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Why Access Management is Good for Communities

Board of Mayor and Aldermen
City of Franklin, Tennessee

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What is Access Management?

The careful consideration of the location, type and design of access to a roadway.

Why is Access Management Important to Franklin?

Source of travel delay

Frequent location of traffic crashes.

Every minute of travel delay increases costs

Increases product and service cost, retail & industrial

Increased cost decreases competitiveness in the market place

A new signal adds delay and costs

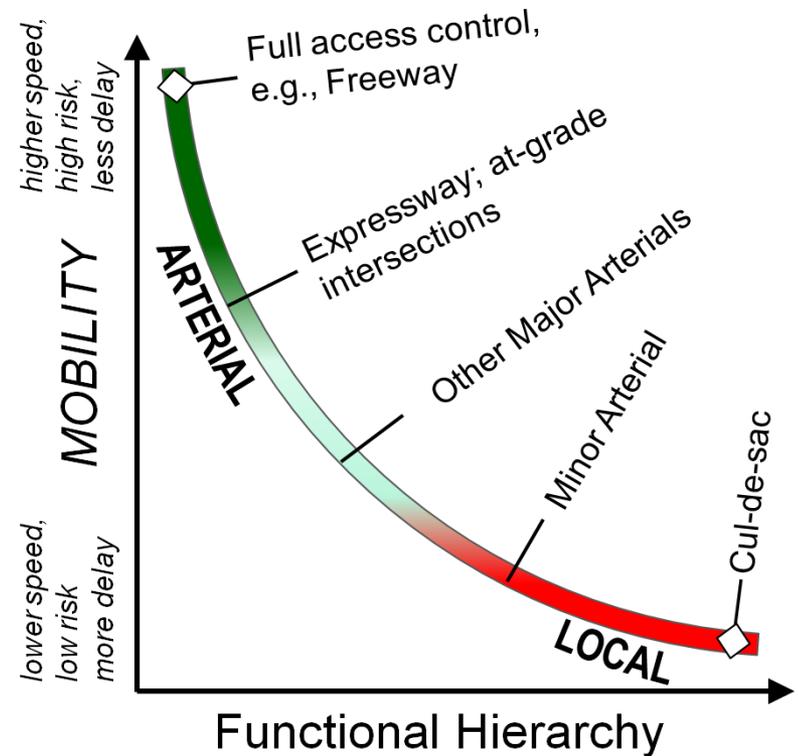
Access Management Uses Hierarchy

Access management should vary with roadway importance.

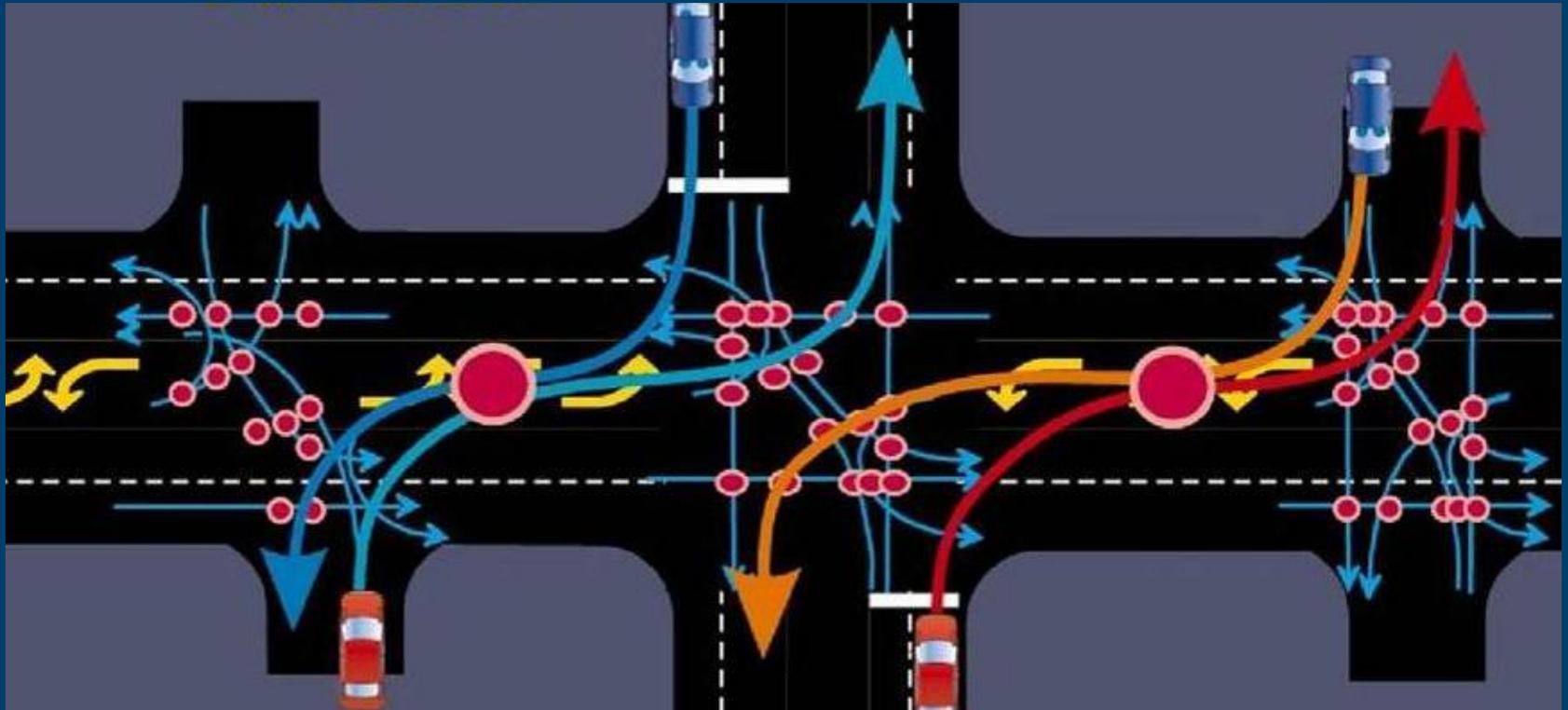
Arterials must handle large volumes safely.

