

**Testimony for the City of Medford draft Transportation**

**System Plan**

**(CP-16-036)**

**Planning Commission Public Hearing**

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**Submitted**

**By**



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**&**

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## Table of Contents

#	Section	Page
	<b>Introduction.....</b>	<b>1</b>
	<b>Failure 1 - ORS 660-12-0000(3)(c), OAR 660-12-0035(4) and OAR 660-12-0035(7)</b>	<b>5</b>
	<b>Failure 2 - OAR 660-12-0045(3)(d) and OAR 660-12-0045(3)(d)(A)</b>	<b>7</b>
	<b>Failure 3 - OAR 660-12-0045(3) and OAR 660-12-0045(3)(d)</b>	<b>8</b>
	<b>Failure 4 – OAR 660-12-0045(3)(d)(B)</b>	<b>12</b>
	<b>Failure 5 – OAR 660-12-0045(3)(d)(C)</b>	<b>13</b>
	<b>Failure 6 – OAR 660-12-0035(4) – (6)</b>	<b>14</b>
	<b>Failure 7 – OAR 660-12-0045</b>	<b>14</b>
	<b>Failure 8 – OAR 660-12-0020(3)(d)</b>	<b>15</b>
	<b>Failure 9 – OAR 660-12-0020(3)(b)</b>	<b>16</b>
	<b>Failure 10 – Oregon Constitution and ORS 659a.006</b>	<b>16</b>
	<b>Exhibit 1 – NACTO – Contextual Guidance for Selecting All Ages and Abilities Bikeways</b>	
	<b>Exhibit 2 – Portland’s Safe and Convenient Bicycle Facility Network (1980 – 2010)</b>	
	<b>Exhibit 3 - Change in Demand with Safe and Convenient Bike Facilities (before and after experience)</b>	

## Introduction

This testimony is submitted by Siskiyou Velo, the local bike club in the Rogue Valley. We have advocated for the City to provide safe and convenient bicycle facilities for all residents. To this end, we have made numerous presentations to civic groups and have met with City officials throughout 2018 in an attempt to ensure that the City's bicycle transportation system in 2038 will, in fact, meet the requirements of the Oregon Transportation Planning Rule (TPR), Chapter 660.

The City's Transportation System Plan – Update (TSP—Update) fails to incorporate the requirements of the TPR to create a viable bicycle transportation network. The TPR has been in effect since 1991 and while there have been amendments to the Rule, it has always required all cities and counties within metropolitan planning organizations to make changes to their existing transportation system “to enhance, promote and facilitate safe and convenient ... bicycle travel” (OAR 660-12-0000(3)(a)).

Over the years, Medford has added many miles of bike lanes on its arterial and collector streets. Presumably, this was in response to OAR 660-12-0045(3)(b) which states “**bikeways** shall be required along arterials and major collectors” (emphasis added). The City, in contrast to the TPR requirement, has utilized bike lanes as a “one-size-fits-all” improvement ignoring other TPR requirements including OAR 660-12-0045(3)(d)(A), which requires that **bike facilities** (emphasis added) be “reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage ... cycle travel for short trips.”

As a consequence of the City's policy, the existing bicycle transportation system is largely unusable by the majority of people who might otherwise choose to bicycle if the system were, as required by the TPR, “safe and convenient.” A survey conducted by the City in August 2017 (Medford Transportation Survey, question 17) found that over 50% of residents ride bikes, but only about 6% feel safe and confident riding on city streets. The TSP – Update refers to these people as “strong and fearless” or “enthused and confident.”

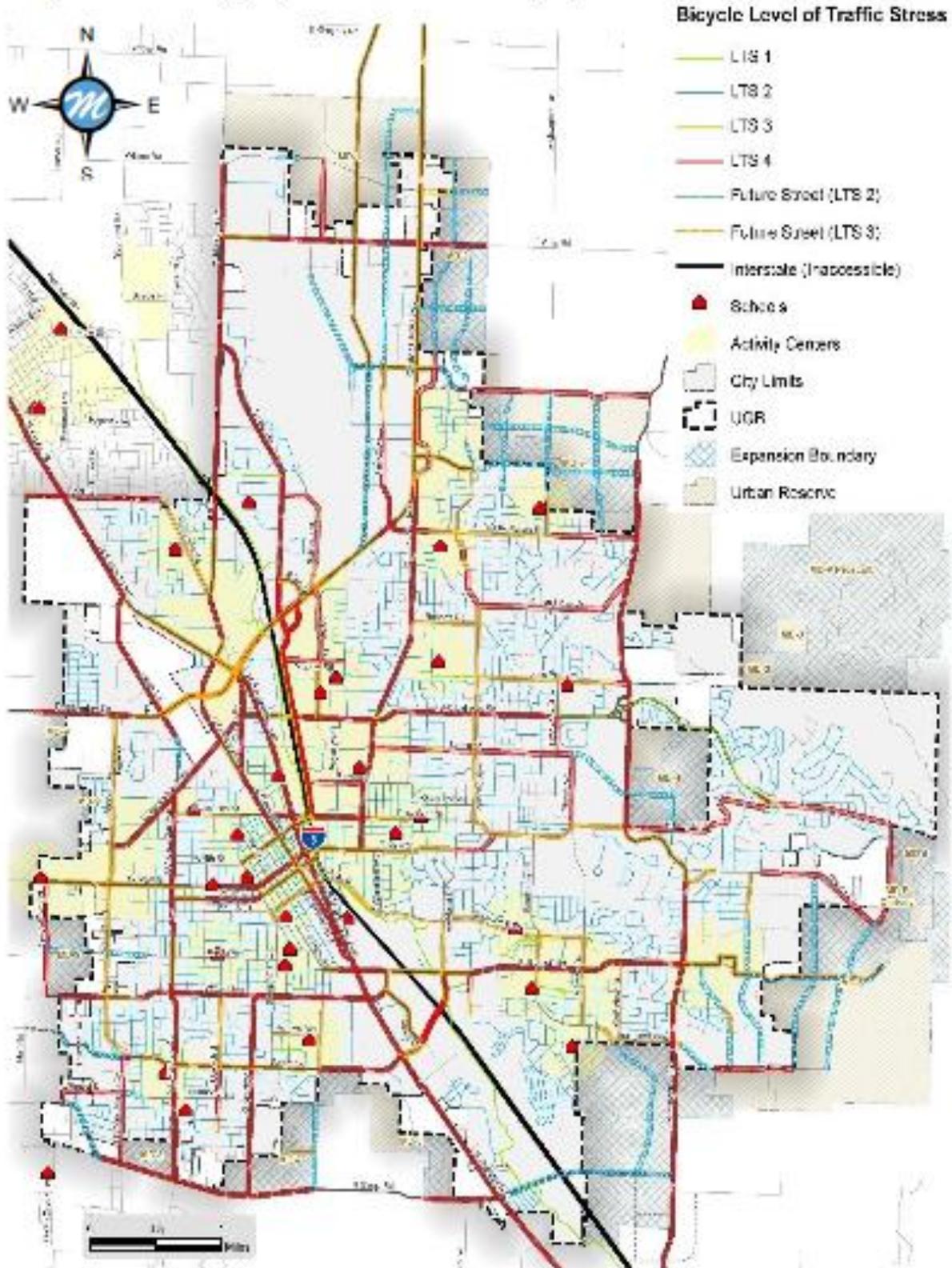
Figure 1 (draft TSP, Figure 10) indicates level of stress (L or LTS) for existing bicycle facilities in Medford. Only Level 1 stress bike facilities, it should be noted, can be used by people of all ages and abilities. There are no existing collector or arterial streets shown on Figure 1 with L1 or L2 stress. There are future streets planned for Level 2 stress—generally, L2 stress facilities can accommodate most adults of ages 18-64.

