

Neighborhood Traffic Fact Sheet

DRAFT September 6, 2017

1. Introduction

The purpose of this document is to provide an overview of the issues and policies regarding traffic management in Oregon City. It is meant to explain the various restrictions and requirements that exist regarding the larger issues of traffic flow and management. It, also, outlines procedures for citizens to become involved in traffic control measures in their neighborhood.

There are many factors taken into consideration when reviewing traffic concerns. Any recommended solutions must consider the effect on the surrounding roadways, property access, traffic makeup, speeds and volume. Additional concerns are accident history, property usage, budget restraints, and future planned construction in the area.

The State of Oregon has authorized the various counties and cities in the state to be the local road authority for the roads within their jurisdictions. This jurisdictional authority provides the local municipality both the right and the responsibility to make traffic management decisions. Any decisions made by such an authority must be in compliance with any pertinent state and federal standards and must utilize sound engineering judgement. Despite the designation as the Local Road Authority both Clackamas County and Oregon State owned and maintained roadways exist within the city limits. Both the State and the County maintain and manage their respective roads in coordination with the City.

In order to be eligible to receive federal funding for roadways, the federal government requires that each state adopt a national traffic signing code known as the Manual on Uniform Traffic Control Devices (MUTCD). This document provides guidance on various traffic control topics such as: approved traffic control devices, sign standards, road striping patterns, and temporary traffic control standards. These topics are all prescribed by the Federal Highway Administration (FHWA) in order to present a uniform standard throughout the country. The Oregon Department of Transportation has also created and adopted an Oregon Supplement to the MUTCD that defines additional standards unique to the State of Oregon. The conditions for usage of many of these standards are referred to as Warrants. That is to say there are conditions that WARRANT the use of these devices. If these conditions are not present, then the use of these devices is not warranted and the installation is not to be recommended.

2. Modes of Transportation

The various modes of transportation that municipalities must account for within their Transportation System Plans (TSP) include vehicular, public transportation, pedestrian, bicycle, and freight transportation. By making other methods of movement available, safer and more reliable, vehicle traffic can be lessened. The three primary components to "traffic" that we are concerned with are volume, speed and vehicle class. Volume of vehicles refers to the number of vehicles present at a location(s) at a fixed period of time. Volume can fluctuate at the same location throughout the day. Speed refers to the rate at which vehicles

travel along a corridor throughout the day. Vehicle class refers to the type of vehicles utilizing the transportation system. These can range from a bicycle, to a privately owned two axle cars and Trucks. Freight transportation covers commercial vehicle movement, business supply service vehicles and home delivery vehicles.

When attempting to quantify the number of vehicles utilizing a road section, transportation planners and engineers typically refer to the Average Daily Trips (ADT) associated with a road segment. The ADT is the average number of vehicles passing a specific point in both directions in a 24-hour period, normally measured throughout a year. This data can further be refined to unique locations to provide seasonal variability and even peak day/hour demand.

The City has over 151 miles of sidewalks to accommodate pedestrian traffic, which includes wheelchair and other handicap devices. There are portions of the city, typically the older portions, which were constructed prior to the OCMC requiring the construction of adjacent sidewalks. New sidewalk installations are typically conditioned on the adjacent property owner to install as development occurs within the area. The PWD has a sidewalk infill program to attempt to connect sections of sidewalk that are needed. Some streets within the city do not readily facilitate sidewalks due to the availability of adjacent right of way (ROW), topography and drainage needs.

The City currently has over 42 miles of bicycle lanes and the demand for increased connectivity of bike lanes is high. Where striped bike lanes do not exist the PWD utilize shared lane markings or “sharrows” where possible.

Public transportation is generally regarded as bus service with Tri-Met providing this primary service within the city. However, taxi service, mini-bus service provided by the Pioneer Center also fall into this category.