Collectors are safer, flexible, but have limited capacity.

More access, more turbulence, more crashes, lower performance.



Designing for Safety is About Limiting and Managing Vehicular Conflicts



If you reduce the rate at which a motorist encounters conflicts you will reduce the rate of crashes.

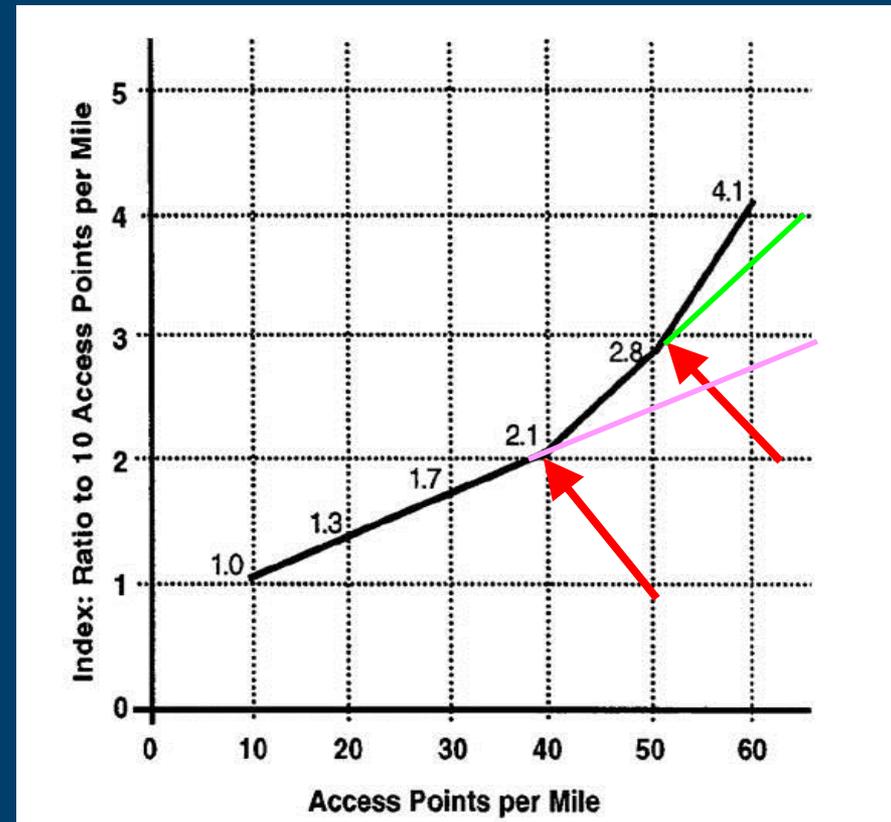
No Such Thing as Safe Access

As the number of access points per mile increase, so does the frequency of crashes.

And the rate also increases.

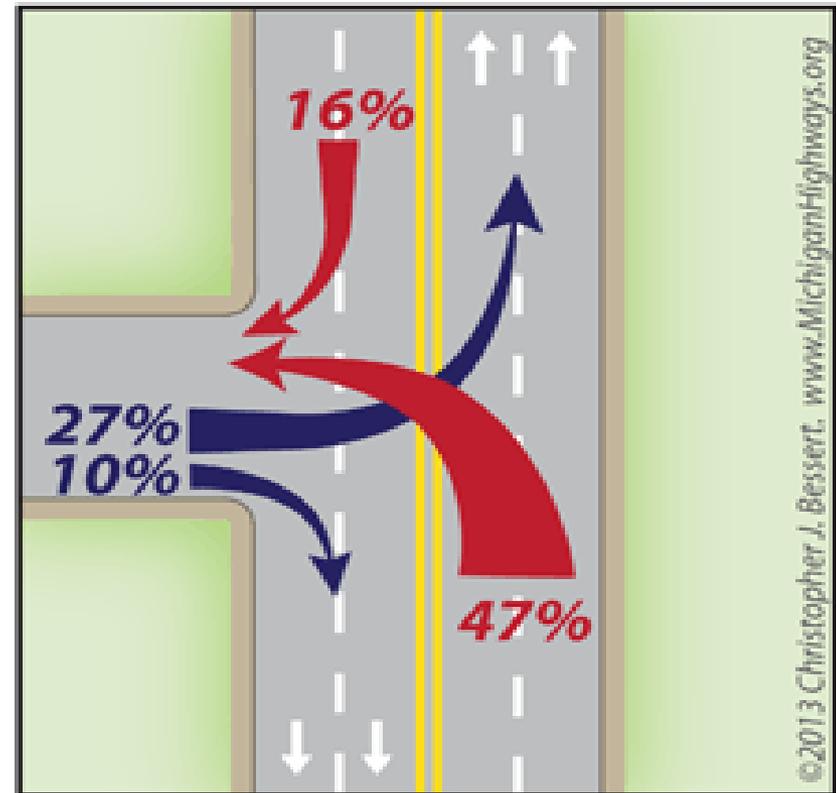
40 driveways per mile will increase crashes by 60% compared to 20 per mile.

