

CITY OF FRANKLIN, TENNESSEE

Columbia Avenue

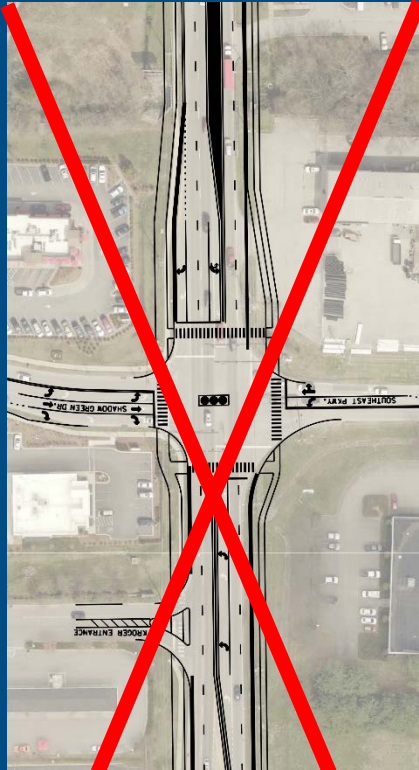
Widening & Improvements Project

Work Session | June 26, 2017



Corridor Concepts

Example: Columbia Avenue at Southeast Parkway



Four-Lane Median
Divided Concept

with center median
and left-turn lanes



Five-Lane
Signalized Concept

with continuous
two-way, left-turn lane



Roundabout
Concept

with 4-foot
center median

Columbia Ave Local Network Plan



Estimated Project Cost: \$4,306,00

BOMA Ranking: 0 of 9 Votes

Staff Ranking: 1 Star Project