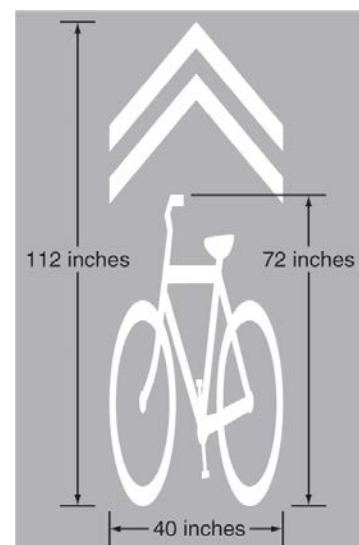
3. Street Classifications

Major and Minor Arterial

These streets are meant to carry large traffic volumes and provide service between and into commercial and industrial areas. They may also serve as residential through streets. Typically, this type of road would carry State Highways, major County Roads, and large volumes of commercial and freight traffic. Bus lines would use these streets. These streets generally have centerlines, marked bicycle lanes and both marked and unmarked crosswalks. Molalla Avenue and portions of Beavercreek Road are representative examples of major arterials. South End Road and Linn Avenue are representative examples of minor arterials.

Collector

These streets are meant to carry lesser traffic volumes than arterial streets but more than residential streets. They are meant to carry moderate to large traffic volumes and provide service between and into commercial and industrial areas. They may also serve as residential through streets. Bus lines would use these streets. These streets generally have centerlines, marked bicycle lanes and both



marked and unmarked crosswalks. Center Street and Central Point Road are both examples of collector roads. **Add in volume distinctions.**

Residential

Residential streets are meant to provide vehicular access to residential properties. They are meant to carry low volumes of light weight vehicles. Bus lines would generally NOT use these streets, but may be used for access to public places such as parks or other public use facilities. Some commercial and industrial use may utilize these streets. Typically these streets do not have painted center lines, striped marked crosswalks, signage other than street signs, stop or yield signs, and possible restricted parking signage.

4 Speed Zones

All the roads and streets in the city, and, indeed the State, are covered with various Speed Zones. Because there is a posted speed sign, it does not mean that the posted speed is a safe speed everywhere in the zone. The Basic Rule (ORS 811.100) still applies to individual locations within the zone, which may require lower speeds to safely pass through.

Basic Rule (ORS 811.100, Violation of Basic Speed Rule; Penalty)

The Basic Rule is a long established principle that states that a vehicle must not travel FASTER than safety allows. This means that the driver is responsible for the safe operation of the vehicle and must be aware of road and weather conditions, the condition of his vehicle, and all roadside conditions. The safe speed is never faster than the posted speed.

Statutory Speed Zones

Statutory Speed zones are zones that the State allows the City to establish without having a speed study done. The adjacent topography and road conditions must match the requirements in ORS. These speeds are 20 MPH in school zones, 25 mph on residential streets and 55 mph in rural areas. All other speed zones require a speed study to be done to ODOT standards and approved by the State Speed Zone Board.

Non-Statutory Speed Zones

These speed zones require that a speed study be done and accepted by the State Speed Zone Board to establish or change maximum allowable speeds. No new speed limit signage can be placed prior to receiving this approval. An example of a non-statutory speed zone is Central Point Road where speed limits range from 35-45mph.

The state approved speed is generally the 85th percentile observed when traffic is allowed to flow freely through the studied stretch of roadway. To encourage compliance and effectively manage risk, many agencies set speed limits to reflect the "reasonable and prudent" behavior of the majority of motorists acting in an appropriate manner. This encourages drivers to obey the posted speed limit and travel at a reasonable speed. It also targets limited enforcement resources at the occasional violator who disproportionately contributes to crash risk. The concept of a rational speed limit involves a formal engineering review, during which drivers' speeds are observed. The assumption is that by reflecting actual driver speeds, most people will consider the speed limit appropriate. Such speed limits are desirable because they encourage public compliance, reduce speed differences among drivers, and offer a defensible enforcement tool.

