Lane Count & Directionality

Last Updated: June 1, 2020

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Agenda

- Objective
- Features
  - Lane Directionality
  - One Way Roads
  - Lane Count
  - Lane Forward and Lane Backward Directionality
    - Narrow Road
  - Lane Count Changes
- Summary

Objective

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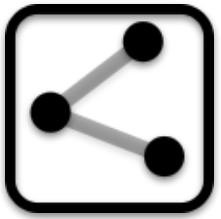
Gain a understanding of how to edit the lane directionality and lane count.

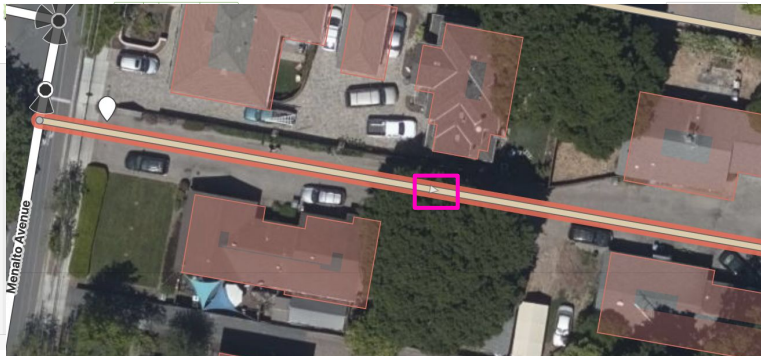
Review Missing Roads training prior to this slide deck.

Lane Direction

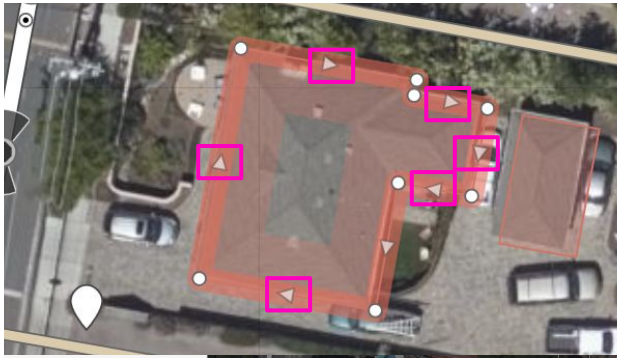
Refresher on Ways



- There are two types of ways, open ways and closed ways
  - Roads are represented as open ways
- Able to change this direction, but typically unnecessary



Above: Open Way has direction from left to right.



Above: Closed way has direction going clockwise. (We do not edit close ways)

What is Direction?

- Every single way has a direction, referring to the direction that it was drawn in
- Way direction is not associated to real world features
- Way direction is often used as a reference

  Example:

  Direction is used for specific lane count

Above: The traffic here goes both ways, but the direction of the way is indicated by the arrow.