All of the City's collector and arterial streets are either L3 or L4, which are considered unsafe for everyone. The current bicycle network on arterial and collector streets, then, completely excludes children, seniors and families. Analysis of Fig 1 also indicates that riding a bicycle from anywhere to anywhere in Medford is almost impossible on L1 stress facilities—thus excluding vast numbers of all people (including commuters, shoppers, people going to medical appointments, etc.) from riding safely and conveniently in Medford.

The TSP—Update validates these findings, noting on page 34 “that many streets, with bicycle lanes, still result in [high] LTS [Level of Traffic Stress] 3 or 4 ... due to the speed of adjacent traffic.” Thus the City's existing bicycle transportation system is not “reasonably free from hazards,” a TPR required standard for bicycle facilities (see OAR 660-12-0045(3)(d)(A)).

Figure 1

Figure 10 Existing Bicycle Level of Traffic Stress (LTS)



Further compounding the issue is the City’s historic construction of overly narrow bike lanes on most of its arterial and collector streets. The problem is illustrated in Figure 2. Many of the bike lanes on major (arterial and collector) streets do not meet the City’s street standards, which require 5’ wide bike lanes except on major arterials, where 6’ wide bike lanes are required. The resulting close proximity of bicycles and traffic results in higher Levels of Stress on many streets than indicated in Figure 1. The TSP--Update does not include any description of the LTS methodology but it likely relied upon the flawed inventory indicated here.

Figure 2

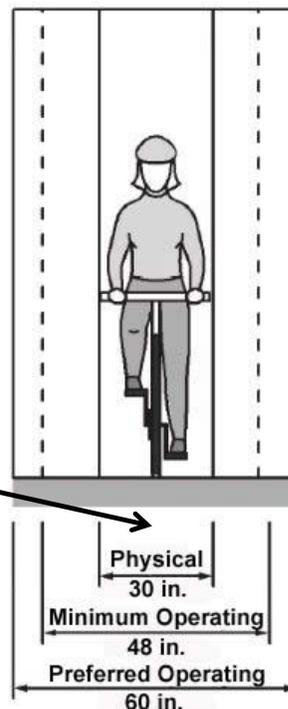
### Too Narrow Bike Lanes

Medford, like the rest of the RVMPO cities, have focused almost exclusively on adding bike lanes on major streets (arterial and collector streets). **The City’s efforts have often lead to overly narrow lanes for bikes** despite the City’s street standards which require five feet wide bike lanes except on major arterials where the City’s code\* requires bike lanes to be six feet wide (both measures include the width of the drain pan).

\* Source: <http://www.ci.medford.or.us/codeprint.asp?codeid=4426>



**Riding a Bicycle Should Not Require Bravery**



Source: 2012 AASHTO Bike Guide

The TSP does call for a bicycle network that is safe for everyone (TSP--Update, Vision, Goal 1, Objective 1, 2, and 3 as examples). Yet, the draft TSP sets LTS 2, only suitable for adults, as the future standard for bicycle improvements.

It is also notable that there are no bike facility “safety” improvements listed in the TSP despite the City’s acknowledgement that the existing bicycle transportation system is unsafe for the majority of its citizens. For existing bicycle safety deficiencies, the draft TSP update merely states that these “will be considered when improving or retrofitting roadways” (TSP--Update, page 34).

Siskiyou Velo urges the City to state in the TSP explicit requirements for bicycle facilities that are safe and convenient for all citizens. The National Association of Transportation Officials (NACTO) standards are explicit (see Exhibit 1, attached), and should form the basis for the bike facility requirements in the TSP-Update. Though the NACTO document is referenced as an action

item in the TSP-Update, a simple reference to that document is not sufficient. Furthermore, the wide discretion afforded in the TSP--Update in terms of cross-section selection and treatment of legacy streets is unlikely to result in an adequate bicycle network for all citizens.

Our review, attached, finds that the City's draft TSP does not meet the following TPR requirements.

- 1) OAR 660-12-0000(3)(c)
- 2) OAR 660-12-0020(3)(b) and (d)
- 3) OAR 660-12-0035(4) – (6)
- 4) OAR 660-12-0045(3)(d)(A) – (C).

The draft plan also would also discriminate against selected portions of the City's and region's population and thus undermine protections included in the Oregon Constitution and ORS 659A.006.

Please instruct the City's staff to modify the TSP--Update to ensure that the bicycle transportation system is safe and can serve everyone by the year 2038. Thank you.



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**Failure 1**

**OAR 660-012-0035 subsection (7) Evaluation and Selection of Transportation System Alternatives requires:**

“Regional and local TSPs shall include benchmarks to assure satisfactory progress towards meeting the approved standard or standards adopted pursuant to this rule at regular intervals over the planning period. MPOs and local governments shall evaluate progress in meeting benchmarks at each update of the regional transportation plan. Where benchmarks are not met, the relevant TSP shall be amended to include new or additional efforts adequate to meet the requirements of this rule.”

The table below details the Rogue Valley Metropolitan Area’s failure to meet the adopted “Measure 1” benchmark - “the percentage of total daily trips taken by a combination of bicycle and walking (non-motorized) modes...” The percentage of bike/pedestrian mode share has remained unchanged since the year 2000 at 8.2 percent, and the transit mode share is lagging behind its 2015 benchmark.

**Table 1.2 – Measure 1: Transit & Bike/Ped Mode Share 2010 Benchmark Analysis**

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 1: Transit and Bicycle/Pedestrian Mode Share	The percent of total daily trips taken by transit and combination of bicycle and walking (non-motorized) modes. Determined from best available data (e.g., model output and/or transportation survey data).	% Daily Trips	% Daily Trips	% Daily Trips				
		Transit: 1.0 Bike/Ped: 8.2	Transit: 1.0 Bike/Ped: 8.2	Transit: 0.9 Bike/Ped: 7.3	Transit: 1.0 Bike/Ped: 8.4	Transit: 1.45 Bike/Ped: 8.20	Transit: 2.2 Bike/Ped: 9.8	Transit: 3.0 Bike/Ped: 11

Source: Alternative Measures Report, Rogue Valley MPO, 2015

Benchmark 3 established standards for the construction of bike facilities on arterial and collector streets. According the 2015 RVMPO report, the RVMPO has exceeded the benchmark.