Resetting Speed Limits upon annexation

Generally speaking Clackamas County established speed zones are accepted by the City upon annexation. These are then maintained until conditions indicate that a change is desirable.

Speed Zone Evaluation

Periodically, the City receives requests to evaluate and reset speed zones. The process for evaluating and resetting a speed zone requires ODOT to conduct an engineering analysis of the requested zone and determining what the observed 85th Percentile for the road segment is as well as determine what other contributing variables are present to warrant a speed zone change. ODOT then issues a Speed Zone Report in which the local road authority can accept or appeal with justification. The report can recommend to either increase, decrease or maintain the current posted limit.

5. Signage and Signals

Signage and Signals within Oregon City are placed and maintained by Oregon City Public Works. Signs that have been defaced, marred, stolen, hidden by foliage, or otherwise made unusable should be reported to the Public Works Department. Problems with signal installations in Oregon City should be reported to Public Works.

Passive

Passive signage is considered common roadside signs that show speed limits, street names and similar items. Generally, they are pole mounted alongside the road, but can be barricade mounted or overhead mounted for certain situations. Periodically, the City receives request for additional signage along roadways beyond what is currently in place. The addition of new signs within a travel corridor are carefully reviewed based upon existing standards. The addition of a sign in a location to address one issue can result in unwanted consequences that must be evaluated prior to deployment.

Oregon City has a STOP SIGN policy brochure available in the Public Works Street Division section of the official OC web site and is included as Appendix A of this document. This brochure discusses and explains the City's position on using and placing Stop Signs. Information can be found on the City's website here: <https://www.orcity.org/publicworks/stop-sign-brochure>

The City often receives requests from residents for stop signs in order to control speeding. Stop signs may seem like a good solution to neighborhood speeding, but traffic studies and experience have shown that using stop signs to control speeding is not an effective means of calming traffic.

Active

Automated Speed Signs

Oregon City has several stationary automated speed limit signs and two trailer mounted mobile automated speed limit signs. These signs show the posted limit and the speed of approaching cars as measured by a radar gun. A resident can request a radar trailer be placed in their neighborhood through the Radar Trailer Program managed jointly by the Public Works Operations Department and the Police Department. A call to either department will place them on the wait list for

the next available radar trailer to be mounted on their street, in a reasonable location.

Street Markings

Street Markings refer to the striping patterns and advisory markings associated with a road segment. The most common forms of striping used to control motorist and pedestrian behavior patterns are center line markings. Based on the road conditions present within an area, the local road authority can choose a striping pattern to restrict passing from any one or both of the lanes. Other street markings can convey the location of crosswalks, the presence of a dedicated bike lane, or the lack thereof, and the need to share the road with cyclist. School Zones and speed humps are also typically denoted with the use of street markings in conjunction with other advisory signage. These markings and their suitable usage are covered in detail in the MUTCD.

6. Crosswalks

Crosswalks

It is important to note that under ORS 801.220, all intersection corners are crosswalks, whether marked or not. In certain instances the City receives request for mid-block crosswalks from residents. These are locations that are not associated with two roads intersecting and there is no subsequent cross street. In most cases the City discourages the installation of mid-block crosswalks for safety reasons. Instances in which mid-block crosswalks have been approved and installed were preceded by engineering analysis.

7 Traffic Calming

Traffic Calming refers to techniques to affect heavier traffic flows and/or higher speeds in areas where the heavier flow or speed is not safe or desirable. There are many different techniques available but all have positive and negative aspects to their construction and use. Most require a reasonable level of forethought before installation and some require complete engineering studies and construction plans. The following information will outline several of these traffic calming measures:

- Applicability
- Speed
- Cost
- Volume

Complexity and cost will be scored on a relative scale of 1-5 with 5 being the most complex and costly measures.

Items that require more than a minor expenditure must be included in the Street Division's current operating budget. As the City is on a 2-year budget cycle, it could be a matter of several years before funds become available to implement major changes.