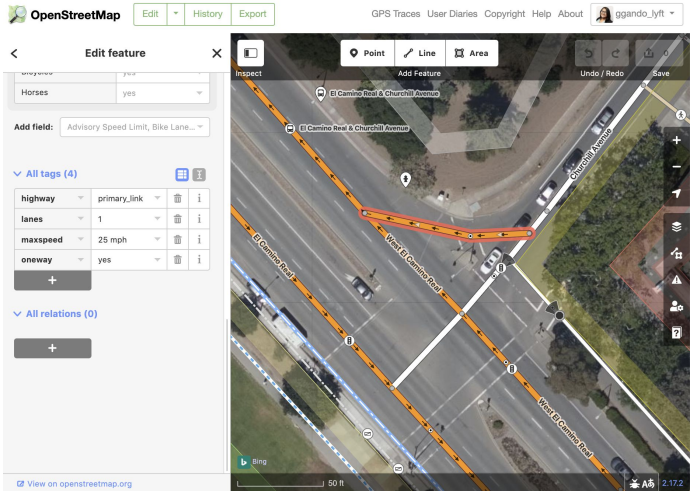
One Way Roads

One Way Roads

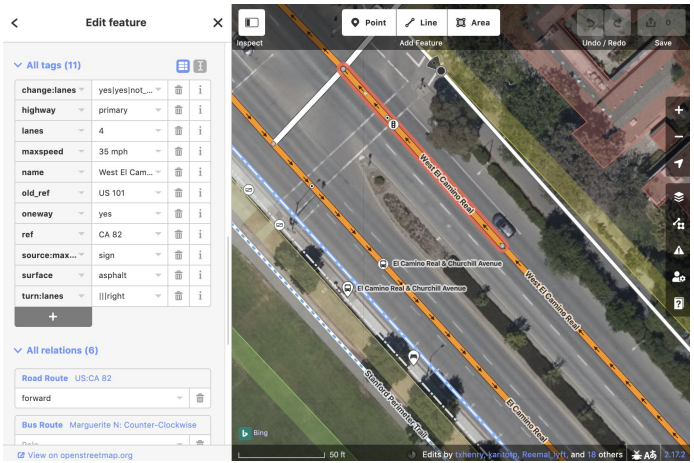
- For roads that are only driven in one direction add ‘oneway=yes’ tag
- If there is a bidirectional road, no tag is needed to represent its directionality
    - **Do not use ‘oneway=no’ tag**

- Examples of one ways to the right

Key	Value
oneway	yes



Left:
A slip road that has traffic only going in one direction that uses the one way tag.



Left:
A dual carriageway, that uses the one way tag.

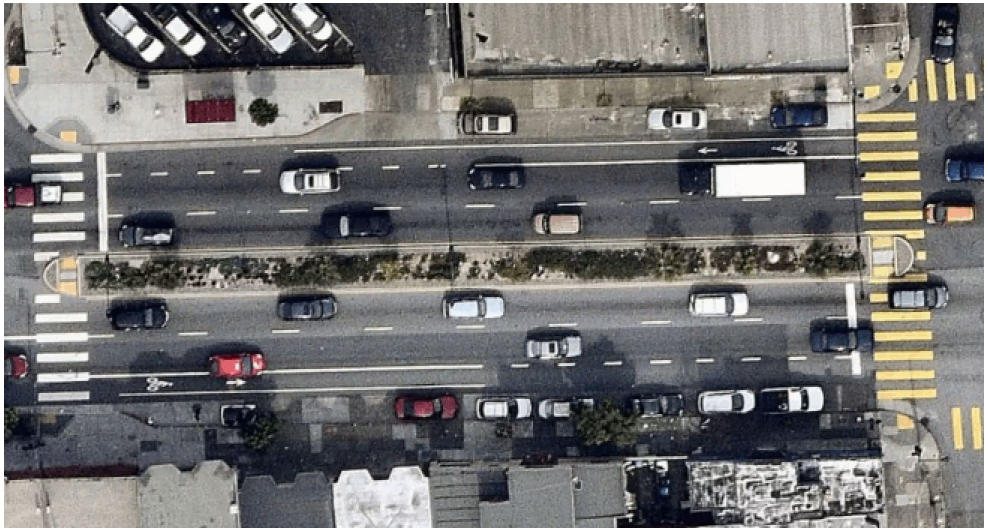
One Way Streets

- If a street only goes in one direction it has to be marked with a '**oneway=yes**' tag.

- In the example to the right
  - This is a one way road
  - Besides the stop line across the whole road, another indicator is that all the vehicles are facing the same direction