**Table 3.1 – Measure 3: Percentage of Arterials/Collectors with Bicycle Facilities 2010 Benchmark Analysis**

Measure	How Measured	2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Target 2020
Measure 3: % Collectors and arterials w/bicycle facilities	Determined through GIS mapping.	21%	28%	37%	37%	54%	48%	60%

Source: Alternative Measures Report, Rogue Valley MPO, 2015

A 2017 update and review of the 2015 benchmark analysis found errors in the 2014 analysis. “Results of this analysis show that **28%** of arterials and collectors within the RVMPO have facilities for bicyclists that meet the criteria described above. This number is below the 2015 benchmark of 48%.” (4/20/18 email and attachment, Andrea Napoli, RVMPO – available upon request). The draft TSP does not include this updated information.

## 2017 Update of Benchmark Analysis – Measure #3

**Table 3.0: Benchmarks, 20-Year Target, and Results of Analyses for Measure #3**

MEASURE	Baseline 2000	Benchmark 2005	Measured 2007	Benchmark 2010	Measured 2014	Benchmark 2015	Measured 2017	20-Yr Target 2020
Measure 3: % Collectors / Arterials w/ Bicycle Facilities	21%	28%	37%	37%	54%	48%	28%	60%

TPR requirement 660-12-0035(4) reads “In MPO areas, regional and local TSPs shall be designed to achieve adopted standards for increasing transportation choices and reducing reliance on the automobile. Adopted standards are intended as means of measuring progress of metropolitan areas towards developing and implementing transportation systems and land use plans that increase transportation choices and reduce reliance on the automobile. It is anticipated that metropolitan areas will accomplish reduced reliance by changing land use patterns and transportation systems so that walking, cycling, and use of transit are highly convenient and so that, on balance, people need to and are likely to drive less than they do today.”

Recent data shows that Medford residents are becoming more dependent upon the use of automobiles to get to work based upon recent statistics from the US Census Bureau, American Community Survey. In 2010, 77.8 of Medford residents drove alone to work while in 2016 the number had increased to 78.8 of all workers.

Portland, as a frame of reference, has increased bicycle mode share from one percent (the historic and existing mode share for bicycles in the Medford) in 1990 to 6.1 percent in 2010 by constructing a combination of off-street trails, bike boulevards, and separated in-roadway bicycle facilities. Portland’s TSP provides for a 25% bike mode share by 2035. (See Exhibit 2, attached).

The assumptions used as a part of Measure 1 are incorporated into and directly impact the future year travel demand forecast. A higher alternative mode share has the effect of reducing forecast motor vehicle travel demand (i.e. needs). The resulting output from the transportation model output are used together with existing roadway capacities to identify roadway improvement needs.

An unrealistically low alternative mode share translates into a higher overall need for roadway and intersection improvements. Consequently, the transportation needs and “demand-to-capacity ratios ... included in Volume II of the TSP” (draft TSP, page 23) are overstated and result in more roadway improvements than necessary. "Transportation Needs" as the term is used in the TPR “means estimates of the movement of people and goods consistent with acknowledged comprehensive plan and the requirements of this rule. Needs are typically based on projections of future travel demand resulting from a continuation of current trends as modified by policy objectives, including those expressed in Goal 12 and this rule, especially those for avoiding principal reliance on any one mode of transportation.” (emphasis added) The absurdly low alternative mode share, as expressed in Measure 1, is a policy objective and makes the travel demand forecasts developed as a part of the draft TSP of questionable value.

**Conclusion 1a:** The updated TSP does not satisfy the requirements of OAR 660-012-0035(4). The City’s TSP presents the existing benchmarks but does not acknowledge that they have not been met, nor does the City offer updated benchmarks to achieve the requirements of the TPR a requirement of OAR 660-12-0035(7)..

**Conclusion 1b:** The existing Measure 1 objectives are far too low to achieve the requirement of OAR 660-12-0035(4). A modest and achievable goal bike mode share in 2038 would be 10 percent.

**Conclusion 1c:** The local Measure 1 benchmark as adopted, even if achieved, would not significantly reduce reliance on the automobile. The combined pedestrian and bicycle mode share should be above 20 percent of achieve the requirements of the TPR, especially the requirement to achieve “a reduction in reliance on single occupant automobile use.” (OAR 660-12-0000(3)c). Based upon the experience of other areas that have constructed “all ages and abilities” bicycle networks, a bike mode share in Medford can easily achieve 10 percent (see Exhibit 3) provided the bicycle network is “safe and convenient.”

**Conclusion 1d:** The draft TSP fails to accurately forecast future “travel demand” due to the use of an unrealistically low, alternative mode share.

## **Failure 2**

The draft plan does not conform to the requirements of OAR 660-12-0045(3)(d)(A) in that the proposed street designs (TSP, Exhibits 2 – 13, pages 56 – 67) include bicycle facility designs that would not be “reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage ... cycle travel for short trips.”

The draft plan includes street cross-sections that would be unsafe for most people riding bicycles. All Ages and Abilities Bicycle Designs, (included by reference - [https://nacto.org/wp-content/uploads/2017/12/NACTO\\_Designing-for-All-Ages-Abilities.pdf](https://nacto.org/wp-content/uploads/2017/12/NACTO_Designing-for-All-Ages-Abilities.pdf)) a publication by the National Association of City Transportation Officials, NACTO. As the title implies, the NACTO document details bicycle designs suitable for everyone (not just adults). It embodies the TPR’s requirement for “safe and convenient” bicycle network through a variety of bicycle facility designs that vary based upon traffic volumes and speeds. That integration is essential to meet the requirements of The NACTO design manual includes facility designs for neighborhoods, parkways, bike paths, as well as high speed, high volume roadways which, when combined, would create a bicycle network that will “meet(s) travel needs of bicyclists considering destination and length of trip” a requirement of OAR 660-12-0045(3)(d)(C).

Table 2-1 includes a review of the City’s proposed cross-sections (pages 56 through 67) and their relationship to both LTS and “all ages and abilities” bicycle designs. Only two of the 13 proposed cross-sections (TSP, Exhibits 4 and 7) conform to “all ages and abilities” design standards. Nine of the 13 don’t even meet the City’s stated “standard” of LTS2 (adults only).

