INNOVATIVE INTERSECTIONS

Bowtie

Proposed Bowtie (2017), Prince William Parkway at Clover Hill Road, Prince William County, VA

What is a bowtie?
- An intersection where left-turn movements are completed at an adjacent roundabout
- There are roundabouts on the side street, before and after the main intersection
- The roundabouts can have two, three, or four legs
- Traffic entering the roundabout slows down and yields to traffic already inside the roundabout
- The diameters of the roundabouts vary depending on speed, volume, size of vehicles, and number of legs

When should a bowtie be considered?
- At intersections with moderate to heavy through traffic volumes and low to moderate left-turn traffic volumes
- At locations with narrow or non-existent medians and/or limited right-of-way to expand

What are the benefits of a bowtie?
- **Improved safety**: Reduces the number of points where motorists, pedestrians, and bicyclists may cross paths; promotes lower vehicle speeds at the roundabouts, giving drivers more time to react
- **Increased efficiency**: Since there are no left-turns at the main intersection and the adjacent intersections are yield-controlled, a bowtie has fewer traffic signal phases, which reduces stops and delay
- **Shorter wait times**: Fewer traffic signal phases means less time stopping at the main intersection
- **Cost-effective**: A bowtie can be more cost-effective than adding lanes to increase capacity

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

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Navigating a Bowtie

- **To make a left turn from the major street**, turn right onto the side street, make a u-turn at the roundabout, and continue straight.
- **Pedestrians use marked crosswalks to safely cross the intersection**.
- **To make a left turn from the side street** to the major street, go straight through the main intersection, make a u-turn at the roundabout, and turn right onto the major street.
- **To continue straight or turn right from the side street**, navigate the intersection like at a conventional intersection.
- **To continue straight on the major street**, navigate the intersection like at a conventional intersection.
- **To turn right from the major street**, turn right and continue straight through the roundabout.

Note: For simplicity, only two directions of traffic are shown. Opposing traffic follows similar routes.

Depending on their level of comfort, cyclists may navigate the intersection using vehicle or pedestrian paths.

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