*
        - *[Sumps have been used for local service streets in Portland, but typically not major streets]*
    - Facility design considerations
        - site conditions: infiltration, slopes, utilities, contamination, etc.
        - goals: volume reduction, flow control, water quality (big differences in sizing requirements)
        - approach: regional vs. distributed
    - Performance Data? – we and others have good performance data
    - Maintenance Requirements? – we have cost data for primary facility types; perhaps a relative cost table for comparison?

- Make sure that stormwater is called out in all appropriate cross-sections. It's not always present along the entire street (often just near the intersection), so it sometimes drops off planning level transportation sections.

  Will do

Chapter 5 Decision Making in Context (now Chapter 7)

- Section 5.2 – Performance-Based Design - Evaluating Trade-Offs needs to consider whether the proposed cross-section is compatible with the existing / planned land uses (e.g. residential, industrial, nearby schools) and conditions on the corridor. We should always ask the question - Does the proposal establish a safe balance of competing transportation modes and land uses while designing a facility that can be constructed and maintained properly?

  This will be addressed in this section

- Address decision making for intersections – alternatives analysis

  Added under Applications/ what if scenarios – this section may be further reorganized

- Section 5.2 -Stress policy when evaluating tradeoffs - designs accountable to adopted policies, policy used in evaluation of trade-offs

  Will be stressed and guidance on how to apply the policies will be given

- Chapter 5 should be a substantial chapter – very important

  Agreed

- Consider an on-line tool to help evaluate trade-offs, e.g., something like Street Mix, but better

  Will consider

- In Chapter 5, data is important. What are the metrics for success? What are best practices for collecting data and tracking? Being able to show success is important.

  Added a place holder section 'data to support decision making' not sure if this is MMLOS, or some other tool

- Section 5.2: Evaluating tradeoffs should support adopted policies; consider movement of people and goods rather than vehicles

  agreed

Chapter 6 Design Treatments in Context

- Show typical cross sections in the region and design schematics to fit those situations specifically

  Will do

- Original guidelines calling for wider roadway widths than exist in the region, not realistic

  Will show a range

- In Portland, we found a few roadway widths that are common and designed cross sections to be visualize those street widths

  Good approach

- Look at whole travelway widths, not just curb to curb because pedestrians exist beyond the curb

  Will do

- Case studies that show what could be done, and help address the concerns of skeptics, are helpful. Even if it is a unique case study, it may still be useful to users of this guide, because you can get ideas of how other people have done something less conventional

  There will be case studies

- Interesting to look at the "person throughput" of existing roadways [in 2040] with current design and with design treatments recommended. Do a comparison.

  Case studies or typical cross-sections could include examples of person throughput – especially road diets

- In (current) schematics: did a good job of showing best practice. In updated guide, do not show any images of on street bicycle lanes, only show protected lanes since it's best practices

  Will show best practices, will consider some mixed zones on low speed streets

- Safe routes to parks, transit, schools – designs for these uses

Design elements will support these functions

Chapter 7 Implementation Strategies (now Ch 8)

- Sections 7.3 and 7.4 will be very helpful for Multnomah County
- Chapter 7 appears to have two bullets on the same sub-topic, incremental changes/solutions.

Resource List additions

- TriMet Bus Stop Guidelines (2010) https://trimet.org/publications/ or https://trimet.org/pdfs/publications/bus-stop-guidelines.pdf
- National Association of City Transportation Officials (NACTO) Transit Design
- NCHRP Project 15-47 should be considered as a tool. In particular, sections 3.2, 5.4, 5.5, 5.6 provide guidance for an improved roadway design process.
- NCHRP Project 15-52 should be considered a tool. In particular, Chapter 5 provides guidance for an improved functional class system.
- Portland Green Street Details contained in the Stormwater Management Manual. Lots of caveats, as the generic details are mostly suited for local service streets and neighborhood collectors: https://www.portlandoregon.gov/bes/article/588008.
- Physical Activity: Built Environment Approaches Combining Transportation System Interventions with Land Use and Environmental Design. - The Community Guide to Preventive Services is kind of the gold standard in reviewing public health research and packaging it up in the form of a recommendation. The conclusions are a bit broad, but it's a helpful document to cite if you're looking for a reliable source on the health benefits of street connectivity and bicycle/ped infrastructure.
- What works for health: Complete streets & streetscape design initiatives - Similar to the link above, this review of evidence is a handy way to point to the research supporting health benefits of streets with strong design features. They also find scientific support for traffic calming as a way to improve health.
- Healthy Streets: Evidence Review - The City of Toronto contracted with Larry Frank's transportation-health brain trust to summarize the health benefits of various design features. This might be most helpful, as it offers specific support for features like buffer zones, medians, and narrow lane width.
- Active Design: Shaping the sidewalk experience - This guidance document from NYC is a great example of how a jurisdiction used health as a basis for good street design. The section that covers best practices for regulating physical elements of sidewalks (chapter 4) is particularly helpful. Despite being a document from NYC, it includes plenty of photos and examples from the Portland region.