The separation of bicycles traffic from motor vehicle traffic on high speed high volume roadways (i.e. arterial and collector streets) is essential to the creation of a “safe and convenient” bicycle transportation network. That is even more significant given the prevalence of distracted driving. “The National Highway Traffic Safety Administration estimates that at any given moment in the United States, about 660,000 people are using mobile phones behind the wheel; 2.2% of all drivers are ‘text-messaging or visibly manipulating handheld devices’ at any time. This figure has

almost quadrupled over the past decade.” (<https://cyclingtips.com/2017/12/abcs-of-awareness-bontragers-mission-to-make-cyclists-more-visible/>) That means for every 100 cars that pass a bicyclist, two are probably distracted. “Distracted driving continues to be the number one leading cause of **car accidents** in America. Talking on the phone, texting, eating, reading, grooming, and talking are just some of the ways drivers get distracted behind the wheel.” (<https://www.drivers.com/article/1173/>)

Yet, only two of the City’s 12 proposed roadway cross-section includes separation of bicycle traffic from high speed, high volume traffic.

Conclusion 2A: The draft TSP includes cross-section designs that do not conform to the TPR requirement for a “safe and convenient” bicycle network (OAR 660-12-0045(3)(d). Instead, the designs set a woefully inadequate standard based upon serving a particular age group (LTS2). Further, the draft TSP provides the authority for the City to select designs that would be dangerous for bicyclists.

Conclusion 2B: The draft TSP does not satisfy the requirements of OAR 660-12-0045(3)(d)(A) in that the proposed street designs (TSP, Exhibits 2 – 13, pages 56 – 67) do not include features that would ensure that people riding bicycles would be “reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage ... cycle travel for short trips.”

### **Failure 3**

The draft plan does not include systematic measures, projects, or plans that will conform, during the current planning period, to the TPR requirement (OAR 660-12-0045(3)(d)) for a “safe” bicycle network. This failure will ultimately mean that at the end of the planning horizon (2038), the bicycle transportation system will remain, as it is today, unsafe.

Table 2-1. Draft TSP cross-sections and conformance to TRP requirements.

Roadway Classification/Name	Draft TSP Information			Interpreted and Estimated Conditions//Recommendations			
	Exhibit #	Bike Facility Type	Width	Estimated 95 <sup>th</sup> percentile speed	Estimated LTS	Facility Type Required to Achieve “All Ages and All Abilities”	Notes
Major Arterial/ Regional Arterial	2	Bike Lane	6	50	LTS3	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Major Arterial/ Regional Arterial	3	Buffered Bike Lane	5	50	LTS2	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Major Arterial/ Regional Arterial	4	Separated Bike Lane	7	50	LTS1	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Minor Arterial	5	Bike Lane	6	40	LTS3	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Minor Arterial	6	Buffered Bike Lane	5	40	LTS2	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Minor Arterial	7	Separated Bike Lane	7	40	LTS1	Separated/Protected Bike Lane or Bicycle Path	Motor vehicle speeds should be <=25 with adjacent bike lanes
Major Collectors	8	Bike Lane	6	35	LTS3	Separated/Protected Bike Lane or Bicycle Path	Bike lane okay if ADT less than 3,000 and speeds <=25 MPH
Minor Collector	9	Bike Lane	5	35	LTS3	Separated/Protected Bike Lane or Bicycle Path	Bike lane okay if ADT less than 3,000 and speeds <=25 MPH but should be 6 feet wide when adjacent to parking**
Minor Collector Alternative	10	Bike Lane	6	35	LTS3	Separated/Protected Bike Lane or Bicycle Path	Bike lane okay if ADT less than 3,000 and speeds <=25 MPH
Industrial Street	11	NONE	NA	30	LTS4		Bike Facility required unless speeds <10 MPH
Commercial Street	12	NONE	NA	30	LTS4		Bike Facility required unless speeds <10 MPH
Standard Residential Street	13	NONE	NA	30	LTS3	Conventional or Buffered Bicycle Lane, or Protected Bicycle Lane	Shared street okay when speeds are less than 10 MPH. Bike boulevard needed when speeds>10 or ADT>1500
Minor Residential	14	NONE	NA	25	LTS3	Shared street or Bicycle	Shared street is okay

<b>Street</b>						Boulevard	when speeds are less than 10 MPH.
	Draft TSP Information			Interpreted and Estimated Conditions// Recommendations			
<b>Roadway Classification/Name</b>	Exhibit #	Bike Facility Type	Width	Estimated 95 <sup>th</sup> percentile speed	Estimated LTS	Facility Type Required to Achieve LTS1*	Notes
<b>Minor Residential Street – Neighborhood Bikeway</b>	15	NONE	NA	25	LTS3	Shared street or Bicycle Boulevard	Shared street is okay when speeds are less than 10 MPH.
<b>Residential Lane</b>	16	NONE	NA	20	LTS3	Shared street or Bicycle Boulevard	Shared street is okay when speeds are less than 10 MPH.

The draft TSP acknowledges the extent of injury and death posed by the existing bicycle network. “Cyclist collisions resulting in injury make up 97% of all cycling crashes in the City” and cycling crashes leading to the death account for “9% of all fatalities that occurred in Medford over the five year study period.” (source: Draft TSP, Safety Technical Memorandum, Page 9).

The City’s analysis found that bicycle crash locations are distributed widely. “The network screening process... prioritizes City intersections and roadway segments (i.e., sites) based on ... crash frequency, type, and severity” (source: Draft TSP, Safety Technical Memorandum, Page 4). Consequently, only intersections or roadway segments that had multiple crashes were considered during the City’s safety evaluation. While this may appear logical for a crash analysis, the approach ignores all other similarly configured locations where a bicycle crash has yet to occur but is equally dangerous. Often the identified safety solution where bike crashes occurred, is to “construct protected bike lane” (TSP, GIS Data detailing recommended bike improvements). But this “solution” is not only relevant to crash sites but almost everywhere on collector and arterial streets where speeds (currently or are forecast to) exceed 25 MPH or traffic volumes exceed 5,000 vehicles per day. Almost everywhere on the City’s collector and arterial street network fits this description; the draft TSP, Figure 11, identifies many of these locations. But the City only provides that these “will be considered when improving or retrofitting roadways.” (draft TSP, page 34). Thus the City has not made a remedy given the requirements of OAR 660-12-0045(3)(d). Also troubling is that the City response is predicated on “improving or retrofitting roadways” which are almost always initiated because of motor vehicle demand deficiencies, not bicycle safety.

Crash data analysis in TSP’s or corridor plans often includes an system-wide evaluation in order to provide an understanding of the relative risk of a crash. Table 4-1 sets forth the relevant factors that are needed to undertake such an analysis. Using this approach, it is clear that people riding bicycles are more than four times more likely to be involved in a crash than motor vehicle drivers for every mile traveled.