Each access = 4%



Source: NCHRP 420

Left turns are the highest percentage of crash related maneuvers, 74% – that's why medians are important

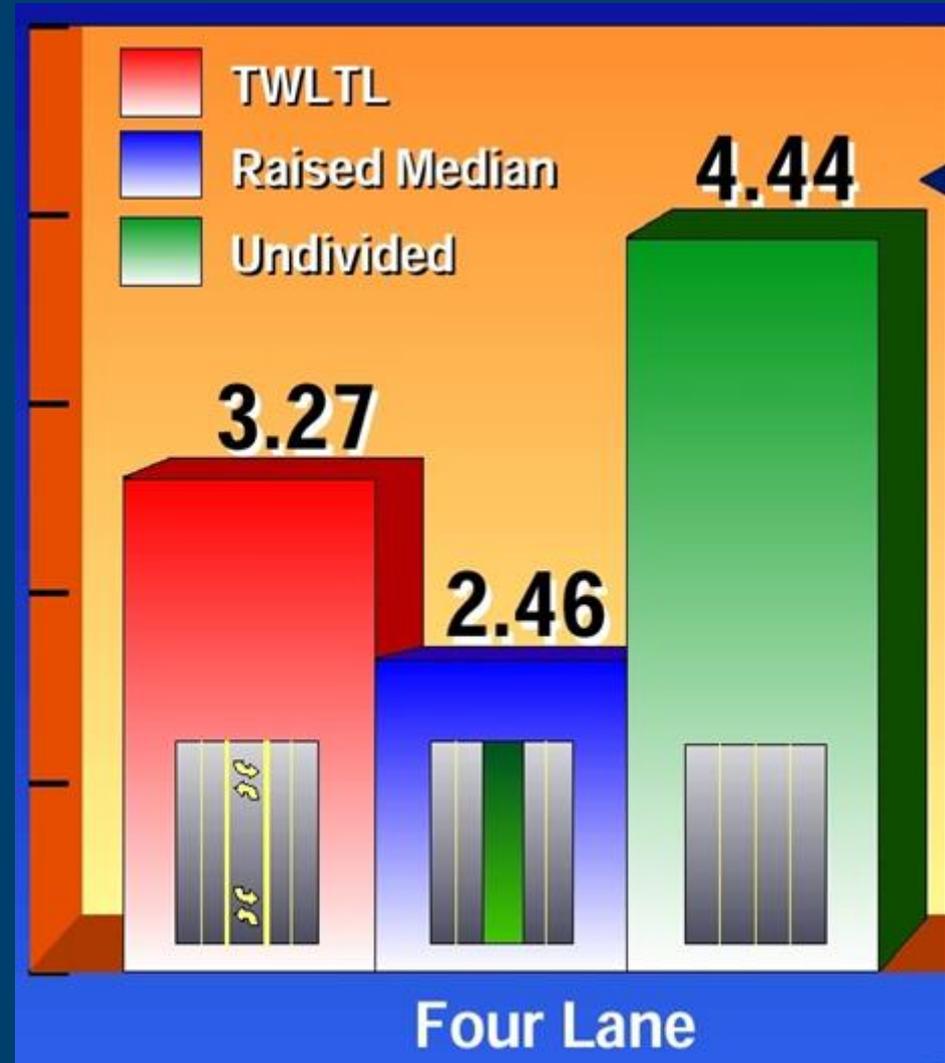


Percentage of crashes by driveway movement. Source: Federal Highway Administration, Office of Operations, 2006.

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Decreasing crash rates by adding medians

SR-96 crash rate is about 14.9 million vehicle miles



Source: Florida DOT

Every Access Point is Fundamentally a Safety Problem



Allowing an access is a decision that will diminish public safety and roadway function.

Two Basics That We Apply

1. Make choices that reduce the conflict rate experienced by travelers.
2. Reduce the potential severity of the conflicts that are allowed.