Dual Carriageways

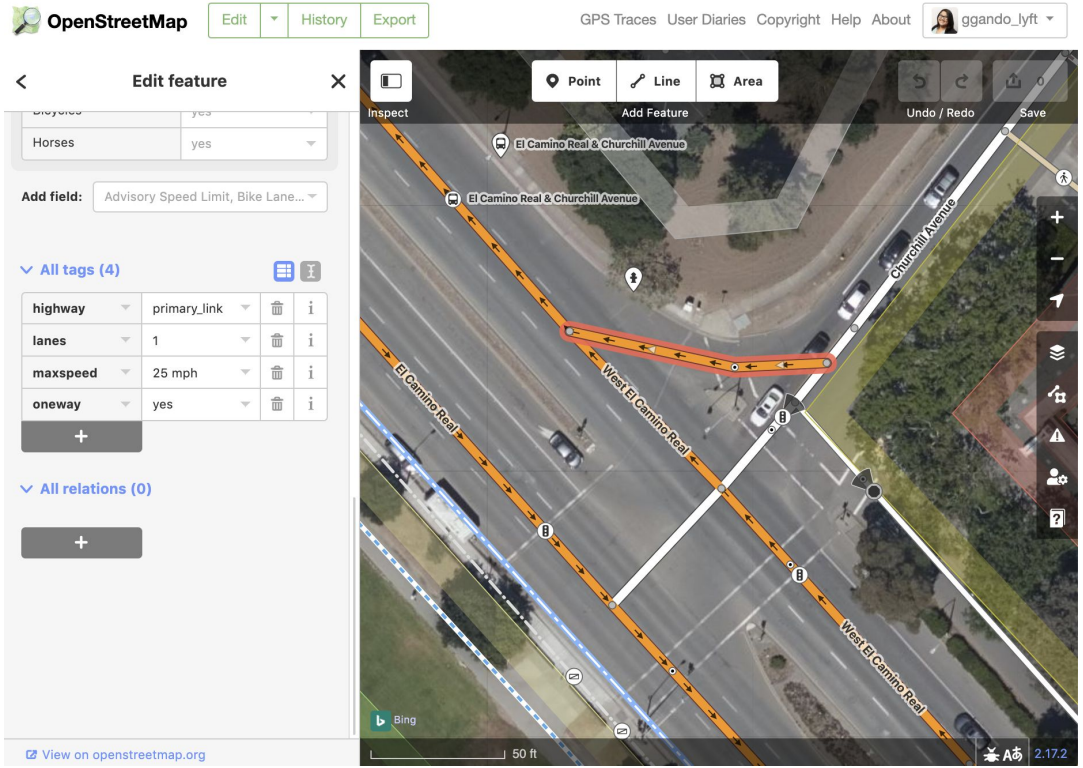
- Dual carriageways comprise of two one way roads going in different directions
  - Together they make up one large street, typically having the same name
- Dual Carriageways are used to model large streets with physical barriers between opposing traffic



Highway Link

- Typically link roads have traffic only going in one direction
- Add ‘**oneway=yes**’ tag
- Example to the right, is a primary_link that is a one way road

Key	Value
highway	*_link
oneway	yes



Above: Slip road that is orange and highlighted in red has the tag ‘highway=primary_link’.

Lane Count

Lane Count Tag

- Modeled using the lanes=* tag
- The lanes=* tag is used whenever there is a marked traffic lane
- The key takes into account all of the marked traffic lanes on a road, **regardless of direction**