- Reducing Urban Heat Islands, a Compendium of Strategies - Cool Pavements: https://www.epa.gov/sites/production/files/2014-08/documents/coolpavescompendium_ch5.pdf
- AASHTO A Policy on Geometric Design of Highway and Streets
- AASHTO Guide for the Development of Bicycle Facilities
- AASHTO Roadside Design Guide
- State and local jurisdiction freight and emergency response maps and other materials to ensure a cross-section for a functional classification does not shrink the horizontal and vertical clearances for freight and emergency responders.

Next steps
Lake urged work group members to submit additional comments and suggested resources by July 5.

Adjourn
There being no further business, meeting was adjourned by group leader at 11:45am.
Meeting minutes respectfully submitted by
(Nicholas Simmons, Planning and Development Intern)

Next meetings of RTP Design work group
Thursday, Sept. 28, 2017
9-11 a.m. Metro, Council Chamber

Thursday, Nov. 9, 2017
9 to 11 a.m. Metro, Council Chamber

Meeting materials

Item	Document Date
Memorandum	June 21, 2017
Roster for Design Technical Work Group	May, 22, 2017
Draft Table of Contents	June 14, 2017
Literature Review and Best Practices Review	None
Creating Livable Streets	2002
Green Streets Guide	2002
Trees for Green Streets	2002

Memo

Metro
600 NE Grand Ave.
Portland, OR 97232-2736

Date: September 25, 2017

To: 2018 RTP Design Work Group

Subject: TPAC & MTAC combined comments on Draft Table of Contents for the Designing Livable Streets and Trails Guide

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At the July 28 and August 2 meetings, members of Metro's Transportation Policy Advisory Committee (TPAC) and Metro Technical Advisory Committee (MTAC) provided input on the July 13, 2017 version of the Draft Table of Contents for the Designing Livable Streets and Trails Guide.

Chapter 1: Introduction

- Be clear on what will be different in the update.

Chapter 2: Design Policy

- List/mention emerging issues that we don't exactly how to deal with and note that they impact street design, aging population, Vision Zero, including climate change, resiliency to natural disasters, autonomous vehicles. We know we won't be able to adequately address in the guide but need to highlight and mention.
- Make sure to address the aging population as transportation users – it is a health and equity issue. Note under section 2.3 under Health.
- Transit mobility is an area of concern – transit stuck in congestion. Address in design policy and treatments.

Chapter 3: Design Classifications

- Make sure to highlight the design elements of the enhanced transit toolkit
- 3.2: transit access: mention transit movement, not just access
- 3.3: regional design classifications
    - Note that there are different layers of design impact
    - Clarification that there is not a different design classification for streets in Suburban and Urban areas
    - Throughways: (ODOT)
    - Roads in "rural area" should not be included
    - "Freight" routes need to be taken into consideration with design
    - Like the use of the term Multi-Use Path in addition to or in place of trail