Traffic Circles

Applicability: Collectors and Arterials	Speed:
Complexity: 	Cost: \$\$\$\$\$

Traffic circles tend to be smaller than roundabouts and are meant to function at low speeds. As such they are generally placed in locations that will NOT require acquiring additional right of way.

Positive aspects are:

1. Vehicles are forced to move out of a straight line, and thus, reduce speed to make the maneuver.

Roundabouts

Applicability: Collectors and Arterials	Speed:
Complexity: 	Cost: \$\$\$\$\$

Roundabouts tend to be larger than traffic circles and are meant to function with higher volumes of traffic and possibly at higher speeds. They almost always require the purchase of additional right of way to accommodate their size.

Oregon City has two existing roundabouts within the city with more possible in the future. One traffic circle that functions as an intersection is at Highway 213 and Clackamas River Drive. The other is along the Main Street Extension Interstate 205.

Positive aspects are:

1. Vehicles are forced to move out of a straight line, and thus, reduce speed to make the maneuver.

Negative aspects are:

1. Maintenance of the center section can be difficult and careful consideration should be taken in the design process as to what will occupy the center of the circle.
2. In an intersection setting, the roundabout replaces an All Way or 4-way stop or a signal installation, and allows faster transition through the intersection than what is possible with either a multiple way stop or a signal. This improves traffic flow and results in a quicker passage through the intersection.
3. Decreased overall long term maintenance cost.

Negative aspects are:

1. More right of way is required to construct a correctly sized roundabout.
2. Larger and longer vehicles, such as buses, moving vans, fire engines and the like can have a certain amount of difficulty moving through the circle.
3. Pedestrian and bicycle modes of travel can have difficulty moving through the circle.
4. Maintenance of the center section can be difficult and careful consideration should be taken in the design process as to what will occupy the center of the circle.

Sidewalk Extensions or Bumpouts

Applicability: Residential and Collectors	Speed:
Complexity: 	Cost: \$\$\$

Sidewalk extensions are used to narrow the width of the pavement at intersections. In essence, the curb is moved to the outside edge of the vehicle travel lane with the sidewalk extended to the new curb location.

Positive aspects are:

1. The intersection is visually narrowed which tends to slow vehicle speeds through the intersection and areas near the intersection.
2. Pedestrians crossing the street are more visible to vehicle drivers prior to crossing streets and can cross streets quicker due to the shorter distance to be traveled.
3. Fire hydrants located on corners are easier to access due to vehicles forced to park away from the hydrant.

Negative aspects:

1. The curb line is a critical part of the storm drainage system. Due to the street crown, the extension blocks the drainage channel along the curb and additional work is required to provide for the passage of storm water collected along the curb.
2. Street cleaning is made more difficult as street sweeping equipment may not be able to clean through the turns the curb makes to form the extension.

Diversifiers

Applicability: Residential and collectors	Speed:
Complexity: 	Cost: \$\$\$

Diversions are usually diagonal vehicle barriers across intersections, which force vehicles to move to a different street in order to continue moving forward. Provision for non-vehicular traffic movement through the diversion is generally made.

Positive aspects are:

1. Traffic volumes and speeds are reduced as vehicles use alternative routes.
2. Existing street drainage patterns can generally be maintained.

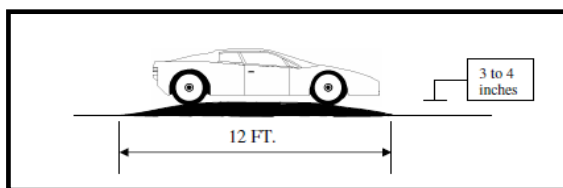
Negative aspects are:

1. Traffic volumes and speeds may be increased on neighboring streets as the traffic establish new routes.
2. Access for emergency vehicles and home service vehicles can be hindered.