Key	Value
lanes	# of total lanes

Example 1

Key	Value
lanes	2

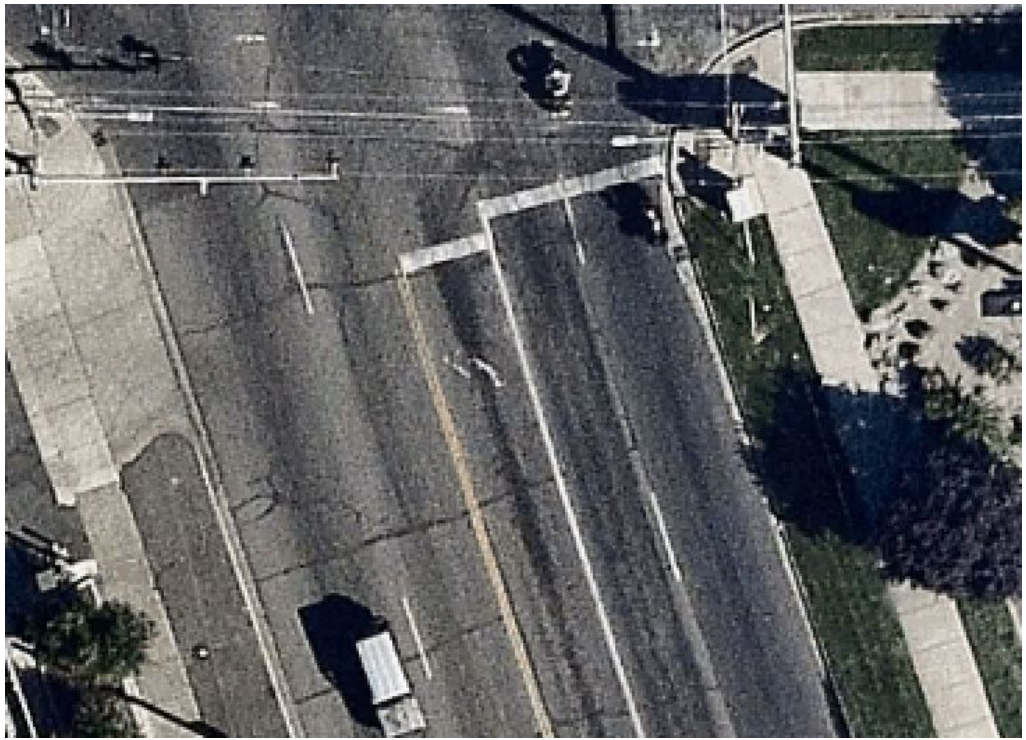
(Not completed, need more lane count tags, see following slides)

Example 2

Key	Value
lanes	3

(Not completed, need more lane count tags, see following slides)

Example 3



Key	Value
lanes	5

(Not completed, need more lane count tags, see following slides)

Lane Forward and Lane Backward Directionality

Tags

- Besides the lanes tag, which accounts for all lanes regardless of direction, if the way is not a one way add more tags
- ‘lanes:forward’, ‘lanes:backward’, and ‘lanes:both_ways’, will be used to give more detail on how many lanes go in specific directions
    - Do not add these tags to a one way road

Key	Value
lanes	# of total lanes
lanes:forward	# of total lanes going in the forward direction (OSM way’s inherit directionality)
lanes:backward	# of total lanes going in the forward direction (OSM way’s inherit directionality)
lanes:both_ways	# of total lanes going in the both direction Example, center left turn lanes

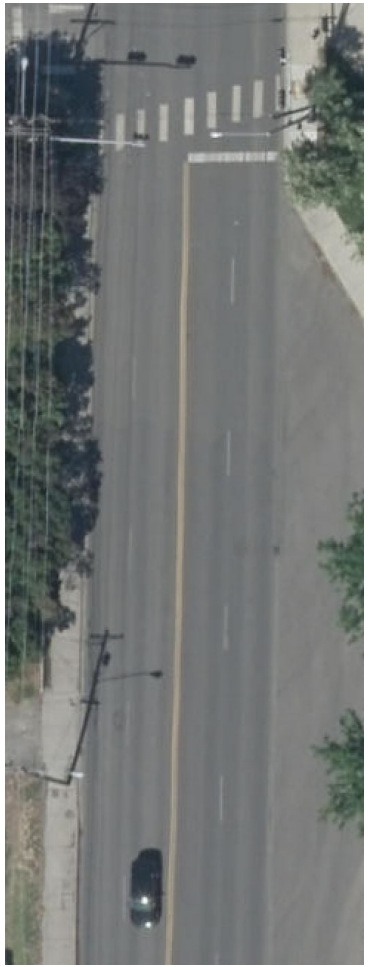
Bidirectional Roads

- Bidirectional Roads are road where traffic flows in both direction and is modeled as a singular way on OSM
- This is different than a dual carriageway

Example to the right

- A bidirectional road
- 4 lanes in total
- 2 lanes of traffic going in the forward direction (respective to the OSM direction)
- 2 lanes of traffic going in the backward direction (respective to the OSM direction)

