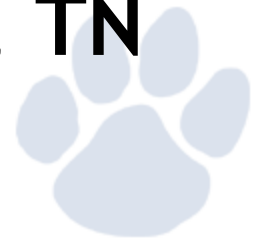


Walkable Communities: National Best Practices and Applications in Memphis, TN

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Agenda

- Walkable communities
 - Benefits/Challenges
 - Practices
 - Additional Resources
 - Policy
- Safe Routes to School
 - Frayser ES
 - Rozelle ES
- Strengthening Communities



Walkable Communities

Principles

- Compact mixed-use environment
- Connectivity
- Collaborative approach to design for all users

Practices

- **Context Sensitive Solutions**
- **Complete Streets**
- Smart Growth
- Sustainable Transportation



Source: www.pedbikeimages.org/; Dan Burden 2006

Why Walk-able Communities?

- Safety
 - Nearly 5,000 pedestrian/bicyclist fatalities annually
 - 110,000 pedestrian/bicyclist injuries annually
- Accessibility for special populations
 - 25% of population will be over 65 by 2025
 - Low income populations
 - Disabled persons
 - Children



Why Walk-able Communities?

- Reduce congestion
- Capacity benefits
- Air quality improvements/Climate change
- Improve property values
- Health
 - States with the lowest levels of walking and biking have the highest levels of obesity, diabetes, and high blood pressure (2010 Benchmarking Report, ABW)
 - More than 1/3 of our nation's children are obese
 - The CDC recently named Complete Streets policies as a recommended strategy to prevent obesity (CDC, 2009)



Why Walk-able Communities?

- Federal/state/local policies
 - HUD-EPA-DOT Partnership for Sustainable Communities
 - Provide more transportation choices.
 - Promote equitable, affordable housing.
 - Enhance economic competitiveness.
 - Support existing communities.
 - Coordinate and leverage federal policies and investment.
 - Value communities and neighborhoods.
 - USDOT Bicycle and Pedestrian Policy Statement
 - Consider walking and bicycling as equals with other transportation modes, including linkages to transit
 - Ensure convenient choices for people of all ages and abilities
 - Go beyond the minimum design standards



Why Walk-able Communities?

- Federal/state/local policies
 - Complete Streets Act of 2009
 - Defines effective complete streets policies that are flexible enough to use in daily transportation planning practice.
 - Directs state DOTs and MPOs to adopt such policies within two years of enactment of the bill and apply the policies to upcoming federally funded transportation projects.
 - Directs the US Department of Transportation to develop a mechanism to ensure compliance with the bill.
 - Updates current federal code on bicycle and pedestrian accommodation and authorizes needed research and data collection, technical assistance, and dissemination.
 - House bill (H.R. 1443); Senate bill (S. 584)



Why Walk-able Communities?

- Federal/state/local policies
 - TDOT Bicycle and Pedestrian Policy
 - *The policy of the Department of Transportation is to routinely integrate bicycling and walking options into the transportation system as a means to improve mobility and safety of non-motorized traffic. This policy pertains to both bicycle and pedestrian facilities. (Policy 530-01, 9/2004)*
 - TDOT - Goal is to fully implement complete streets policy over the next few years.
 - TN SRTS State Network - Complete Streets Policy Subcommittee



Walkable Communities

Benefits

- Safety
- Congestion
- Air quality
- Property value
- Health
- Crime reduction
- Stakeholder involvement

Challenges

- Existing infrastructure
- Cost
- Policy
- Lack of research



Context Sensitive Solutions (CSS)

Designing Walkable Urban Thoroughfares:
A Context Sensitive Approach, ITE 2010

Goals

- Flexibility
- Compatible/supportive of adjacent land uses
- Balanced land use/transportation functions
- Safe and attractive streets
- Multimodal facilities
- Streets that are quality public spaces