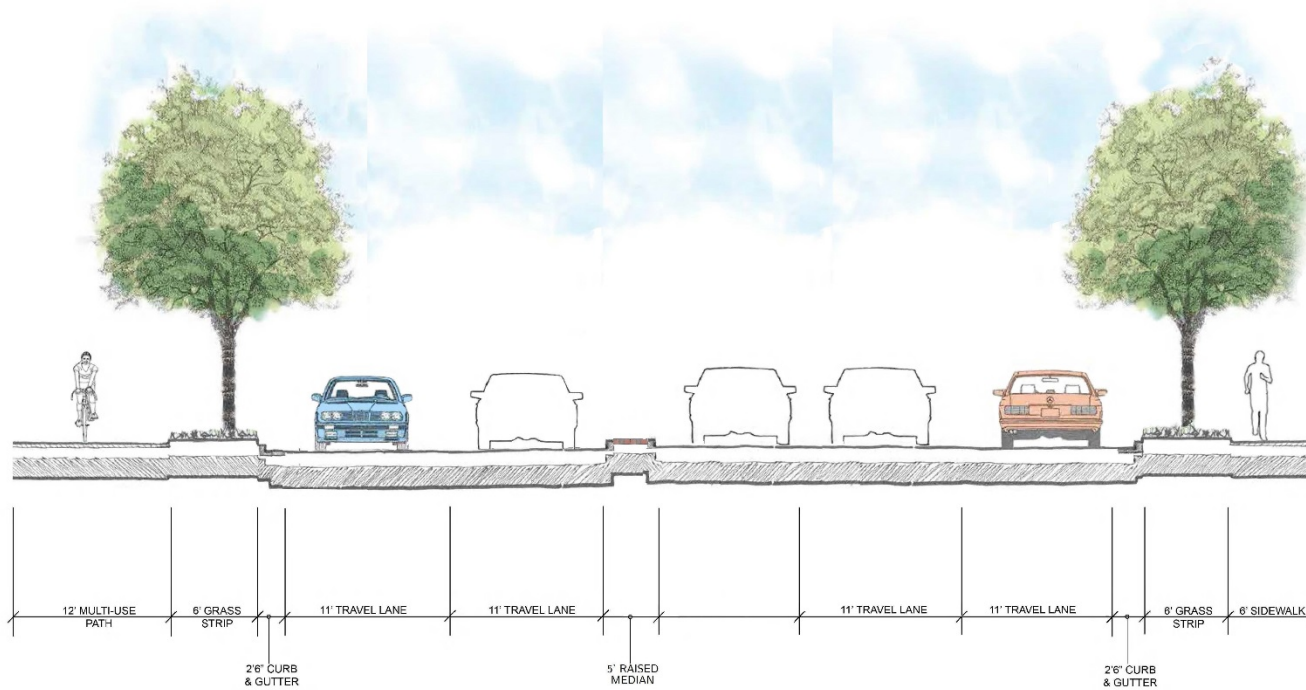
FIVE-LANE ROADWAY CONCEPT TYPICAL SECTION 1

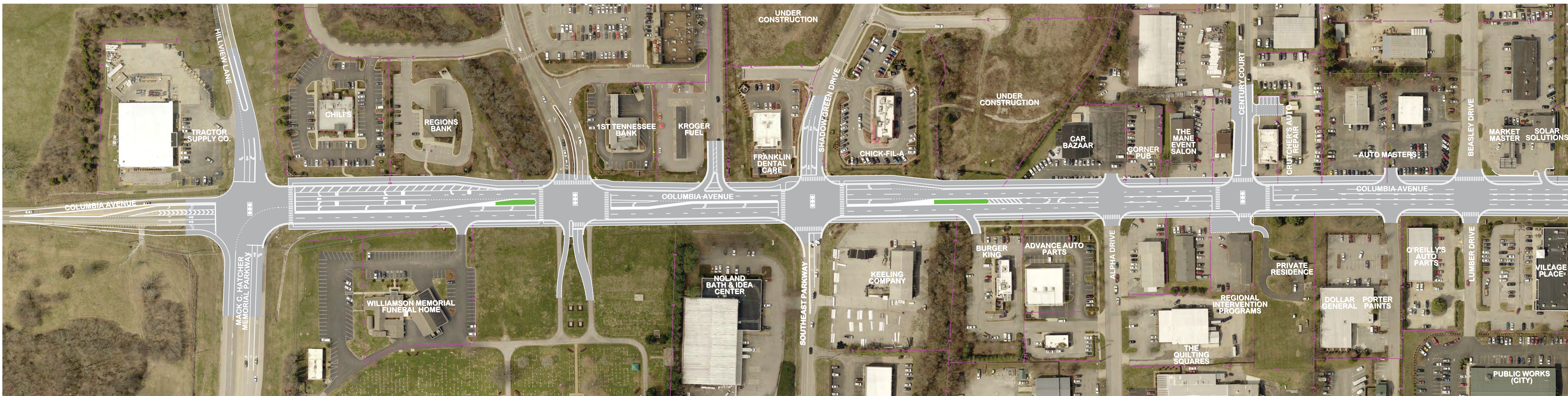


FIVE-LANE ROADWAY CONCEPT TYPICAL SECTION 2



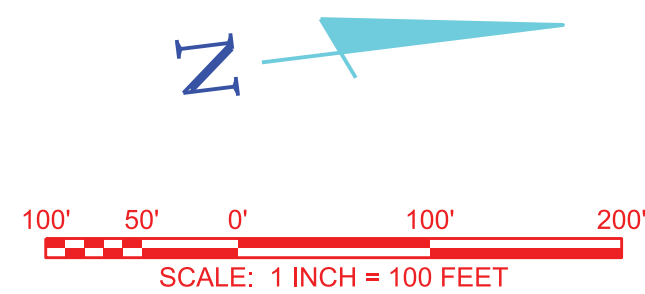
FIVE-LANE ROADWAY CONCEPT TYPICAL SECTION 3





MATCH LINE - SEE THIS SHEET

MATCH LINE - SEE THIS SHEET



REV.	DR.	CHK.	DATE	DESCRIPTION

FILE NO. 36291-00

FIVE-LANE SIGNALIZED CONCEPT WITH ACCESS MANAGEMENT

COLUMBIA AVENUE
CITY OF FRANKLIN
FRANKLIN, WILLIAMSON COUNTY, TENNESSEE

PRELIMINARY
NOT FOR
CONSTRUCTION
DATE

What is a roundabout?

