



Council Direction

- April 12, 2011 - City Council approved the roundabout design for Alta Lane & Radnor Road and Allen Road & Hickory Grove Road and to direct staff to pursue other opportunities for roundabout installation.
- Benefits of roundabouts include:
 - vehicle and pedestrian safety,
 - fuel savings,
 - reduction of emissions, and
 - decreased long term maintenance costs.

Anatomy of a Roundabout

- Center island:
 - Diverts traffic in one way direction.
 - Prevents severe head-on and right-angle crashes.
- Mountable Truck apron:
 - Allows large vehicles extra tracking width.
- Splitter islands:
 - Separates entering and exiting vehicles.
 - Provides pedestrian crossing and refuge.
 - Slows vehicles.
 - Forces vehicles into correct entering angle.

Signs and Pavement Marking

Figure 3C-3. Example of Markings for a One-Lane Roundabout

Legend
★ Optional

Splitter island mountable or painted yellow

Central island might also be mountable or painted yellow

Splitter island formed by two sets of double yellow lines

How do roundabouts work?

- Approaches are channelized to slow traffic and point vehicles in the correct direction.
- Entering traffic yields to vehicles already in the roundabout.
- All traffic flows in a counter-clockwise direction.
- Exit to the right, at the desired exit lane.

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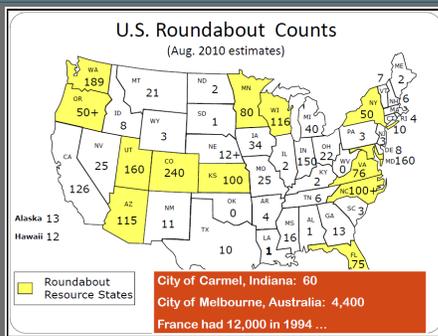
Edgewild Subdivision

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Peoria International Airport



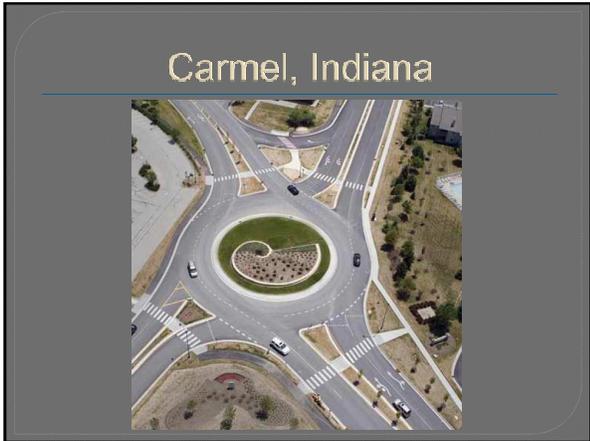
Roundabouts in the US



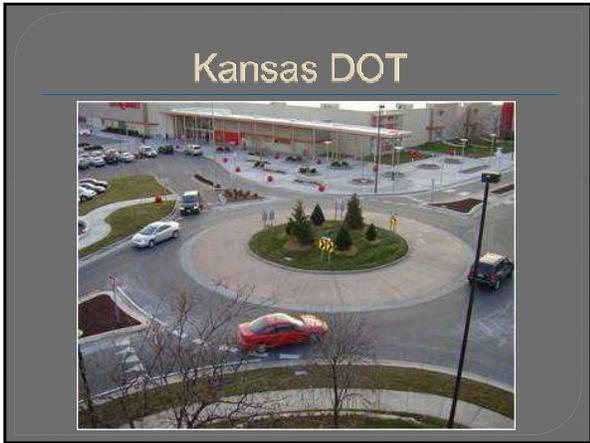
Coralville, Iowa









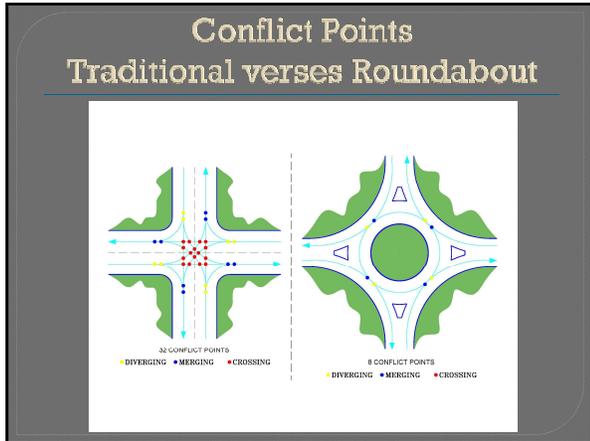


Why Roundabouts?

- Vehicle Safety:
 - Assist older drivers by reducing intersection speed and complicated decisions.
 - Lowers speeds through intersection.
 - Decreases conflict points within intersection:
 - Crash severity significantly decreased as right-angle and head-on crashes are eliminated.

Why Roundabouts?

- Vehicle Safety (continued):
 - Roundabouts decrease crashes:
 - All crashes decreased nearly 40%.
 - Injury crashes decreased nearly 80%.
 - Fatal crashes decreased more than 90%.
 - Recent study in Carmel showed a 51% decrease in injury crashes per road mile in their system, (Carmel has 63 roundabouts and only 39 traffic signals).



Why Roundabouts?

- Pedestrian Safety:
 - Splitter islands provide pedestrians and bicyclists refuge when crossing roadway.
 - Pedestrians only need to look in one direction at a time while crossing.
 - Crossing distance is generally shorter than in traditional intersections.
 - Splitter islands slow down vehicles.

Why Roundabouts?

- Maintenance and operation:
 - Require less maintenance.
 - Not subject to power outages or malfunctions.
 - Continual motion of vehicles decreases delay, which decreases fuel consumption motorist cost.
 - High capacity, which may delay need for future intersection upgrades.
 - Roundabouts reduce the need for long left and right turn lanes, which can reduce the right-of-way needs for an intersection.

Why Roundabouts?

- Other:
 - Continual motion of vehicles through intersection decreases fuel consumption, which decreases vehicle emissions, and is environmentally friendly.
 - Roundabouts can be landscaped to be more aesthetically pleasing than traditional intersections.
 - Roundabouts can provide attractive area centerpieces.

Location Consideration

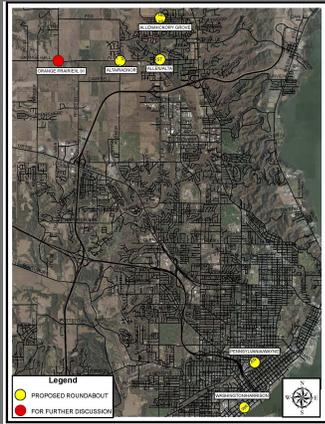
Consider a roundabout when one or more occur:

- Intersections with high crash and crash severity rates.
- Intersection with complex geometry (more than 4 approaches, skewed entry angle).
- Rural intersections with high-speed approaches.
- Freeway interchange ramp terminals.
- Closely spaced intersections.
- Replacement of congested all-way stops.
- Replacement of signalized intersections.

Location Consideration

- Intersections with high left-turn volumes.
- Replacement of two-way stops with high side-street delay.
- Intersections with high U-turn movements.
- Logical transitions from higher-speed to lower-speed areas.
- Where aesthetics are important and green space is desired.
- Where accommodating older drivers is an objective.

Proposed Locations in Peoria



Allen and Hickory Grove



Allen and Alta



