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

Visit www.virginiadot.org/innovativeintersections to learn more.

What is a CGT?
- Intersection design where one major street direction of travel (the top side of the “T”) can pass through the intersection without stopping and the opposite major street direction of travel is typically controlled by a traffic signal.
- Left-turn vehicles from the side street use a channelized receiving lane on the major street to merge onto the major street.
- Intersection is typically signalized but can also be designed without a traffic signal.

When should a CGT be considered?
- At intersections with three legs.
- At intersections with heavy through traffic volumes on the major street.
- At intersections with moderate to low left-turn traffic volumes on the side street.
- At intersections where there are no driveways along the major street opposite the side street.
- At intersections with a limited number of pedestrian crossings across the major street or with an alternative pedestrian crossing location nearby.

What are the benefits of a CGT?
- Improved safety: Channelization of left-turn vehicles from the side street reduces the potential for angle crashes.
- Increased efficiency: Because one direction of travel on the major street is free-flow, more green time can be provided to the other movements, reducing delay at the intersection.
- Free-flow in one direction: One direction of travel on the major street never stops, which improves traffic signal synchronization and reduces corridor travel times.

A CGT is also known as:
- Turbo-T Intersection
- High-T Intersection
- Seagull Intersection

What are the intersections?
At CGTs, crosswalks are not provided across the major street. To cross the major street, pedestrians may use the nearest marked crosswalk (not shown).

To turn left from the side street, use the channelized lane to merge onto the major street.

To continue straight on the top of the “T”, pass through the intersection.

From the major street, navigate the intersection like at a conventional intersection.

Pedestrians use marked crosswalks to safely cross the side street.

From the side street, turn right like at a conventional intersection.

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

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INNOVATIVE INTERSECTIONS

Restricted Crossing U-Turn (RCUT)

Highway 9 E at Liberty Church Road, Loris, SC

What is an RCUT?
- Intersection design where all side street movements begin with a right turn
- Side street left-turn and through vehicles turn right and make a u-turn at a dedicated downstream median opening to complete the desired movement
- Main intersection and median u-turns can be designed as signalized, stop controlled, or yield controlled

When should an RCUT be considered?
- On median-divided highways
- At intersections with heavy through and/or left-turn traffic volumes on the major street
- At intersections with low through and left-turn traffic volumes on the side street
- At intersections with three or four legs

What are the benefits of an RCUT?
- Improved safety: Reduces the number of points where vehicles cross paths and eliminates the potential for head-on crashes
- Increased efficiency: Each direction of the major street can operate independently creating two one-way streets and increasing the overall intersection capacity
- Shorter wait times: Fewer traffic signal phases means less stopping for mainline vehicles and right turns only from the side street vehicles means less time waiting
- Cost-effective: A RCUT can be more cost-effective than adding lanes to improve capacity

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Pedestrians use marked crosswalks to safely cross the intersection.

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

To continue straight on the side street, turn right onto the major street, make a u-turn, and turn right onto the side street.

To turn right from the side street, turn right like at a conventional intersection.

To make a left turn from the side street to the major street, turn right onto the major street, make a u-turn, and continue straight.

From the major street, navigate the intersection like at a conventional intersection.

NOT TO SCALE

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Note: For simplicity, only two directions of traffic are shown. Opposing traffic follows similar routes.
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What is a roundabout?
- A circular unsignalized intersection where all traffic moves in a counterclockwise direction around a central island
- Traffic entering the roundabout slows down and yields to traffic already inside the roundabout
- Roundabouts can be designed with one or more circulating lanes
- Design options allow for right turns to be channelized to bypass the circulating lanes

When should a roundabout be considered?
- At intersections with heavy left-turn traffic or with similar traffic volumes on each leg
- At intersections with crashes involving conflicting through and left-turn vehicles
- At intersections with limited room for storing vehicles
- At intersections where there are limited nearby driveways
- At locations where vehicles from adjacent intersections will not queue into the roundabout

What are the benefits of a roundabout?
- **Improved safety**: Reduces the number of points where vehicles can cross paths and eliminates the potential for right-angle and head-on crashes
- **Increased efficiency**: Yield-controlled design means fewer stops, less delay, and shorter queues for overall improved efficiency
- **Safer Speeds**: Promotes lower vehicle speeds, which gives drivers more time to react
- **Long-term cost effective**: No traffic signal equipment means lower long-term costs for operations and maintenance
- **Aesthetics**: Creates opportunities for landscaping and beautification

Roundabouts are not the same as neighborhood traffic circles. Typically, roundabouts are larger and designed for higher speeds than neighborhood traffic circles.
Navigating a Roundabout

- Pedestrians use marked crosswalks to safely cross the intersection.
- Before entering the roundabout, look left, and yield to traffic in the roundabout.
- To turn right, exit onto the first leg.
- To turn left, exit onto the third leg.
- To go straight, exit onto the second leg.

Note: For simplicity, only one direction of traffic is shown. Traffic on other roundabout legs follow similar routes.

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

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What are innovative intersections?
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What is an MUT?
- Intersection design where left-turn vehicles from one or both roads make u-turns at dedicated median openings to complete the desired movement
- Intersection can be designed with median u-turns on one or both roads
- Median u-turns can be designed as signalized, stop controlled, or yield controlled

When should an MUT be considered?
- On median divided highways
- At intersections with moderate to heavy through traffic volumes and low to moderate left-turn traffic volumes
- At intersections with three or four legs

What are the benefits of an MUT?
- Improved safety: Reduces the number of points where vehicles cross paths and decreases the potential for right-angle crashes
- Increased efficiency: Eliminates left-turn movements from the main intersection allowing for fewer traffic signal phases, which reduces delay and increases capacity
- Shorter wait times: Fewer traffic signal phases means less time stopping at the main intersection
- Cost effective: An MUT can be more cost-effective than adding lanes to increase capacity
INNOVATIVE INTERSECTIONS

Median U-Turn (MUT)

📍 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

📍 To make a left turn from the major street to the side street, go straight through the main intersection, make a u-turn, and turn right onto the side street

📍 To make a left turn from the side street to the major street, turn right onto the major street, make a u-turn, and continue straight

📍 To turn right from the side street, turn right like at a conventional intersection

📍 To continue straight on the side street, navigate the intersection like at a conventional intersection

📍 To continue straight and turn right from the major street, navigate the intersection like at a conventional intersection

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

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