A roundabout is a one-way, circular intersection without traffic signal equipment in which traffic flows around a center island.

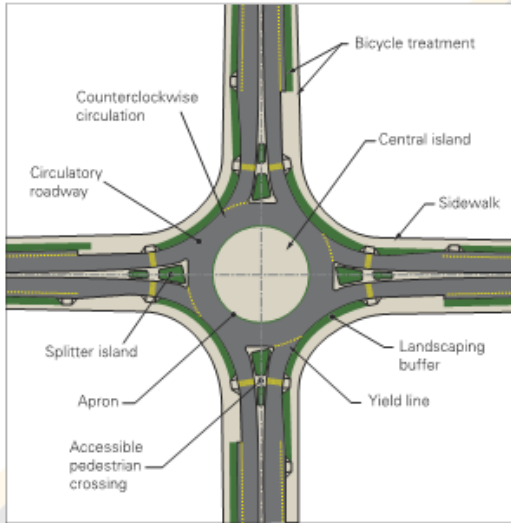
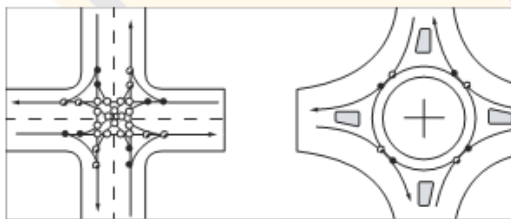


Illustration of potential conflict points in traffic intersections.

Through proper design, roundabouts can easily accommodate emergency and large sized vehicles. Drivers should behave in the same manner as they would on any other road if an emergency vehicle approaches: carefully move your vehicle as far right as possible and, if necessary, stop until the emergency vehicle passes.



Signaled intersection:
32 conflict points

Roundabout:
8 conflict points

All roundabouts have these features:

Yield-at-entry

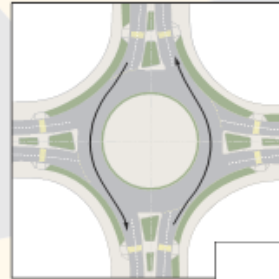
- Traffic entering the circle yields to traffic already in the circle.

Traffic deflection

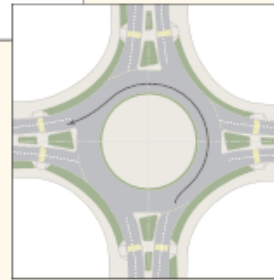
- Pavement markings and raised islands direct traffic into a one-way counterclockwise flow.

Geometric curvature

- The radius of the circular road and the angles of entry can be designed to slow the speed of vehicles.



Driving straight through a roundabout



Left-hand turn

Because the only movement allowed upon entry or exit from a roundabout is a right turn, the occurrence of crashes that result in injury is substantially reduced. Small-angle collisions, the type of collisions that can occur as a result of a right-hand turn, are typically less severe than other types of collisions.

Benefits of a roundabout:

Lives saved

- Up to a 90% reduction in fatalities
- 76% reduction in injury crashes
- 30-40% reduction in pedestrian crashes
- 75% fewer conflict points than four way intersections

Slower vehicle speeds (under 30 mph)

- Drivers have more time to judge and react to other cars or pedestrians
- Advantageous to older and novice drivers
- Reduces the severity of crashes
- Keeps pedestrians safer

Efficient traffic flow

- 30-50% increase in traffic capacity

Reduction in pollution and fuel use

- Improved traffic flow for intersections that handle a high number of left turns
- Reduced need for storage lanes

Money saved

- No signal equipment to install and repair
- Savings estimated at an average of \$5,000 per year in electricity and maintenance costs
- Service life of a roundabout is 25 years (vs. the 10-year service life of signal equipment)