Table 3-1  
**Crashes by Mode per Million Miles of Travel**

Mode	Mode Share	Crashes (2015)	Percent of Total Crashes	Daily per Capita Mileage *	Medford 2015 Population **	Estimated VMT	Crashes per 100,000,000 Miles of Travel
Bike	1.00%	37	2.7%	0.16	77,655	4,535,052	816
Ped	6.00%	36	2.7%	NA	NA	NA	NA
Auto	90.00%	1,285	94.6%	23.1	77,655	654,748,133	196
Transit	3.00%	NA	NA	NA	NA	NA	NA
Total	100.00%	1,358					

\* Source: Strategic Assessment of Transportation and Land Use Plan, RVMPO, February 2016

Table 4. Summary of RSPM Outputs, Adopted Plans Analysis, Page 19

\*\* Source: PSU estimate for 2015 - <https://www.pdx.edu/prc/population-reports-estimates>

Yet, the City’s TSP does not include a specific commitment to make the bicycle system safe. That is in contrast with the motor vehicle system which is largely safe with notable exceptions. The street network poses safety problems for automobile drivers where they are most frequently concentrated at high volume intersections (where the risk of serious injury or death are lower – due to relatively low speeds). In

contrast, the safety problems of the existing bicycle network are endemic and, as the TSP's review of accident data show, 97% of all cycling crashes result in injury. There aren't any on-street bicycle facilities in the City that are safe for everyone (LTS 1).

The Plan should include a specific strategy and provide funding to ensure that by 2038 all bicycle facilities in the City:

“(A) Are reasonably free from hazards, particularly types or levels of automobile traffic which would interfere with or discourage pedestrian or cycle travel for short trips;

“(B) Provide a reasonably direct route of travel between destinations such as between a transit stop and a store; and

“(C) Meet travel needs of cyclists and pedestrians considering destination and length of trip.”  
(source OAR 660-12-0045(3)(d))

The TPR has required this outcome since 1991. Achieving it, over the course of what will be almost 50 years (at the end of the draft TSP's planning horizon), should be assured but the draft TSP falls woefully short and fails even to ensure that the bicycle system will be “safe and convenient.”

**Conclusion 3a:** The City has failed to achieve the requirements of the OAR 660-12-0045(3)(d)) and has, inadvertently but systematically, created a bicycle network that is unsafe, and largely unusable by Medford residents. The draft plan fails to acknowledge that fact nor attempt to remedy that failure.

**Conclusion 3b:** The draft TSP does not include specific strategies, designs or adequate funding to ensure that the bicycle network conforms to the requirements of OAR 660-12-0045(3) by 2038, the end of the draft TSP's planning horizon.

**Conclusion 3c:** The draft plan fails to credibly advance the Purpose of OAR 660-12-0000 and its many related specific requirements, in particular, ensuring the safety of people who ride a bicycle.

#### **Failure 4**

The draft TSP, based upon the listing of Tier 1 and Tier 2 projects will not, taken together with the existing bicycle transportation network's safety defects (see Introduction, Figure 1), fulfill the purpose of the TPR (OAR 660-12-0000). Further, the resulting network will not ensure reasonably direct route(s) of travel between destinations for people using bikes (660-12-0045(3)(d)(B)).

The existing TSP as well as the draft TSP's proposed network of bicycle facilities will also fail to provide a safe and efficient bicycle network, adequate to achieve the requirements of 660-12-0045(3)(d)(B). As is, the Bear Creek Greenway (BCGW) is one of only a few facilities in the City that are reasonably safe for “all ages and abilities.” But, due to poor accessibility, gaining access to the BCGW does not achieve “reasonably direct routes of travel between residential neighborhoods” and “destination for people using bikes.” Currently, there are not enough City streets, nor are there enough proposed, that would create a network of safe and efficient bicycle facilities to satisfy 660-12-0045(3)(d)(B).

The BCGW, itself, serves few destinations. It parallels Bear Creek and the Interstate 5 from the north to the south end of the City. Relatively speaking, few destinations lie along its route. No public schools, city or county buildings, banks, restaurants, major employers, etc are adjacent to the BCGW.

**Conclusion 4a:** The draft TSP bicycle transportation network will not be “safe and convenient” and will not provide “reasonably direct routes of travel between residential neighborhoods and “destination for people using bikes.” In fact, the proposed network will include entire areas of the City that will be unsuitable for most bicycle travel by most city residents. The draft TSP does not satisfy the requirements of 660-12-0045(3)(d)(B).

#### **Failure 5**

The draft TSP will not “meet travel needs of cyclists ... considering destination and length of trip.” (OAR 660-12-0045(3)(d)(C))

The discussion and facts included in “Failure 5” and, in particular, the gaps identified in the future bicycle network, all but assure that the bicycle network will not serve the travel needs of cyclists. There are too many gaps, too few facilities, and too few routes that provide connections between residential areas and city destinations which would be “safe and convenient.”

The City has proposed, as a part of the draft TSP, “neighborhood” bikeways. These could serve to provide “safe and convenient” travel by bicycle to meet the travel needs within and among residential neighborhoods and provide connections to other bike facilities on higher order streets. The latter are essential to provide for the needs of longer bicycle trips between home and work, school, shopping, etc.

Unfortunately, the draft TSP design for “neighborhood bikeways” does not conform to “all ages and abilities” NACTO safety measures. These measures limit motor vehicle speeds to 20 MPH or less, and provide traffic management to ensure that traffic volumes are less than 1,500 average daily traffic (ADT). Without these traffic management controls the streets will not serve “all ages and abilities” or the bicycle travel needs of residents living nearby.

The draft TSP makes the statement, without citation, that “typical volumes and speeds on Standard Residential streets are low enough to accommodate shared use of travel lanes between bicyclists and motorists.” (Draft TSP, page 65) Standard Residential streets have volumes in the neighborhood of 2,500 vehicles with posted speeds of 25 MPH but actual speeds typically approach or exceed 30 MPH. Streets with these volumes and speeds require, at a minimum, a traditional bike lane to ensure that everyone can use them safely. Lowering the speed limit on residential streets to 20 MPH, which is permitted by ORS 810.180, would reduce the risk of injury to both pedestrians and cyclists using these streets, improve the quality of neighborhoods, and where volumes are less than 1,500 ADT, serve as “neighborhood bikeways.” On residential streets with higher volumes, traffic management can be employed to reduce volumes to levels suitable for shared use.

**Conclusion 5a:** The City’s determination of which streets can be shared-use are arbitrary and not based upon current standards. Therefore, the potential for these roads to serve in that capacity and, ultimately, to help meet the travel needs of people riding bicycles is overstated. The draft TSP should rely upon the current research as described in the NACTO, Designing for All Ages and Abilities and NACTO’s bicycle facility design standards.

**Conclusion 5b:** Several of the City’s “activity centers” (see draft TSP, Figure 7) will be poorly served or not served with “safe and convenient” bicycle facilities, thus frustrating their very purpose; to foster a more transportation- efficient land use pattern. Consequently, the bicycle travel needs of people living in these areas will be unmet, and the City’s reliance upon “activity centers” to the meet the TPR’s purpose (and Alternative Measures) will not be realized..

