What is an echelon?
- A grade-separated intersection design where one approach on both roadways is elevated to create a pair of intersections
- Both intersections are signalized and operate like conventional one-way street intersections
- There are no free-flow movements
- The echelon uses retaining walls to elevate half of the roadway, while the other half continues at-grade
- All pedestrian sidewalks and crosswalks are at-grade; however, a staircase or ramp may be required in some locations due to retaining walls or other obstacles

When should an echelon be considered?
- At intersections with heavy traffic where main and side street traffic volumes are similar
- At locations where an at-grade conventional intersection is not sufficient for the amount of traffic
- At intersections where there is limited right-of-way to expand

What are the benefits of an echelon?
- Improved safety: Reduces the number of points where vehicles cross paths and decreases the potential for angle crashes
- Increased efficiency: Each intersection operates with only two traffic signal phases, which allows the intersection to handle a greater volume of traffic
- Shorter wait times: Fewer traffic signal phases means less time stopping at the intersection
- Cost savings: The echelon can have a narrower cross section and may be more cost effective than constructing a traditional diamond interchange

What are innovative intersections?
Intersection designs where traffic movements are modified to improve safety, reduce delay, and increase efficiency.

Visit www.virginiadot.org/innovativeintersections to learn more.
Depending on their level of comfort, cyclists may navigate the intersection using vehicle or pedestrian paths.

Pedestrians use marked crosswalks to safely cross the intersection at-grade.

Some right and left turns use ramps to move between the elevated and at-grade portions of the roadway. Motorists on these ramps merge with through traffic to complete their movements.

The two intersections (1 and 2) are signalized and operate like conventional one-way street intersections.

Note: For simplicity, only left and right turns on to or off of ramps are shown. All other traffic follows similar routes to a conventional intersection.