Community benefits

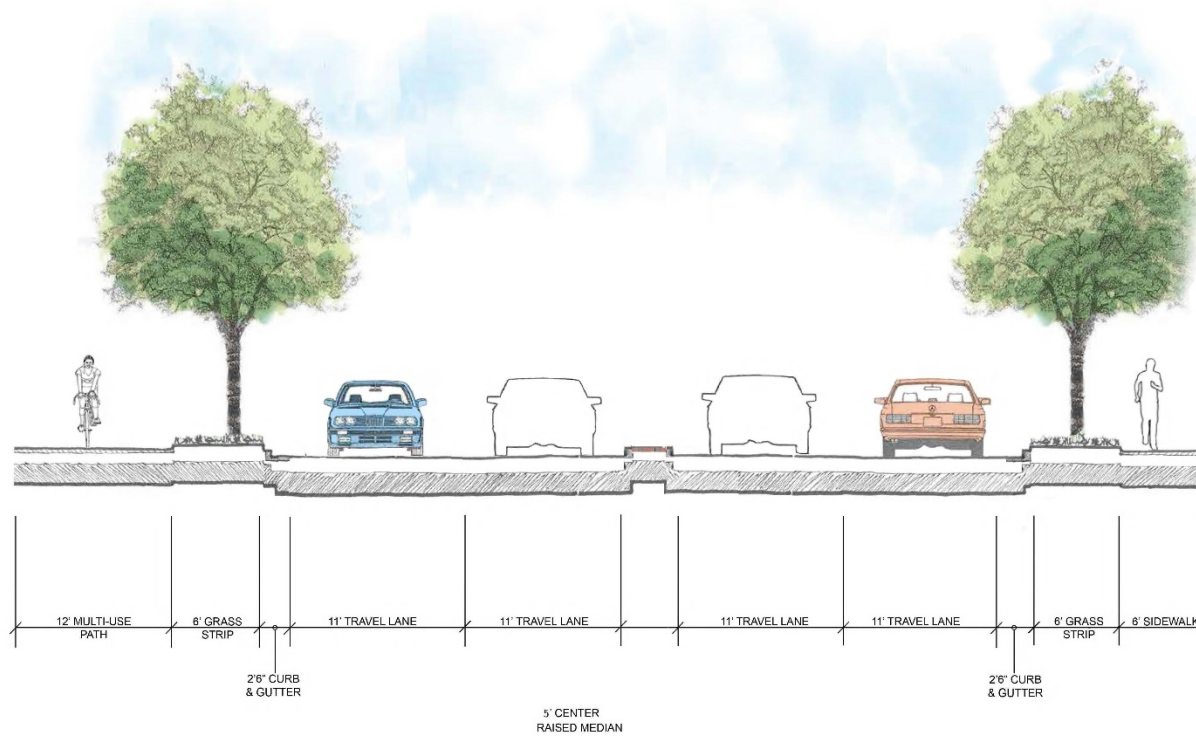
- Traffic calming
- Aesthetic landscaping

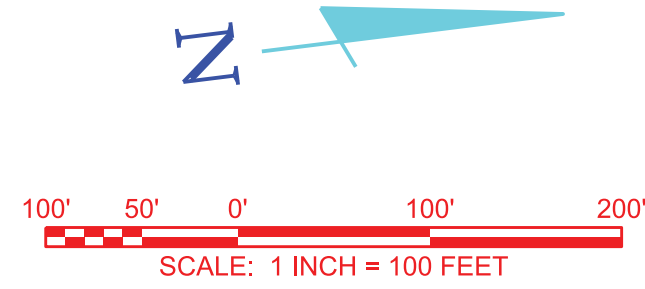


Continuous counterclockwise traffic flow

Roundabouts save lives...

ROUNABOUT CONCEPT





MATCH LINE - SEE THIS SHEET

MATCH LINE - SEE THIS SHEET

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ROUNDABOUT CONCEPT
 COLUMBIA AVENUE
 CITY OF FRANKLIN
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Next steps

- 1) Review and Present Operations, Safety and Physical Impact associated with the two preferred concepts.
- 2) BOMA selects preferred roadway concept
- 3) Evaluate pedestrian facilities, transit facilities and utility impacts/relocations
- 4) Finalize the NEPA Phase of the Project.