Tenets of CSS

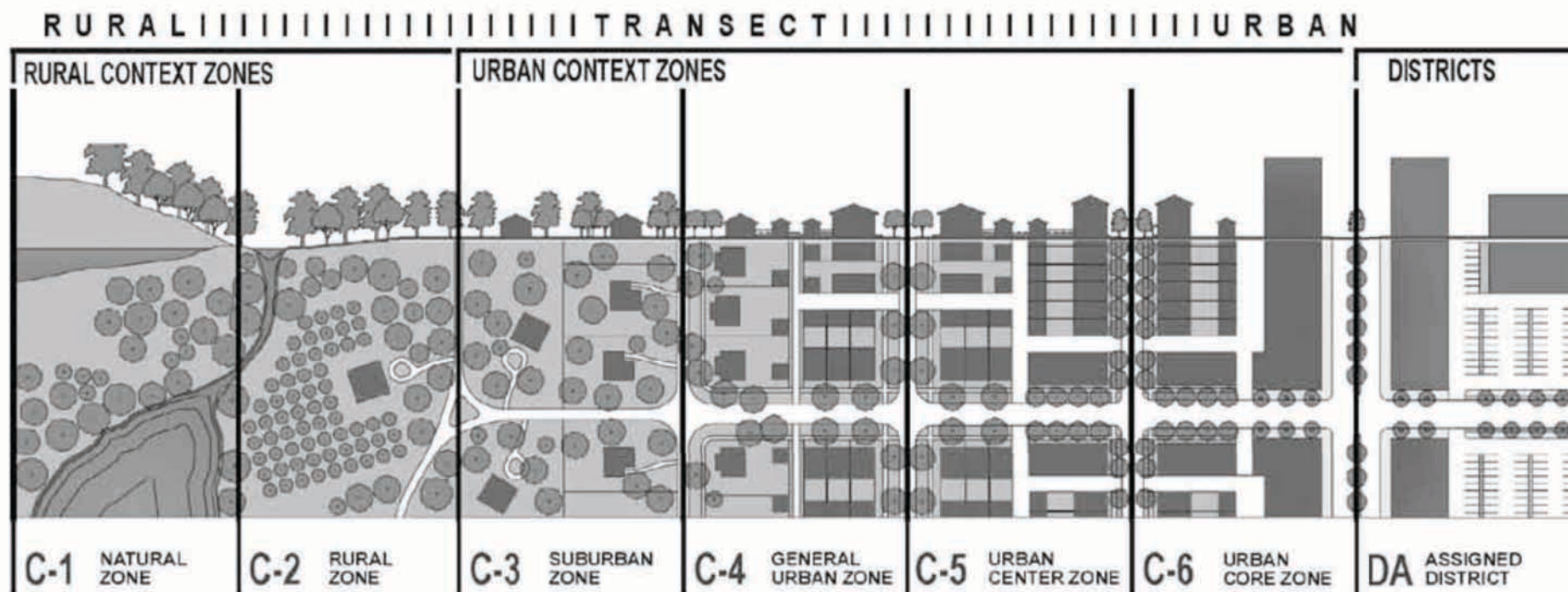
- Bring place and thoroughfare design together
- Balance
 - Safety
 - Mobility
 - Community objectives
 - Environment
- Multimodal
- Involve public, stakeholders
- Interdisciplinary teams
- Flexibility in design
- Incorporate aesthetics



Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Key Elements of CSS

Identify Context Zone



Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Key Elements of CSS

Identify Thoroughfare Type



Functional Classification	Thoroughfare Types						
	FREEWAY/ EXPRESS- WAY/PARK- WAY	RURAL HIGHWAY	BOULEVARD	AVENUE	STREET	RURAL ROAD	ALLEY/REAR LANE
Principal Arterial							
Minor Arterial							
Collector							
Local							

Shaded cells represent thoroughfare types that are not addressed in this report.