Chapter 4: Design Elements

- What are the criteria for what is shown in the guidelines – who decides? (*Best practices that have demonstrated supporting regional desired outcomes are included. Technical work group, consultant team, and other input determines what goes in the guide.*)
- 4.2: Design principles – clarification that this section is not delving into building code – it is stating the connection between land use and transportation
- 4.4:
    - If possible, touch on low-volume shared streets/ woonerf style for regional bikeways
    - Access management/driveways (at sidewalk grade) is important tool in Washington County
    - Intersections: discuss how to calm and narrow intersections, important for crossing, especially for older people
    - Get there safely for people of all ages + abilities
        - People with disabilities, blindness, navigating the transportation system is dangerous if there are not sidewalks, better crossings.
        - Housing costs are moving people further out where there is not always good access to transit and then there is more reliance on para transit, which is expensive.
- 4.5:
    - Streets on the urban rural divide is important design issue for Washington County
    - Urban-rural boundaries, there are 25,000 people "outside" Hillsboro commuting into Hillsboro so how the streets are designed in these areas is important

Chapter 5: Design Classifications in Context

- Regional Nature Trails: too much to take on?

Chapter 6: Decision Making in Context

- Key chapter helps jurisdictions to understand what they are required to do
    - Include practical examples – case studies
    - Finding and engaging key stakeholders is a challenge

Chapter 7: Implementation Strategies

- Look at NACTO design + pilot projects to see what is working
- 7.6: repaving – discuss opportunities with restriping to reconfigure the roadway
- Show how incremental improvements can be implemented, and the best way to phase improvements, half street improvements. Show how to do small infill projects not required earlier; trails built on accessways
- Touch on what can be legally extracted from a developer, touch on financing, impact fees, alternative funding sources
- Need to be mindful of costs; measure outcomes
- Case study: Monroe neighborhood greenway

- Trying to fit something in to existing right of way, acquiring ROW not always possible

Effective Aug. 16, 2017

Designing livable streets and trails

Healthy communities through better design

Livable streets support the economic, social and environmental health of our region. Metro is working with local, regional and state partners to update regional transportation design guidance as part of the 2018 Regional Transportation Plan.

We all have a stake in how our transportation network is designed. From the delivery truck driver to the high school student bicycling to class, the mother driving her kids to swim lessons and the office worker running to catch the bus, how we get there matters.

As the region continues to grow, designing streets that are livable will help us grow in a healthy, prosperous and equitable way. Livable streets:

- provide efficient and reliable travel options to make it easier to drive less, reduce greenhouse gas emissions and protect clean air and water
- improve safety for all modes of travel and reduce fatal and severe crashes
- support economic prosperity
- enhance personal security and support healthy, active lifestyles
- support regional equity goals
- support efficient urban landscapes and vibrant communities
- provide a sense of place and identity
- promote resiliency.

What are "livable streets?"

Livability in transportation is about leveraging the quality, location and type of transportation connections and services to help achieve broader regional and community goals. Livable streets integrate street design with nearby land uses to minimize congestion, encourage walking, biking and transit, and ensure the wellbeing of wildlife.

Creating livable streets is a way to achieve safer and healthier communities, improved access to jobs, school, nature and services, cleaner air and water, economic prosperity and reduced greenhouse gas emissions.

What will be included in the update?

Metro's designing livable streets and trails project will update and develop new design guidelines and resources for our regional transportation network:

- Current guidelines – *Creating Livable Streets*, *Green Streets*, and *Trees for Green Streets* – will be updated and combined into one resource.
- New regional multi-use path and trail design guidelines will be developed.
- Current guidelines on *Wildlife Crossings* and *Green Trails* will not be updated, but will be referenced in the updated guidelines.
- Resources such as a visual library and case studies will be available on an updated webpage.
- Forums and best practices tours highlighting key topics in street, stormwater and multi-use path design in the region and throughout the world.

The final design guidelines will provide a policy framework, a toolbox of design elements, visualizations and schematics illustrating design elements in context, decision making resources to navigate trade-offs, case studies and graphics illustrating topic areas.

Why now?

The current design guideline handbooks to build safe and healthy streets were last updated in 2002. Since that time, many transportation policies have been updated and our understanding of livable streets has evolved through practice and research:

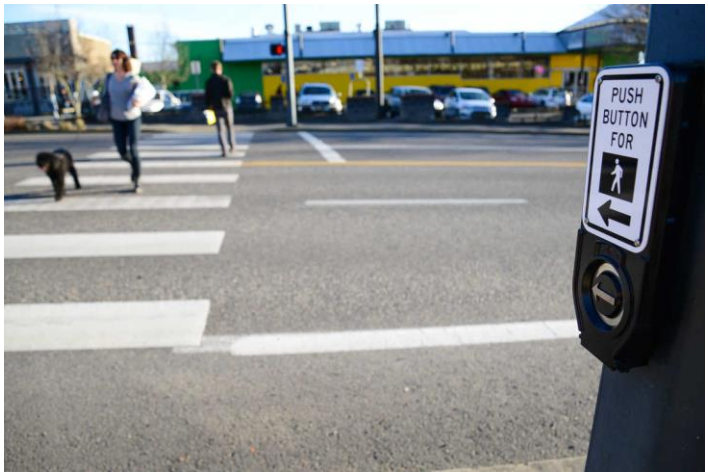
- Regional transportation policy has evolved with the adoption of an outcomes-based planning framework.
- Regional freight, safety and active transportation plans and the 2014 Climate Smart Strategy include recommended changes and updates.
- The role of livable streets to help address traffic congestion and improve safety and mobility options for all modes is better understood.
- National research and efforts related to street design have continued to expand, especially for bikeway and intersection designs.
- Addressing regional challenges, such as a growing aging population, increasing diversity, demand for safe routes to school, the high rate of fatal pedestrian crashes, climate change and decreasing mobility for buses require creative and up-to-date street design solutions.

After 15 years, it is time to update these guidelines to reflect changes in policy, priorities and best practices.

Next steps

A regional work group comprising agency staff, technical experts, practitioners, community members, public health representatives and advocates will be guiding the update of the design guidelines. Metro technical and advisory committees will also provide input. Ultimately, the project will recommend updated policies related to transportation design and safety in the 2018 Regional Transportation Plan.

Find out how to be involved – and more – at oregonmetro.gov/rtp.



Metro

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2018 REGIONAL TRANSPORTATION PLAN UPDATE

Designing Livable Streets

Transportation Design Technical Work Group
Meeting #2 – September 28, 2017

Welcome & introductions

Name &
organization

Meeting purpose and agenda

- Receive input from work group members on the draft Annotated Outline
- Input will be reflected in final draft of Annotated Outline for review at November meeting
- Outline reflects input from June 29 meeting, follow up comments, input from TPAC & MTAC, and internal Metro team review

Project approach timeline

- April to December 2017 - Phase 1
  Determine content and approach for the update
- January to December 2018 - Phase 2
  Develop and finalize guide and resources, update design classification map and design section in 2018 RTP

Project materials on RTP webpage

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

Annotated Outline

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%
Chapter 4: Design Elements	20%
Chapter 5: Visualizing Design Classifications in Context	25%
Chapter 6: Decision-Making in Context	18%
Chapter 7: Implementation Strategies and Examples	17%

Chapters Overview

Chapter 1: Introduction 5%

Chapter 2: Design Policy and Desired Outcomes 5%

Desired Outcomes *are the results we want to support (e.g. healthy people, sustainable economy) through street and trail design*

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%

Design Functions *describe the universe of uses (e.g. physical activity, moving goods) that streets and trails can serve and thereby contribute to the desired outcomes*

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%

Classifications *are a typology (e.g. Regional Boulevard, Industrial Road) assigned to arterials and throughways to support different types of functions.*

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%
Chapter 4: Design Elements	20%

Design Elements *are engineering and design solutions (e.g. wide sidewalks, freight aprons) used to support the various functions (e.g. physical activity, goods movement) of livable streets and trails.*

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%
Chapter 4: Design Elements	20%
Chapter 5: Visualizing Design Classifications in Context	25%

Chapters Overview

Chapter 1: Introduction	5%
Chapter 2: Design Policy and Desired Outcomes	5%
Chapter 3: Design Functions and Classifications	10%
Chapter 4: Design Elements	20%
Chapter 5: Visualizing Design Classifications in Context	25%
Chapter 6: Decision-Making in Context	18%
Chapter 7: Implementation Strategies and Examples	17%