Speed Humps

Applicability: Residential	Speed:
Complexity:  	Cost: \$\$

A speed hump is a raised pavement feature constructed across the width of the street. It is usually 3 inches high and at least 12 feet in length from the leading edge to the trailing edge. This feature discourages motorists from speeding and encourages them to obey the posted speed limit. When speed humps are constructed, advisory signs are also installed to notify motorists of the speed hump and an appropriate advisory travel speed. Oregon City has a SPEED HUMP policy brochure available in the Public Works web site and is also attached to the document as Appendix B. This brochure discusses and explains the City's position on using and placing Speed Humps.



Raised sidewalk street crossings are a variation of the more usual form of speed hump.

The installation of speed humps may or may not have a slowing effect on traffic for several reasons:

1. The humps affect different vehicles differently. Some vehicles, (notably Sport Utility Vehicle types) are designed to absorb and soften road shocks at speed to provide a smoother ride to the occupants.
2. The installation requires maintenance to remain visible.
3. Increased speed in most vehicles can negate the effect of the hump.

Positive aspects:

1. Vehicle speeds may be reduced to a level more compatible for a residential environment.
2. The installation does show vehicle drivers that there is or has been a speeding problem in the area and that residents do not feel safe with the vehicles moving at higher speeds through the area.

Negative aspects:

1. Vehicle speeds may not be reduced. In some locations where multiple humps are installed, drivers have adopted the strategy of slowing leading up to cross the bumps and speeding up between humps.
2. Storm drainage may be adversely affected.
3. Street maintenance operations such as street sweeping is affected by the humps.
4. Vehicles other than the target vehicles may be more severely affected. Some studies have shown that emergency vehicles response times can be affected.

Chicanes

Applicability: Collectors	Speed:
Complexity:    	Cost: \$\$\$\$\$

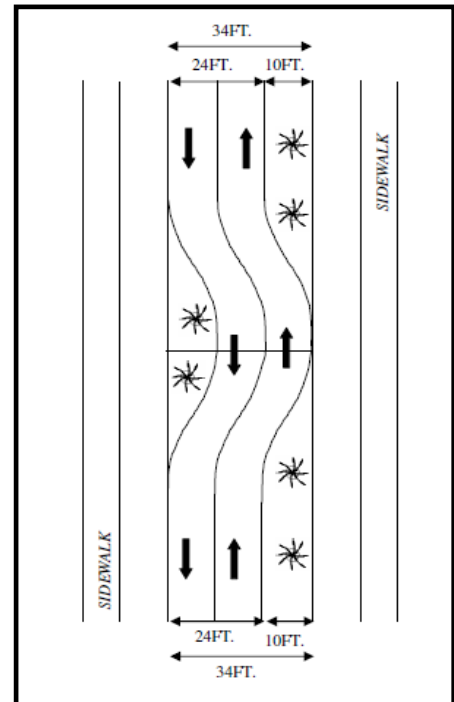
A chicane is a traffic calming measure that reduces the speed of vehicles by altering the vehicle travel path for a section of roadway. This feature changes the physical characteristics of a roadway section from an existing straight alignment to a series of horizontal curves.

Positive aspects are:

1. Vehicle speeds may be reduced to a level more compatible for a residential environment.
2. Increased landscaping along the route

Negative aspects are:

1. Typically requires the elimination of the parking strip or center turn lane in order to accommodate the chicane
2. Storm drainage may be adversely affected.
3. Difficult to implement in areas of high relief or grade variations.
4. Negative affect to cyclists.



Safe Routes to School

Oregon Safe Routes to School helps create safe, convenient, and fun opportunities for children to walk, bike and roll to and from school. More information can be found at their website here: <https://www.oregonsaferoutes.org/>.

Abbreviations and Acronyms:

ADT	Average Daily Trips
FHWA	Federal Highway Administration
MUTCD	Manual on Uniform Traffic Control Devices
OC	Oregon City
OCMC	City Municipal Code
ODOT	Oregon Department of Transportation
ORS	Oregon Revised Statutes
PWD	Public Works Department
ROW	Right of Way
TSP	Transportation System Plan