**Conclusion 5c:** The draft TSP proposed future transportation network and associated cross-section designs, taken together, will not meet the travel needs of bicyclists considering destination and length of trip” a requirement of OAR 660-12-0045(3)(d)(C).

### **Failure 6**

The failure to detail bicycle transportation projects in the project list makes it impossible to evaluate whether the proposed projects will contribute to “meet(ing) the standards and benchmarks established pursuant to 0035(4)–(6).” OAR 660-12-0040(2)(d)) (see also failure 9).

Simply referring to “bike facilities” as is done in “Needed Roadway Projects, pages 70 – 77, without specifying the type of bike facility is too vague for the listing to serve its intended purpose. It is impossible to 1) evaluate whether the project warrants funding, 2) determine whether it will actually result in “safe and convenient” bicycle facilities, and 3) assess if it will contribute to meeting the standards and benchmarks developed pursuant to 660-12-0035(4)–(6).

**Conclusion 6a:** The draft TSP does the detail required under OAR 660-12-0035(4) – (6) in the “needed roadway projects” listing to determine the merit of individual projects or the degree to which each project conforms to the requirements of the TPR in particular OAR 660-12-0035(3)(d).

### **Failure 7**

The draft TSP “legacy street policy” effectively grants the City permission to ignore the requirements of the TPR related to alternative modes on most existing streets under its jurisdiction. Such a policy would undermine the purpose of the TPR and ORS 660-12-0045.

The draft plan states “Existing improved (with curb and gutter) roads that do not meet these cross-section standards are considered Legacy Streets.” (draft TSP, page 54) This designation includes almost every street within the City. The “legacy street policy” would allow the City to continue to build and require right-of-way dedication for motor vehicles lanes while limiting or precluding the same for bicycle needs.

The policy provides that where the right-of-way is constrained the “cross section is (will be) modified to provide for all modes by narrowing elements within the design.” (draft TSP, Table 4, page 69). Historically, that has meant the City has constructed substandard and dangerous bike lanes while maintaining motor vehicle lane width standards. The legacy street policy will formalize and perpetuate this outcome.

The policy will significantly undermine the potential for existing streets to be improved to meet the travel needs of people riding bicycles. As such, the legacy street policy is contrary to “the purposes of” OAR 660-12-0045) which “are to provide for safe and convenient pedestrian, bicycle and vehicular circulation

consistent with access management standards and the function of affected streets, to ensure that new development provides on-site streets and access-ways that provide reasonably direct routes for pedestrian and bicycle travel in areas where pedestrian and bicycle travel is likely if connections are provided, and which avoids wherever possible levels of automobile traffic which might interfere with or discourage pedestrian or bicycle travel.”

**Conclusion 7a:** The draft TSP legacy street policy undermines the objectives of the TPR to reduce reliance upon motor vehicle travel, and to promote and encourage the use of alternative transportation modes.

**Conclusion 7b:** The legacy street policy, by limiting development of bike facilities on existing streets, conflicts with the requirements of OAR 660-12-0045.

### **Failure 8**

The City’s inventory of bicycle facilities does not conform to the requirements of OAR 660-12-0020(3)(d).

The inventory of bike lanes is not accurate. Overly narrow bicycle facilities were classified as “bike lanes” when they are too narrow to warrant the description. The lack of an accurate bike facilities inventory and the City’s practice of constructing too narrow of bike lanes has compromised the accuracy of the “level of traffic stress” (LTS) analysis undertaken by the City.

According to ODOT, Transportation Planning Analysis Unit, 6/11/18 email from Peter L. Schuytema, P.E., this analysis method “generally assume(s) that design elements are within standards. For bike lane(s), that is four feet. Anything less than 4’ is too narrow to have any separation from motor vehicle traffic and shouldn’t be classified as a bike lane. Your example looks to be around 3’ assuming full use of the gutter. I would call it more of a wide outside shoulder /shared lane condition and shouldn’t be marked as a bike lane. Under LTS, I would use the mixed traffic conditions instead for these cases as the bicyclist is riding on the line or even over it, so there will be the same type of interference. Using the mixed traffic criteria will give a worse LTS than a proper width bike lane.”

Bike lanes less than four feet “shouldn’t be classified as (a) bike lane” (ibid). Consequently, the City’s existing bike inventory (draft TSP, Figure 9) is not accurate. The draft TSP does not include any description of the LTS methodology but it likely relied upon the flawed inventory.

There is seemingly no inventory of the condition of the Bear Creek Greenway, its capacity or condition. That has led to the draft plan not evaluating the need for a wider or separate paths for bicyclists and pedestrians through the central part of the City. Here, there are already conflicts between pedestrians, people sitting on or next to the path, and cyclists.

**Conclusion 8a:** The draft TSP does not contain an accurate inventory of existing bicycle facilities required by OAR 660-12-0020(3)(d) which requires “an inventory and general assessment of existing and committed transportation facilities and services by function, type, capacity and condition.”

**Conclusion 8b:** The lack of an inventory has led to the draft plan not addressing existing capacity issues on the Bear Creek Greenway in the central part of the City.

### **Failure 9**

OAR 660-012-0020(3)(b) requires the City's TSP to include a "system of planned transportation facilities, services and major improvements. The system shall include a description of the type or functional classification of planned facilities and services and their planned capacities and performance standards."

Table 19 of the draft TSP includes project "P2" which is described as (improvements at) "various bicycle network gap locations with focus on high-priority areas including schools, activity centers and essential destinations, transit routes, and transit oriented development areas." The project is described as "evaluate and construct potential roadway reconfigurations to accommodate bicycle facilities through re-striping and/or minor reconstruction at high-priority locations (\$100,000 annually)."

These locations are apparently known, or would be expected to be known, through the City's review of its bicycle network and the draft TSP's LTS analysis. The draft TSP, however and for purposes of project P2, fails to disclose their location. Absent this information, it is impossible for the public to evaluate the merits of the project or evaluate whether the project, in fact, includes high priority locations. P2 is the only Tier 1 bicycle project. Given the widespread safety defects of the existing bike lane network this project is woefully underfunded and too vague.

**Conclusion 9a:** The draft TSP's failure to include a "description of the type" of improvements planned, the standards that will be used, their planned capacity and their location is inconsistent with the requirements of OAR660-12-0020(3)(b).

### **Failure 10**

The City draft TSP, in establishing street cross-sections which do not meet the travel needs of bicyclists of "all ages and abilities, is inconsistent with the Oregon constitution and ORS 659A.006.