Roadways are the most dangerous public facilities on the face of the Earth



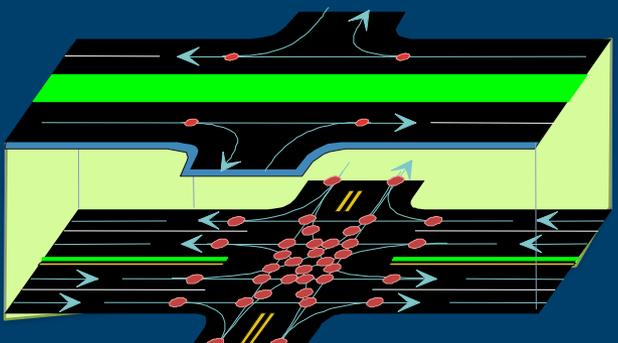
Nationwide, about 630 people die each week

Over 19 deaths each week in Tennessee

Over 3,300 crashes reported weekly

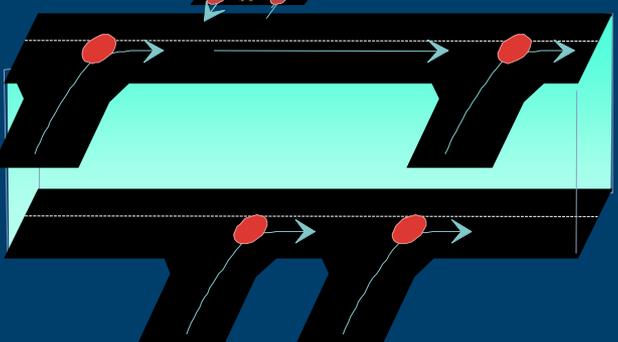
Over 1,350 injuries reported weekly

What are the Principles of Access Management?



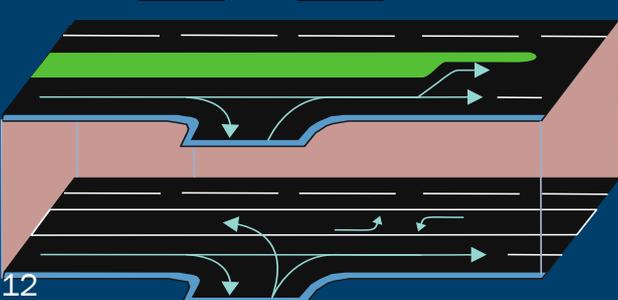
Manage access type to limit conflict points and severity

The diagram shows a 3D perspective of a road intersection. A main road with a green highlighted lane approaches from the left. A side road branches off to the right. Red dots represent conflict points where vehicles from the main road and the side road meet. The intersection is marked with yellow diagonal lines.



Separate the conflict points – increase decision time

The diagram shows a 3D perspective of a road intersection. A main road with a green highlighted lane approaches from the left. A side road branches off to the right. Red dots represent conflict points. The side road is separated from the main road by a physical barrier, reducing the number of conflict points.



Provide reasonable access at each property

The diagram shows a 3D perspective of a road intersection. A main road with a green highlighted lane approaches from the left. A side road branches off to the right. Red dots represent conflict points. The side road is separated from the main road by a physical barrier, and the main road has a green highlighted lane. The intersection is marked with yellow diagonal lines.

