

Cascade Road – Tight Diamond Alternative

Simulation Background and Narrative

This alternative features a “tight diamond” interchange in which the intersections of the I-285 ramps and Cascade Road are controlled with traffic signals. The spacing between the two I-285 ramp intersections is about 235 feet. Traffic signal intersections are also shown at Utoy Springs Road and at Shanter Trail.

The video simulation starts with an aerial view of the Cascade Road/I-285 Interchange area. The traffic patterns shown in the simulation are representative of the evening peak hour projected for the year 2030.

As the video pans to Utoy Springs Road, you will see the following changes to the intersection configuration. First, the approaches on the north and south sides have been aligned to allow smoother through movements for northbound and southbound vehicles, and to provide safer conditions. Next, the right turn only lane for westbound Cascade Road traffic has been shifted to the north and a third lane for traffic wanting to travel through the intersection to the west has been created. This third westbound lane is carried to Fairburn Road where it becomes a right turn only lane.

As the video pans to the east, you can see the development of an eastbound right turn only lane to access the southbound I-285 on-ramp, and two “look ahead” left turn lanes for access to the I-285 northbound on-ramp. You also see three westbound through lanes along Cascade Road. The third rightmost westbound lane is developed from a free flow right turn bypass lane from the I-285 southbound off-ramp.

As we move to see fully the southbound ramps intersection, you will notice that there are three lanes for the I-285 southbound off-ramp, two lanes for left turns and one lane for right turns. The eastbound approach has four lanes going through the intersection and the westbound approach has three lanes. One of these westbound lanes is for left turning traffic onto the southbound I-285 on-ramp. This intersection is controlled by a traffic signal with a left turn arrow for westbound traffic.

As you begin to view the entire interchange and its ramps, you see that there are seven lanes of traffic passing under I-285. This is an increase of one lane, and requires the I-285 bridges to be replaced.

At the intersection for the northbound I-285 ramps, you see two exclusive eastbound left turn lanes for access to the I-285 on-ramp. The northbound off-ramp from I-285 has two left turn lanes along with a right turn lane. For westbound traffic, you will see three lanes through the intersection with one of these a “look ahead” left turn lane for vehicles wanting to travel south on I-285. There is also a right turn lane for westbound to the I-285 northbound on-ramp.

As we move further to the east to Cascade Parkway, you will notice that the intersection of Cascade Parkway is restricted to only allow eastbound left turns in, and right turns in and out. Drivers desiring to make a left turn from Cascade Parkway to travel east would need to make a right turn and then go west on Cascade Road to the I-285 southbound ramp intersection to make a U-turn in order to reach the destination to the east.

Finally, the video pans to the Shanter Trail signalized intersection. You can see the addition of a second eastbound lane on Cascade Road from Cascade Parkway through the Shanter Trail intersection to the Melbenan Drive intersection where the right lane becomes a right turn only lane.