The City concludes in a November 20, 2017 memo entitled Transportation System Plan – Bicycle and Pedestrian Level of Traffic Stress (described by the City as a Technical Memorandum) "when considering LTS for policy implementation, achieving a LTS 2 is the most realistic standard..." The statement suggests that the City will rely upon Level of Traffic Stress (LTS) 2 as the standard for street upgrades and new construction. Such an approach is inconsistent with the objectives of the Transportation Planning Rule (TPR) which requires a "safe and convenient," well-connected network. The draft plan provides no discussion about who would be excluded, by virtue of street design, from using the resulting bicycle network.

The Oregon Department of Transportation, Analysis Procedure Version 2, Multi-modal Analysis ([https://www.oregon.gov/ODOT/Planning/Documents/APMv2\\_Ch14.pdf](https://www.oregon.gov/ODOT/Planning/Documents/APMv2_Ch14.pdf) , page 14-11) acknowledges that LTS 2 is suitable for "teen and adult cyclists with adequate bike handling skills." Consequently, people with lower bike handling skills, people with reduced reaction time, people with diminished hearing, people with disabilities, families with multi-generational cyclists, would find LTS 2 facilities "unsuitable." In this context, unsuitable facilities means unsafe, dangerous, not worth the risk, etc.

A rough estimate of the number of Medford residents who could safely use the bicycle network at different LTS levels is detailed in Table 2-1. Setting LTS2 as the "realistic standard" has the effect of

excluding 22,207 or 27 percent of the City’s residents from using a bike (51,137 - 28,930). That number excludes those City residents who would “never ride a bike.” (see Summary of Medford Transportation Survey, City of Medford, August 2017, question 17)

Table 10-1

Estimated Population that would Ride a Bike for Transportation  
By Level of Transportation Stress (LTS)

Age	Est. Pop Total *	LTS 4	LTS 3	LTS 2	LTS 1
Under 5	5,878	0	0	0	0
6- 17	19,674				13,280
18-64	42,859	429	3,214	28,930	28,930
65 plus	13,225				8,927
Total	81,636	429	3,214	28,930	51,137

\* 2010 US Census of Population

OAR 659.006, **Declaration of policy against unlawful discrimination**, states:

“(1) It is declared to be the public policy of Oregon that practices of unlawful discrimination against any of its inhabitants because of race, color, religion, sex, sexual orientation, national origin, marital status, age, disability or familial status are a matter of state concern and that this discrimination not only threatens the rights and privileges of its inhabitants but menaces the institutions and foundation of a free democratic state. (2) The opportunity to obtain employment or housing or to use and enjoy places of public accommodation without unlawful discrimination because of race, color, religion, sex, sexual orientation, national origin, marital status, age or disability hereby is recognized as and declared to be a civil right. A place of public accommodation is defined by 659A.400 as follows: (a) Any place or service offering to the public accommodations, advantages, facilities or privileges whether in the nature of goods, services, lodgings, amusements, transportation or otherwise. (b) Any place that is open to the public and owned or maintained by a public body, as defined in ORS 174.109, regardless of whether the place is commercial in nature. (c) Any service to the public that is provided by a public body, as defined in ORS 174.109, regardless of whether the service is commercial in nature.”

**Conclusion 10a:** The City’s use of LTS 2 as a basis for its bicycle transportation facilities designs discriminates against those people who may have lower bike handling skills, are old, are younger than a teen, people having a physically limiting condition, and groups of people composed of multi-generational bicycle riders (i.e. families).

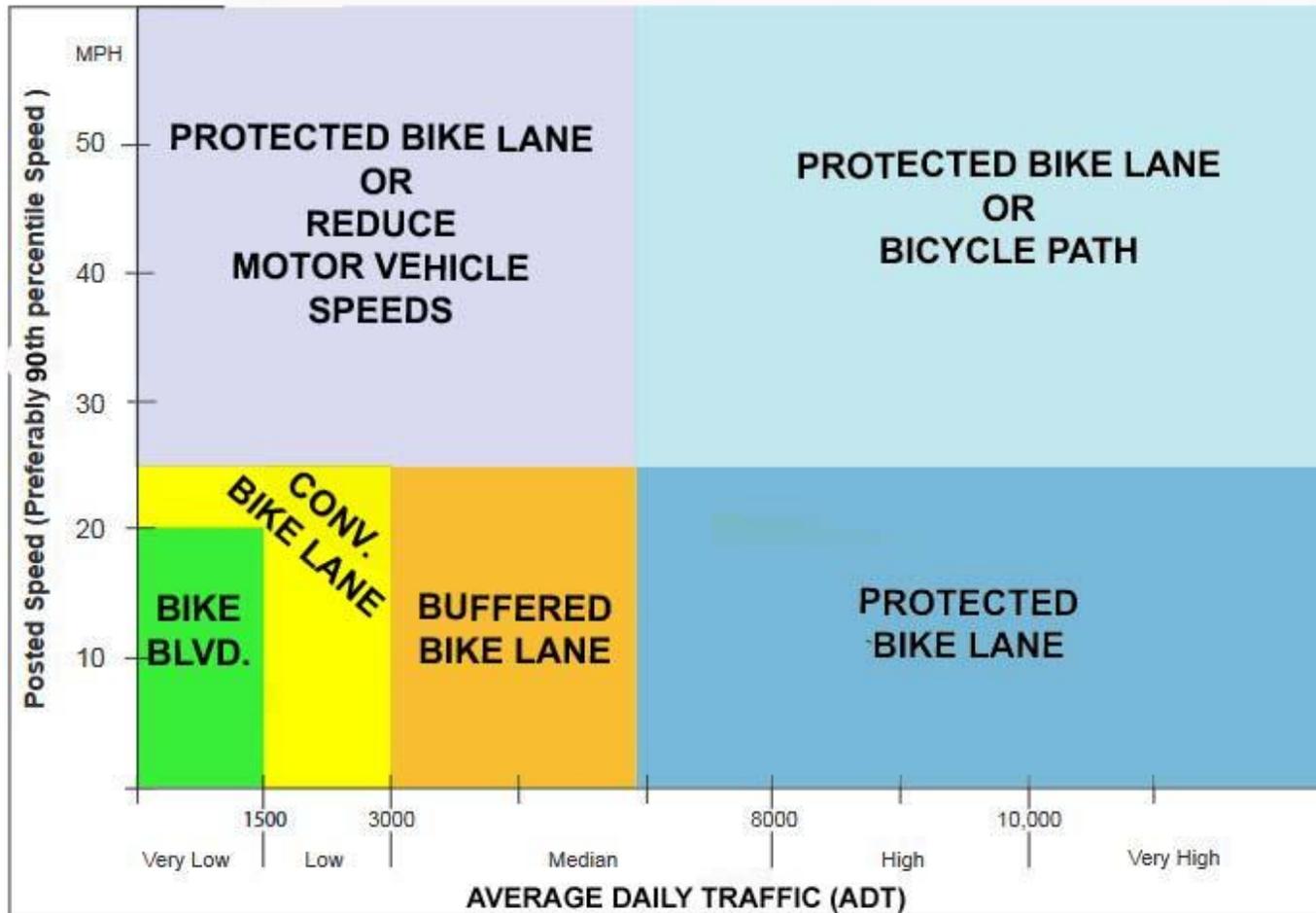
**Conclusion 10b:** The Plan’s approach to bicycle transportation (by setting LTS 2) fails to serve all ages and abilities of people; including people who 1) now ride only on the Bear Creek Greenway, 2) limit their bicycling to their own residential neighborhood, 3) ride a bike but only for recreational purposes on the weekend, 4) are afraid to ride a bicycle on City streets, or 5) may want to “drive” a bicycle in the future.