Successful Techniques

Well-designed
driveways and
intersections

Turn lanes at
intersections and high
volume driveways

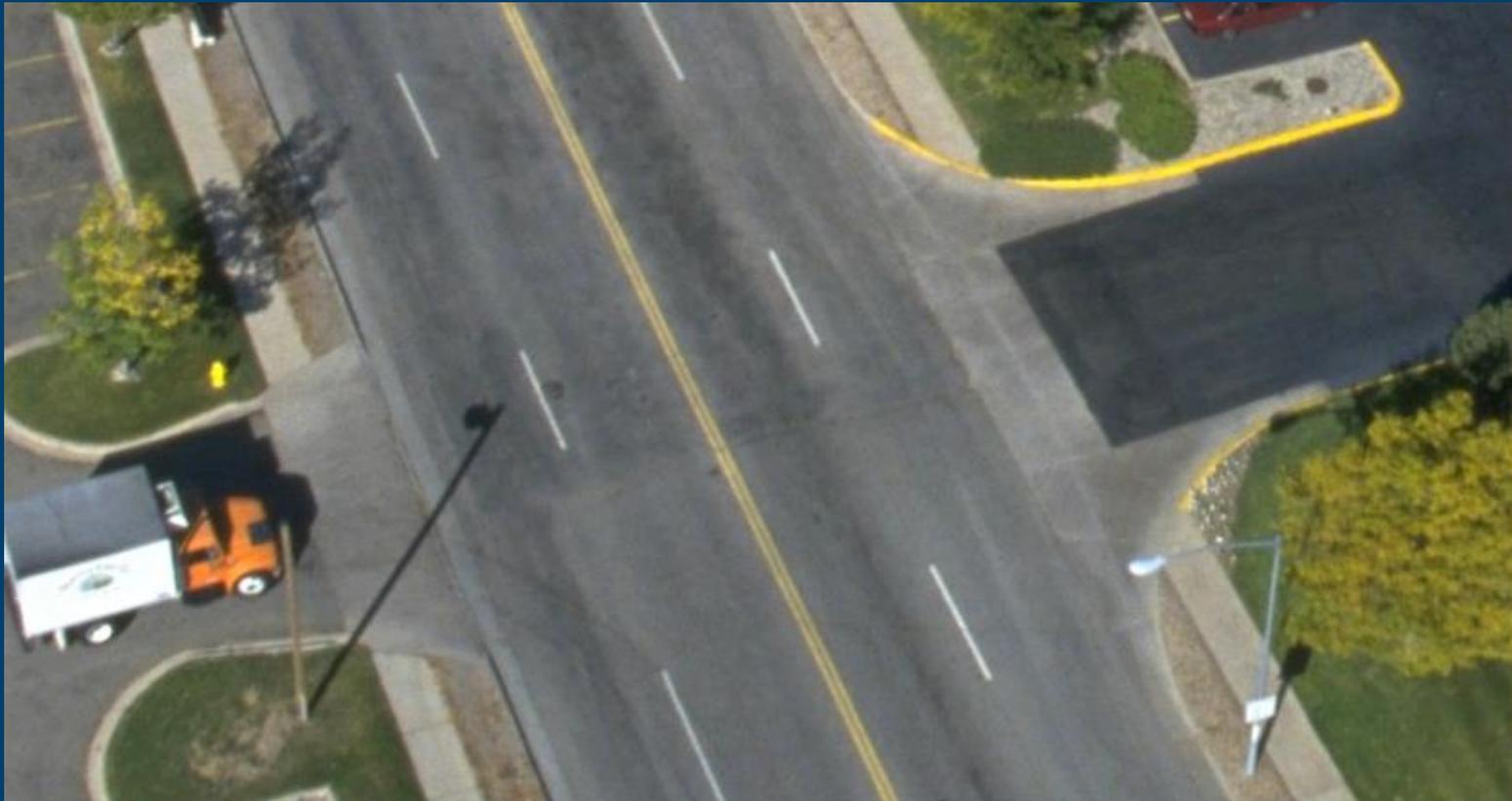
Fewer, well-spaced
traffic signals

Eliminate mid-block
left turns with a
raised median

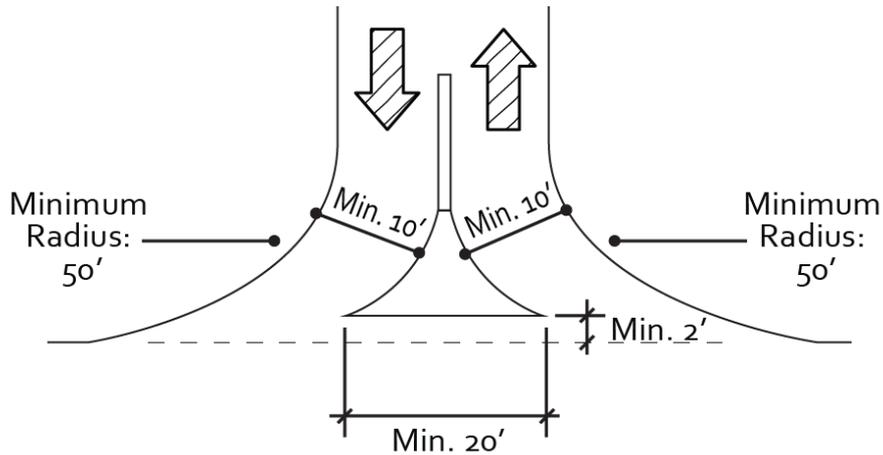
Old driveways are problematic



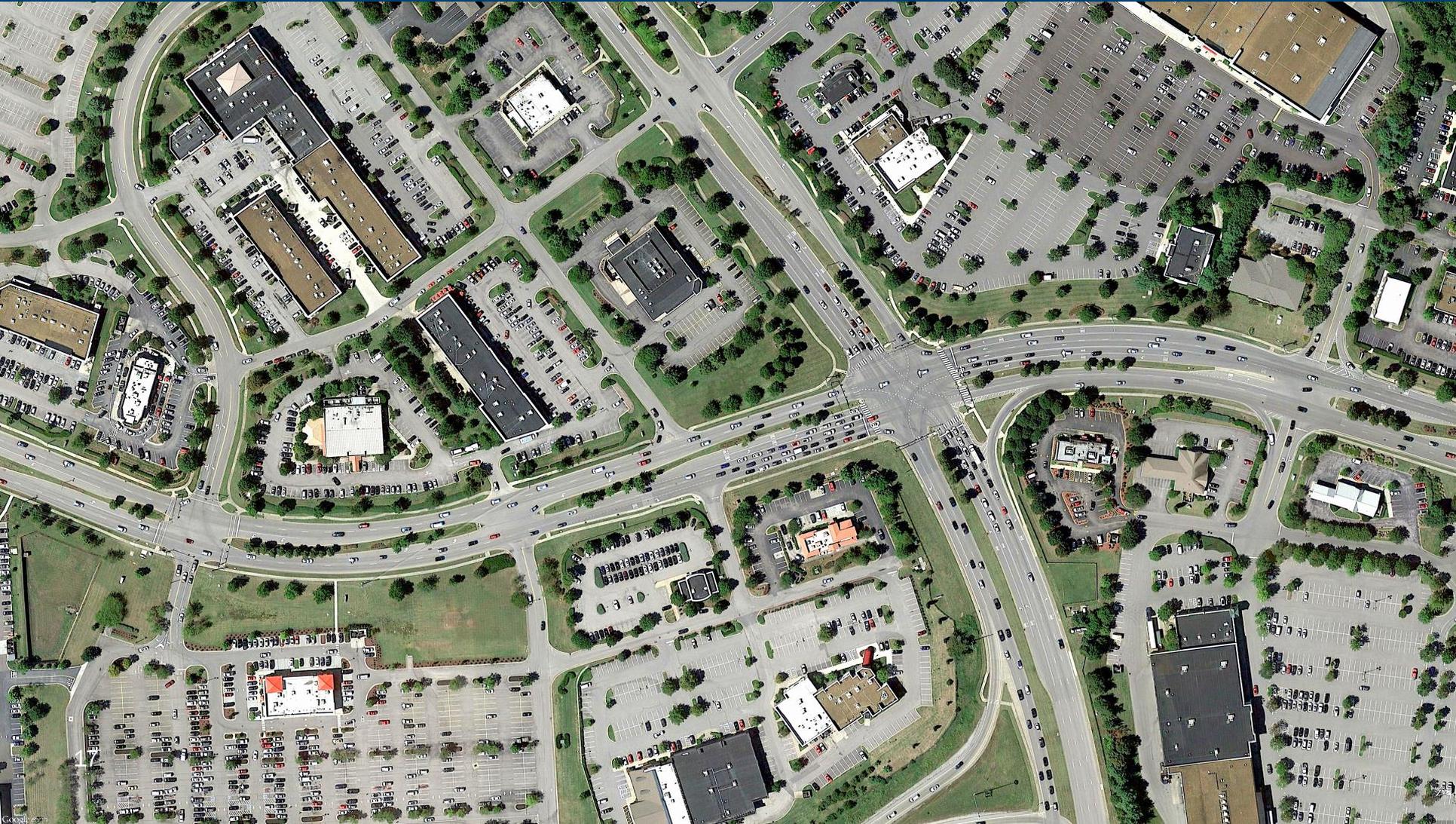
Newer designs have smoother flow and are easier to use



