

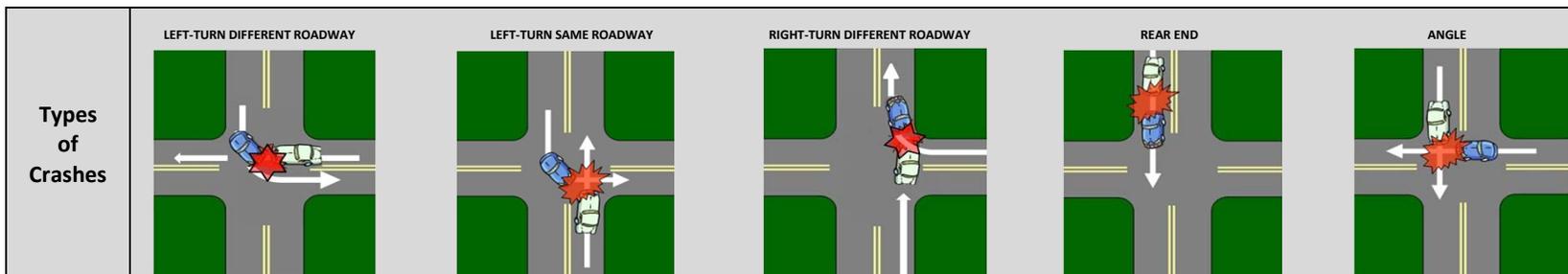
Toolbox for Intersection Modifications On A Four Lane Undivided Street



		Signal (with Left Turn Lanes)	Left-Turn Lanes	Restricted Access (Directional Cross-Over)	Restricted Access (Signs Only)	Restricted Access (Median)	Modern Roundabout	Road Conversion
Crashes	Left-turn different roadway	+	No Impact	+	+	+	+	No Impact
	Left-turn same roadway	+	+	+	+	+	+	+
	Right-turn different roadway	+	No Impact	No Impact	No Impact	No Impact	+	+
	Rear-end	-	+	+	+	+	+	No Impact
	Angle	+	No Impact	+	+	+	+	No Impact
Major Street	Driver Delay	-	No Impact	No Impact	-	+	+	-
	Pedestrians	+	-	-	No Impact	No Impact	+	+
	Cyclist	+	-	-	No Impact	No Impact	+	+
	Sight Distance	+	-	-	No Impact	No Impact	+	+
	Speed reduction	No Impact	-	-	No Impact	No Impact	+	+
	Property impacts	High	High	High	No Impact	Low - Medium	High	No Impact
Preliminary Cost Estimates	High	High	High	Low	Medium - High	High	Medium	
Estimated Project Duration	5 years	5 years	5 years	3 months	5 years	5 years	Varies	

+ Positive Impact - Negative Impact

Project Cost Ranges Low: < 10K; Medium: 10K < 500K ; High: >500K



Pros & Cons of a Traffic Signal with Left Turns

A standard signalized intersection with dedicated left-turns on Major Street.

PROS

- Eliminates left-turn different roadway crashes
- Eliminates left-turn same roadway crashes
- Improves right turn different roadway crashes

CONS

- Crashes are more severe
- Increases rear end
- Motorist will experience delay due to new signal
- Delay causes motorist to use alternate routes such as subdivision streets to avoid delay
- Typically right-of-way at intersection is needed for left-turns widening

Pros & Cons of Left Turns at Un-signalized intersections

A dedicated left-turn on Major Street for motorist to stage prior to making the left-turn maneuver

PROS

- Eliminates left-turn same roadway crashes
- Eliminates rear end crashes for left turning vehicles
- Reduces angle crashes

CONS

- Doesn't improve pedestrian crossing opportunity
- Doesn't reduce motorist speeds on Major Street
- Typically right-of-way at intersection is needed for left-turns widening
- Doesn't improve minor street sight distance

Pros & Cons of Restricted Access: Direction Cross-Over

A physical barrier prohibiting left-turns from side streets to major street, but allowing left-turns from major street to side street. The physical barrier restricts crossing the major street from the side street.

PROS

- Eliminates angle crashes
- Eliminates left-turn crashes from side streets
- Reduces rear-end crashes for vehicles waiting to make a left turn from the major street to the side street
- Increased sight distance for major street, left-turning vehicles
- Potentially requires additional right-of-way for street widening

CONS

- Causes side street left-turning movements to divert to other locations, potentially creating new or increased crash risk problems at other intersections
- During off-peak times when left-turn movements from minor street might be easier to make, this opportunity will be removed with the restriction
- Increased trip time due to longer route

Pros & Cons of Restricted Access: Signage

A restriction of turning movement(s) from the major street or side street.

PROS

- Reduces and discourages left-turn crashes (motorist may not obey signs)
- Reduces rear-end crashes for vehicles waiting to make a left turn from the major street to the minor street
- Continuous traffic flow on major street due to less turning movements
- Does not limit access for emergency responders
- Signs allows time restricted access
- No additional right-of-way needed for sign installation

CONS

- Hard to enforce without a physical barrier, some motorist will disobey signage
- Causes turning movements to divert to other locations, potentially creating new or increased crash risk problems at other intersections
- During off-peak times when left-turn movements might be easier to make, this opportunity will be removed with the restriction
- Increased trip time due to longer route

Pros & Cons of Restricted Access: Median

A physical barrier prohibiting left turn movements from the side street to the major street and major street to the side street.

PROS

- Eliminate all left-turn crashes
- Eliminates all angle crashes
- Reduces rear-end crashes for vehicles waiting to make a left turn from the major street
- Continuous traffic flow on major street due to less turning movements

CONS

- Access is prohibited to all vehicles including emergency responders
- Potentially limit access for emergency response vehicles
- Causes turning movements to divert to other locations, potentially creating new or increased crash risk problems to other intersections
- During off-peak times when left-turn movements might be easier to make, this opportunity will be removed with the restriction
- Increased trip time due to longer route
- Potentially requires additional right-of-way for median width needed

Pros & Cons of Modern Roundabouts

A roundabout reduces the number of conflict points at intersections and all movements are made in a counter-clockwise movement

PROS

- Motorist experience less congestion and delay because traffic is constantly moving in comparison to a standard 4-leg intersection
- A roundabout has eight conflict points (A standard intersection has 32 conflict points)
- Less conflict points reduce overall number of crashes
- A roundabout has a reduction of: 90% fatality crashes, 75 % of injury collision, and 40% pedestrian collisions
- Pedestrian have less conflict points making easier to cross the streets
- Pedestrians have staged crossings making easier to cross streets

CONS

- Typically right-of-way at intersection is needed more than a standard intersection but overall length limits are less

Pros & Cons of Road Conversion

It is the conversion of through travel lanes to dedicated left turn lanes and installing bicycle lanes or on-street parking.

PROS

- Platooning effect reduces motorist speed (slowest motorist dictates street speed)
- Reduces the number of crashes along corridor
- Reduces the severity of crashes due to lower motorist speeds
- Reduction in rear-end and left-turn crashes through the use of a dedicated left-turn lane
- Additional right-of-way is not required

CONS

- Speeds are dictated by the slowest driver and not the speed limit
- Side streets and driveways have less gaps to enter major street
- Potential for oversize vehicles to block traffic when stopped
- Increased travel time
- Traffic may divert to other streets