

# Level of Traffic Stress at WSDOT

A key goal for WSDOT Complete Streets projects is to provide walking and bicycling facilities along the road that are “Level of Traffic Stress (LTS) 2 or better.” This allows WSDOT to have a consistent standard for project design outcomes while enabling designs to be responsive to each specific location. What does this actually mean for you?

## LTS: Level of Traffic Stress

Imagine taking a walk with a toddler. Can you walk comfortably along the road? You’d probably want space between you and people driving, a wide sidewalk, and car drivers going slow enough to notice you are there. These factors influence the Level of Traffic Stress (LTS) you might experience when walking or biking along a road.

Level of Traffic Stress (LTS) started as a national research framework to classify bicycle networks. It was adopted by WSDOT in the 2020 Active Transportation Plan as a consistent way to assess roadway conditions for people walking and bicycling. Roads are scored separately for people walking (Pedestrian LTS, or PLTS) and people biking (Bicycle LTS, or BLTS). The scores go from 1 (lowest level of stress, generally suitable for people of all ages and abilities to use) to 4 (highest level of stress, will be used only out of necessity). Each LTS score can be achieved with different combinations of roadway features.

Facilities for walking, biking, and rolling need to feel comfortable for people to want to use them. The best way to do that is with space, separation, and visibility. But every road is different, so how do we know how much space, separation, and visibility is needed?

Level of Traffic Stress	Description
1	Suitable for everyone; children could walk or bike here independently.
2	Comfortable for most adults.
3	Tolerable for enthusiastic and/or confident adults.
4	Only used by highly confident people, or those with no choice.

## How do we determine LTS?

LTS considers several data sets that contribute to comfortable facilities, safer roads and safer speeds. A roadway with a combination of the following characteristics will have a higher LTS for people walking and bicycling:

- High traffic volumes
- High vehicle speeds
- Multiple vehicle travel lanes
- No or very narrow walking or bicycling facilities
- Walking or bicycling facilities not separated from vehicle lanes



Roads like this are common in Washington, and have an LTS of 4.



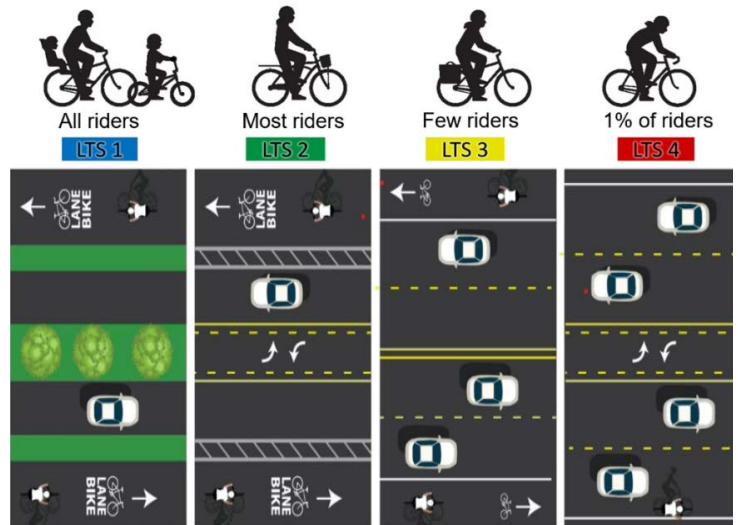
An example roadway with LTS2 for pedestrians and bicyclists.

## Creating Low Stress Roads

There are many ways to create a comfortable environment for people walking, rolling, and biking. Some of the best methods are:

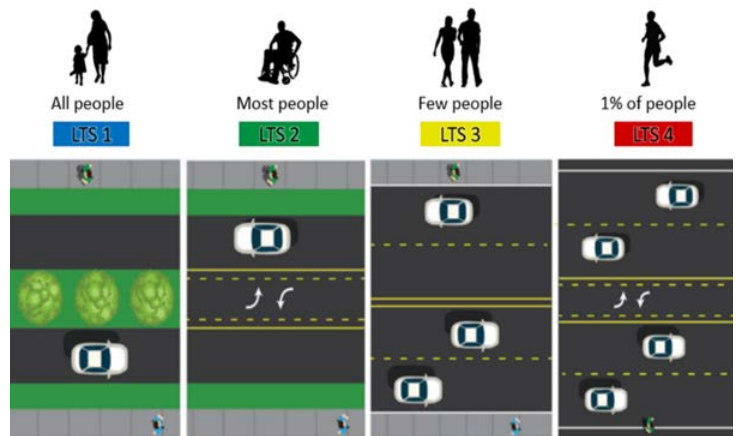
- Designing roads to encourage drivers to drive more slowly
- Providing dedicated infrastructure and separation for people walking, rolling, and biking

The scale of separation needed to achieve an LTS goal is proportional to the speed, size, and vehicle volumes of a roadway. A busy, 6-lane arterial road may need bike lanes separated by vertical barriers and a wider sidewalk. A low-speed, 2-lane road with few vehicles may not need bike lanes at all.



## How to Read an LTS Table

LTS is scored in a series of tables in WSDOT's Design Manual that relate existing or planned road conditions to a given walking (Chapter 1510) or bicycling (Chapter 1520) treatment and produce a score. These tables answer questions like "If we have a 5 foot sidewalk on a road with 4 lanes, a 25 miles per hour (MPH) speed limit, and a 2000 average annual daily traffic (AADT) count, then what is the Pedestrian Level of Traffic Stress?" Below is an example table, with high PLTS in red and low PLTS in green with an arrow pointing to the answer of PLTS2 for this example.



**Exhibit 1510-2 Pedestrian Level of Traffic Stress (PLTS) based on Sidewalk Width**

5' to 7.5' Sidewalk with no buffer								
Lane configuration	AADT (total)	Target speed						
		≤20	25	30	35	40	45	50+
1 thru lane per direction (or 1 lane one-way street)	0 -750	1	1	2	3	4	4	4
	751 - 1500	1	1	2	3	4	4	4
	1501 - 3000	1	1	2	3	4	4	4
	> 3000	2	2	2	3	4	4	4
2 thru lanes per direction	0 - 6000	2	2	2	3	4	4	4
	> 6000	2	2	3	4	4	4	4
3+ thru lanes per direction	Any ADT	2	2	3	4	4	4	4



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