Right-turn only driveways with islands



Site and secondary circulation reduces driveway needs



A raised median would prevent a left turn attempt across 4 lanes of opposing traffic while also blocking others.



Combination of roundabouts and medians: High circulation and very low crash rates



When Access Management is Applied to a Specific Corridor



Crashes are reduced by 30–60 percent

Capacity is increased by 20–40 percent

East Bound on SR-96 at Royal Oaks

Losses and costs while traveling in Williamson County

Over 5,400 crashes in 2015
(About 15/day)

About \$87,900,000 in actual cost/loss in 2015

Expect more in 2016

More than 55% of these crashes are access related

Example: Murfreesboro Road (SR-96) west of I-65 to Mack Hatcher Parkway (5,800 ft)



830 reported crashes in 5 years (166 p/yr)

About \$2 million annually in crash costs

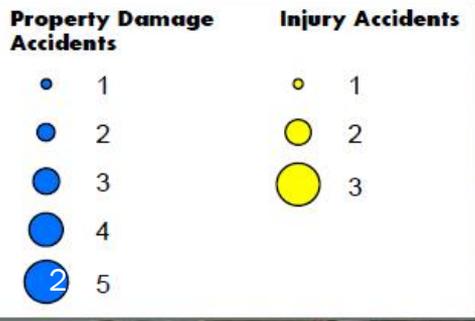
Median should reduce the crash frequency by about 40–50%.

Means about 400 fewer crashes in next 5 yrs.

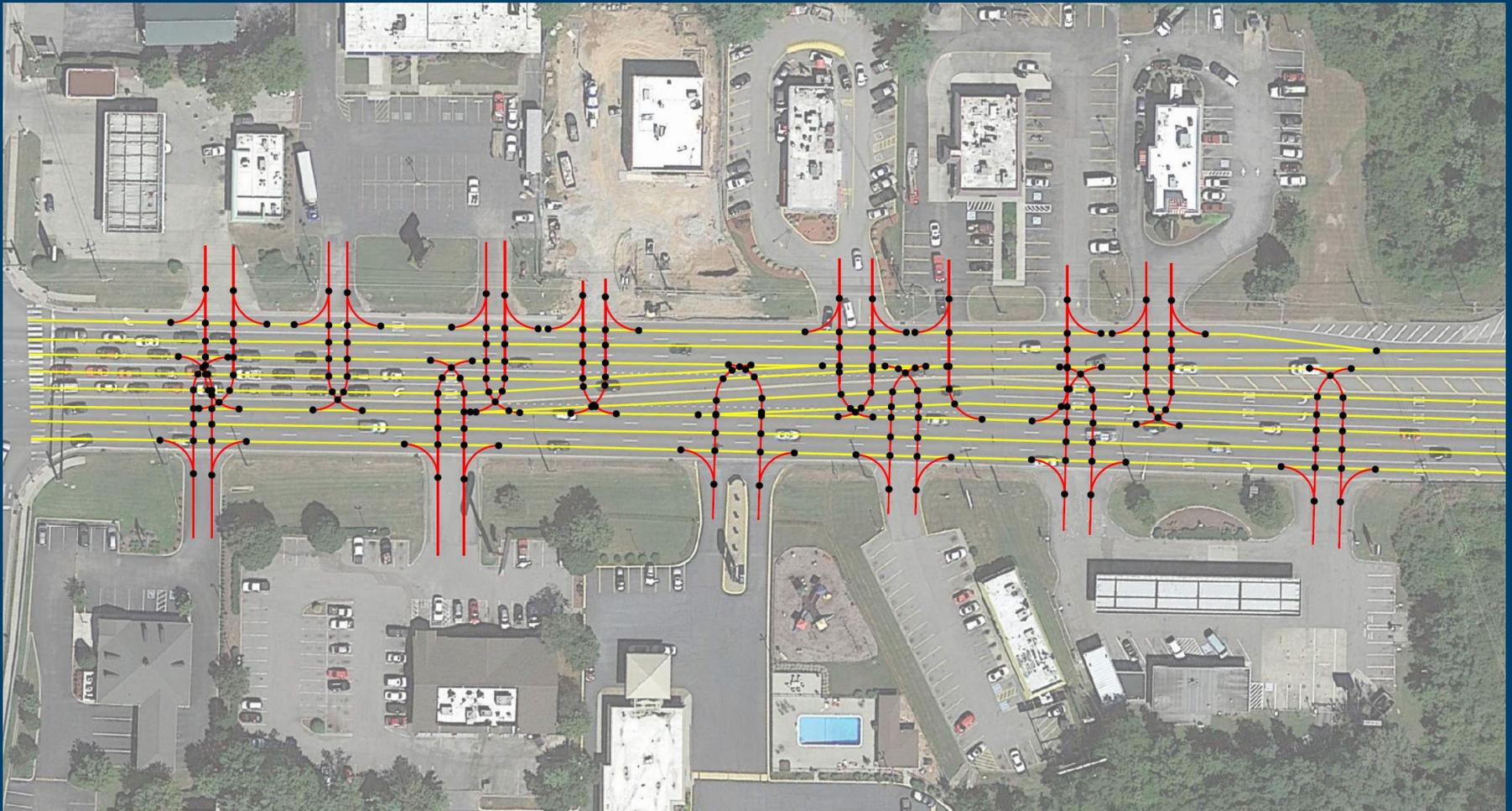
Fewer police, fire and medical responses