**Conclusion 10c:** The use of LTS 2 is inconsistent with Object 11 of the draft TSP which reads: “The City of Medford will strive to develop and maintain a well-connected transportation system for all modes and users.” (emphasis added).

Exhibit 1

# NACTO

## Contextual Guidance for Selecting All Ages & Abilities Bikeways



# Portland's Safe and Convenient Bicycle Facility Network

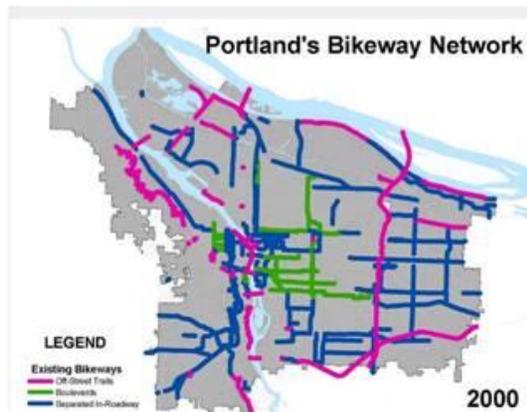
## LEGEND

### Existing Bikeways

- Off-Street Trails
- Boulevards
- Separated In-Roadway



Bicycle Mode Share: 1.0 percent



Bicycle Mode Share: 1.8 percent



Bicycle Mode Share: 6.1 percent

## Exhibit 3

### Change in Demand with Safe and Convenient Bike Facilities (before and after experience)

US Cities are highlighted. It should be noted that there is no indication of the extent of the connecting bike network associated with the protected bike lanes cited below. If they are isolated and do not connect to an "all ages and abilities" network the impact on bike ridership can be diminished. It is like building a freeway without on-ramps. No one can use it.

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In 2007, the city of Seville, Spain, rapidly connected a network of protected bike lanes. They grew the bike network from 7.5 miles of protected bike lanes in 2006 to 94 miles in 2013. During the same time period the number of bike trips grew 435 percent from 3 million in 2006 to more than 16 million in 2013. At the same time, the risk of being involved in a crash with a motor vehicle dropped 61 percent.

*R. Marqués and V. Hernández-Herrador - On the effect of networks of cycle-tracks on the risk of cycling: The case of Seville*

38 percent of people biking on Sherbourne Street in Toronto switched to biking for that trip after Sherbourne got a protected bike lane. Of those, 24 percent switched from driving. People taking longer trips and people over age 40 were more likely to make a car-to-bike switch.

*Raymond Ziemba, Raktim Mitra, Paul M. Hess - Mode Substitution Effect of Urban Cycle Tracks: Case Study of a Downtown Street in Toronto, Canada*

On Washington DC's first protected bike lanes, bike traffic has been growing seven times faster than the citywide rate.

*District Department of Transportation, 2009-2013 - How high can they go? DC bike counts show continuing surge in protected lane use*

In Seville, an 80-mile network of protected bike lanes boosted biking from 0.6 percent to 7 percent of trips in six years.

*London Cycling Campaign, 2012 - Cycling increased tenfold in Seville after construction of miles of bike tracks.*

In Hangzhou, China, where 84 percent of main and secondary roads separate bikes from cars, 44 percent of middle school parents who own cars (and 62 percent of those who don't) ride a bike at least once a week.

*Lusk et al, 2014 - Gender and used/preferred differences of bicycle routes, parking, intersection signals, and bicycle type: Professional middle class preferences in Hangzhou, China. Journal of Transport & Health."*

In the two U.S. cities that first started building modern protected bike lanes, New York and Washington D.C., bike commuting doubled from 2008 to 2013.

*US Census - NYC and DC, protected lane pioneers, just doubled biking rates in 4 years*

The average protected bike lane sees bike counts increase 75 percent in its first year alone.

*Monsere, C., et al., 2014 - Lessons from the Green Lanes (National Institute for Transportation and Communities)*

Intersections in Montreal with protected bike lanes saw 61 percent more bike traffic than comparable intersections with no bike infrastructure.

*The Journal of Transport and Land Use, 2013 - [Spatial modeling of bicycling activity at signalized intersections](#)*

On D.C.'s Pennsylvania Avenue protected bike lane, bicycle volumes increased 200 percent after the facilities were installed.

*District Department of Transportation, 2012 - [District Department of Transportation Bicycle Facility Evaluation](#)*

NYC's Prospect Park West protected bike lane saw a 190 percent increase in weekday ridership.

*NYC DOT, 2012 - [Prospect Park West: Traffic Calming & Bicycle Path](#)*

After a protected bike lane was installed on Chicago's Kinzie Street: Bicycle ridership on increased 55 percent, according to morning rush hour counts; Forty-one percent of respondents changed their usual route to take advantage of the new lane; Bicyclists accounted for a majority of all eastbound traffic (53 percent) and more than one third (34 percent) of total street traffic during a CDOT traffic count conducted during morning rush hour in August 2011.

*Chicago DOT, 2011 - [Initial Findings: Kinzie Street Protected Bike Lane](#)*

After buffered bike lanes were installed on Philadelphia's Spruce and Pine streets, bike traffic increased 95 percent and the number of people biking on the sidewalks fell 22 percent.

*Bicycle Coalition of Greater Philadelphia, 2009 - [Bicycle usage up 95% on Spruce and Pine bike lanes](#)"*

From 2006-2011, bicycling in San Francisco increased 71 percent. From 2010-2011, it increased 7 percent, making up 3.5 percent of all trips in the city. The greatest growth in bicycling came on Market Street, which has protected bike lanes. On Market Street, bicycling increased 115 percent from 2006, and 43 percent from 2010.

*San Francisco Municipal Transportation Agency, 2012 - [2011 Bicycle Count Report](#)*

After New York City installed a protected bike lane on Columbus Avenue, bicycling increased 56 percent on weekdays, crashes decreased 34 percent, speeding decreased, sidewalk riding decreased, traffic flow remained similar, and commercial loading hours/space increased 475 percent.

*New York City Department of Transportation, 2011 - [Columbus Avenue parking-protected bicycle path preliminary assessment](#)*

**Source: <http://peopleforbikes.org/our-work/statistics/statistics-category/?cat=protected-bike-lane-statistics>**