Key	Value
lanes	4
lanes:forward	2
lanes:backward	2



Bidirectional Road Example 2

Utilizes the OSM way's direction, since not the # of lanes going in each direction is different.
Use the red arrow to look at this example

Example

- A bidirectional road
- 5 lanes in total
- 3 lanes of traffic going in the forward direction (respective to the OSM direction)
- 2 lanes of traffic going in the backward direction (respective to the OSM direction)

Key	Value
lanes	5
lanes:forward	3
lanes:backward	2

Example ‘lanes:both_ways’

It is possible that a lane is made for both directions of traffic.
The most common example is when a center left turn lane is present.

Example

- 3 lanes in total
- 1 lanes of traffic going in the forward direction (respective to the OSM direction)
- 1 lanes of traffic going in the backward direction (respective to the OSM direction)
- 1 lane of traffic for both directions, the center left turn lane

Key	Value
lanes	3
lanes:forward	1
lanes:backward	1
lanes:both_ways	1

Narrow Road

Narrow Roads

In this example, when it is known that only ONE traffic lane is marked or available on the road, and oncoming traffic is unable to pass and may have to give way at or even reverse to a passing place depending on the width of the road and the size of the vehicles.

Tagging for Narrow Road

Key	Value
lanes	1
lanes:both_ways	1

Changing Lane Count

Lane Count Changes

- Roads can change lane counts
- Examples
  - Lanes are added in
  - Lanes merge in
- **Action:**
  - Split lane
    - Creates new way
  - Update lane counts respective to the two ways

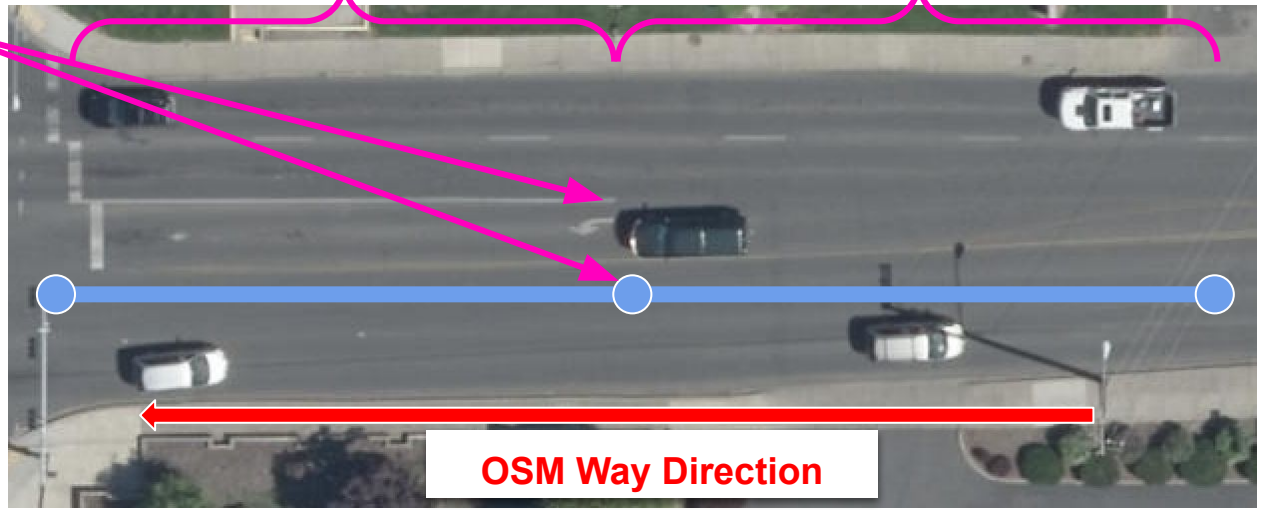
Changing Lane Count

Steps

1. Split way where the paint indicates a new lane
2. Tag the ways with the appropriate tags

Key	Value
lanes	5
lanes:forward	3
lanes:backward	2

Key	Value
lanes	4
lanes:forward	2
lanes:backward	2



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Thank you

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