MURFREESBORO ROAD
(I-65 TO ROYAL OAKS)

14 driveways
(72 per mile rate)



A median would eliminate over 200 conflict points



Retail

Access management helps retail

Reduced road delays, less congestion, improved speeds

Make area attractive by landscaping

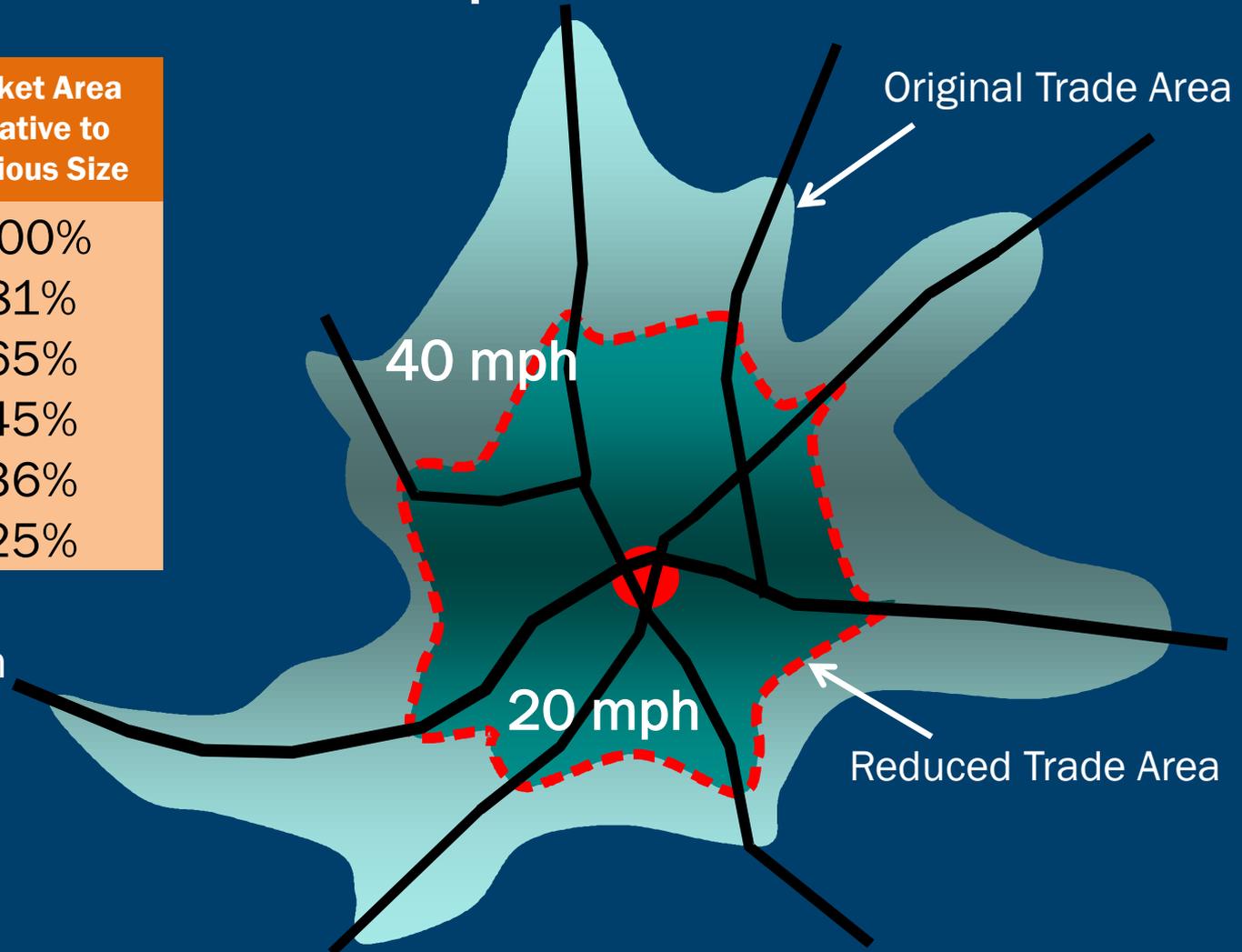
Improvement projects have positive impacts on property values

Studies, see handout, document either stable or increased land values for corridors after construction of access control management projects.