Key Areas for Discussion

Section 3.2: Regional Functional and Design Classifications

Chapter 4: Design Elements

Chapter 5: Visualizing Design Classifications in Context

Section 6.2: Performance-Based Design: Decision-Making

Chapter 7: Implementation Strategies and Examples

Next steps

Oct 6 – Provide additional comments

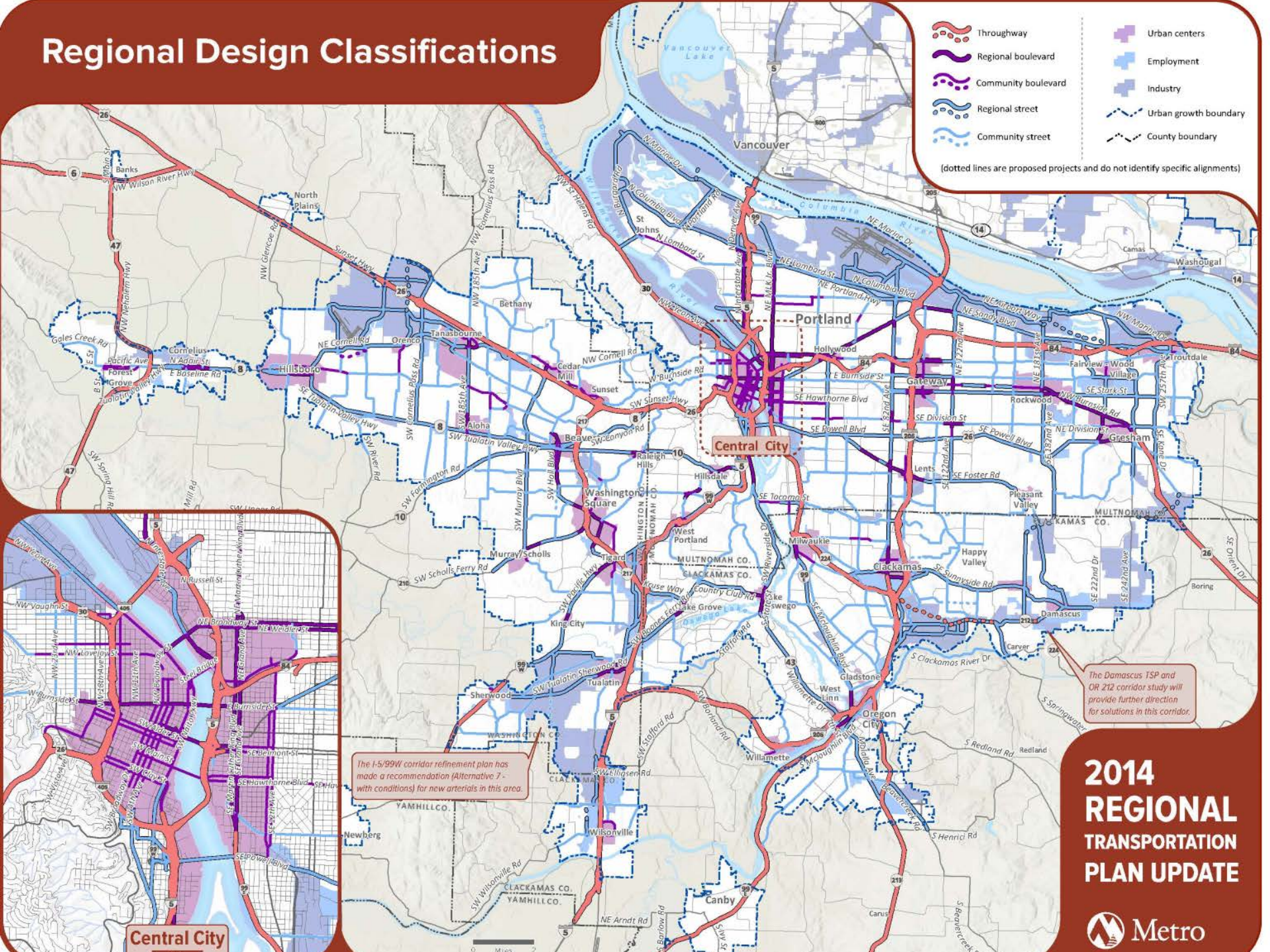
Nov 9 - Work Group Meeting #3 - Final Annotated Outline/Sample Visualizations

Nov 15- Update to MTAC

Nov 17- Update to TPAC

2018 - Phase 2 Begins

Regional Design Classifications



2014 REGIONAL TRANSPORTATION PLAN UPDATE

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