Retail will not be successful unless there is good employment, fat wallets.

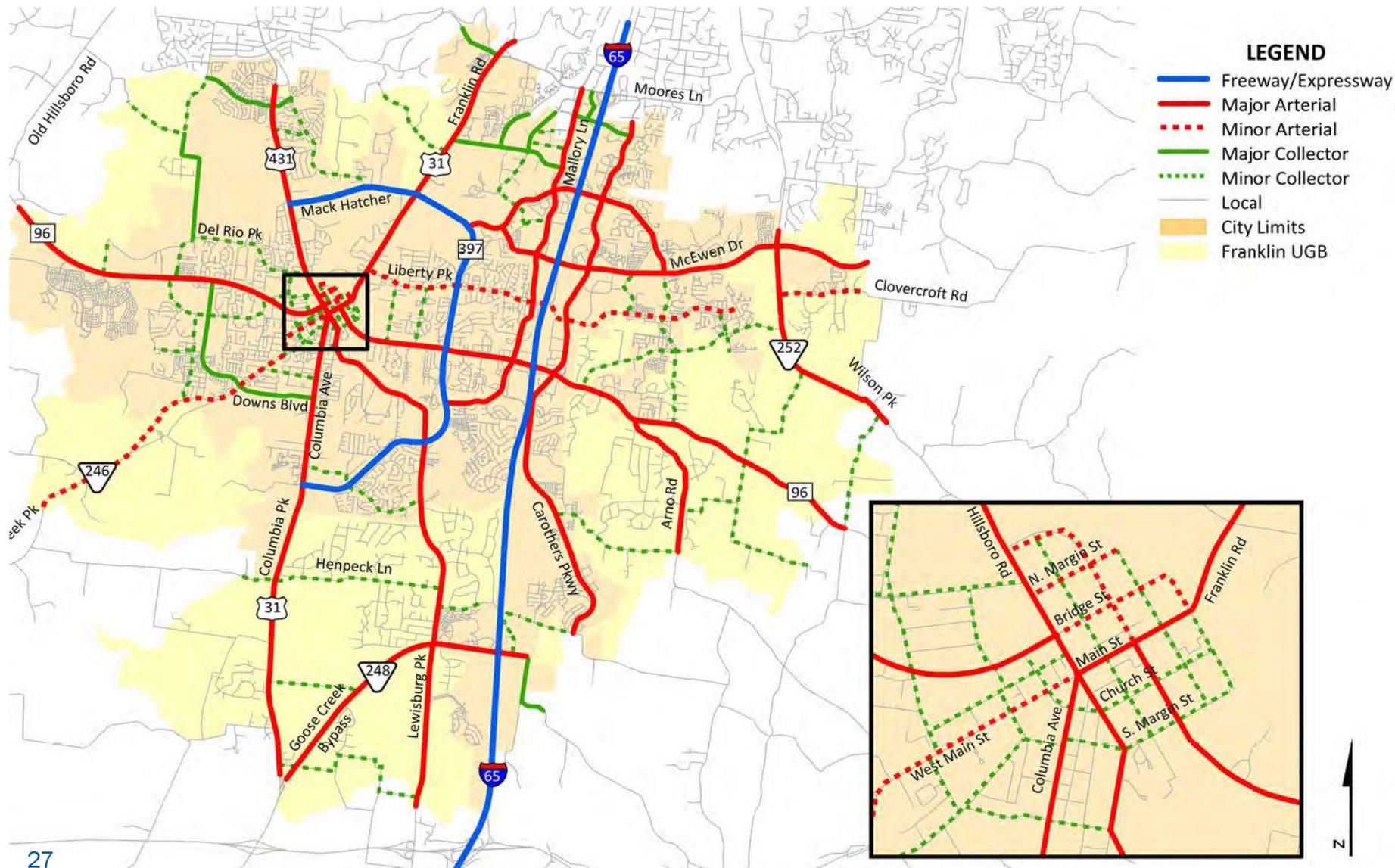
Market Area: Retail Market Area Shrinks as Arterial Speed is reduced

Reduction in Avg. System Speed	Market Area Relative to Previous Size
0%	100%
10%	81%
20%	65%
30%	45%
40%	36%
50%	25%



35 mph to 25 mph means over 50% reduction in market area

For Franklin, arterials are critical life-lines for the economy, the movement of commerce and labor.



Quality and Efficiency of Transportation Infrastructure

is, and will remain
a critical
component
economic success.

The purpose of
access
management is to
keep the arterial
system efficient
and safe.

Questions?

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