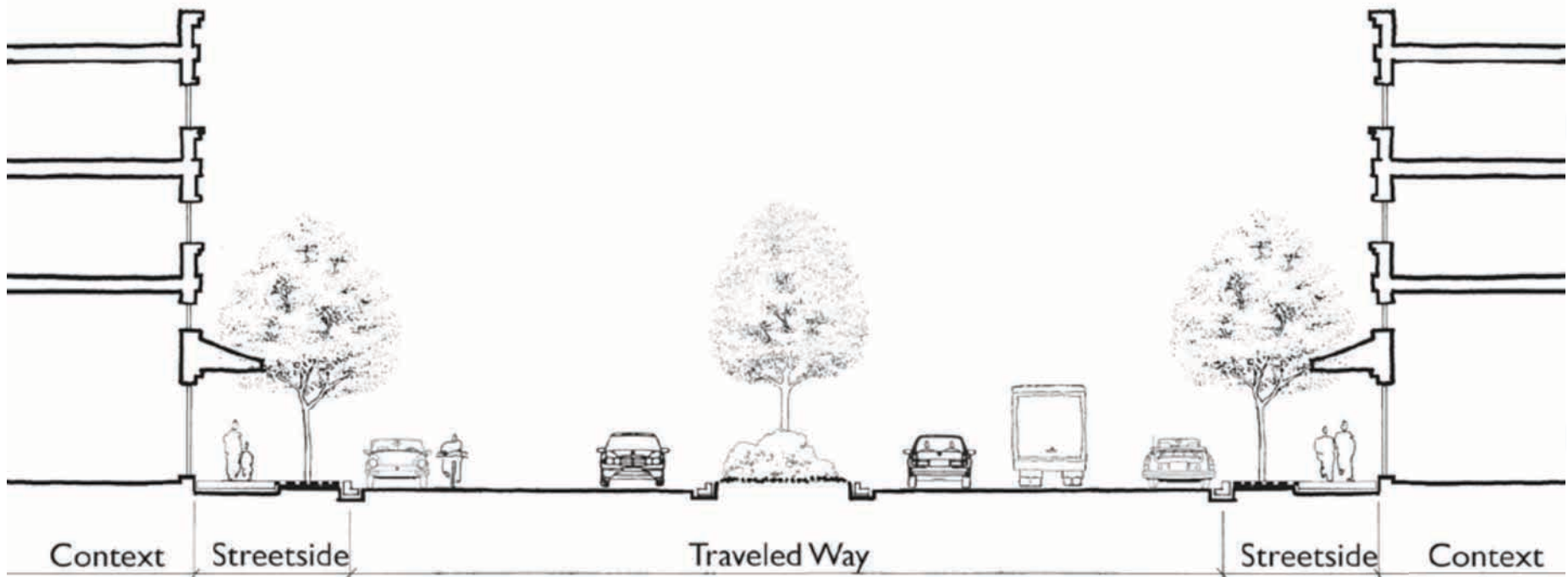
Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Thoroughfare Type	Functional Definition
Freeway/Expressway/ Parkway	Freeways are high-speed (50 mph +), controlled-access thoroughfares with grade-separated interchanges and no pedestrian access. Includes tollways, expressways and parkways that are high- or medium-speed (45 mph +), limited-access thoroughfares with some at-grade intersections. On parkways, landscaping is generally located on each side and has a landscaped median. Truck access on parkways may be limited.
Rural Highway	High-speed (45 mph +) thoroughfare designed both to carry traffic and to provide access to abutting property in rural areas. Intersections are generally at grade.
Boulevard (see Chapters 8, 9 and 10 for design guidance)	Walkable, low-speed (35 mph or less) divided arterial thoroughfare in urban environments designed to carry both through and local traffic, pedestrians and bicyclists. Boulevards may be long corridors, typically four lanes but sometimes wider, serve longer trips and provide pedestrian access to land. Boulevards may be high-ridership transit corridors. Boulevards are primary goods movement and emergency response routes and use vehicular and pedestrian access management techniques. Curb parking is encouraged on boulevards.
	Multiway boulevards are a variation of the boulevard characterized by a central roadway for through traffic and parallel access lanes accessing abutting property, parking and pedestrian and bicycle facilities. Parallel access lanes are separated from the through lanes by curbed islands with landscaping; these islands may provide transit stops and pedestrian facilities. Multiway boulevards often require significant right of way.
Avenue (see Chapters 8, 9 and 10 for design guidance)	Walkable, low-to-medium speed (25 to 35 mph) urban arterial or collector thoroughfare, generally shorter in length than boulevards, serving access to abutting land. Avenues serve as primary pedestrian and bicycle routes and may serve local transit routes. Avenues do not exceed 4 lanes, and access to land is a primary function. Goods movement is typically limited to local routes and deliveries. Some avenues feature a raised landscaped median. Avenues may serve commercial or mixed-use sectors and usually provide curb parking.
Street (see Chapters 8, 9 and 10 for design guidance)	Walkable, low speed (25 mph) thoroughfare in urban areas primarily serving abutting property. A street is designed to (1) connect residential neighborhoods with each other, (2) connect neighborhoods with commercial and other districts and (3) connect local streets to arterials. Streets may serve as the main street of commercial or mixed-use sectors and emphasize curb parking. Goods movement is restricted to local deliveries only.
Rural Road	Low speed (25 to 35 mph) thoroughfare in rural areas primarily serving abutting property.
Alley/Rear Lane	Very low-speed (5 to 10 mph) vehicular driveway located to the rear of properties, providing access to parking, service areas and rear uses such as secondary units, as well as an easement for utilities.



Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Key Elements of CSS



Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Key Elements of CSS

Term or Concept	Definition
Frontage Zone	One of the zones comprising the streetside, the frontage zone is the space between the pedestrian travel way and building faces or private property. At a minimum it provides a buffer distance from vertical surfaces or walls and allows people to window shop or enter/exit buildings without interfering with moving pedestrians. The frontage zone provides width for overhanging elements of adjacent buildings such as awnings, store signage, bay windows and so forth. If appropriate width is provided, the frontage zone may accommodate a variety of activities associated with adjacent uses, such as outdoor seating or merchant displays.
Throughway Zone	The streetside zone in which pedestrians travel. The throughway must provide a minimum horizontal and vertical clear area in compliance with PROWAG accessible route requirements.
Furnishings Zone	The furnishings zone is a multipurpose area of the streetside. It serves as a buffer between the pedestrian travel way and the vehicular area of the thoroughfare within the curbs, and it provides space for streetside appurtenances such as street trees, planting strips, street furniture, utility poles, sidewalk cafes, sign poles, signal and electrical cabinets, phone booths, fire hydrants, bicycle racks and bus shelters.
Edge Zone	The edge zone, sometimes also referred to as the "curb zone," is the transition area between the thoroughfare traveled way and the furnishings zone of the streetside and provides space for the door swing from vehicles in the parking lane, for parking meters and for the overhang of diagonally parked vehicles.
Right of way	Right of way is the publicly owned land within which a thoroughfare can be constructed. Outside of the right of way, the land is privately owned and cannot be assumed to be available for thoroughfare construction without acquiring the land through dedication or purchase.

Source: Designing Walkable Urban Thoroughfares: A Context Sensitive Approach, ITE 2010

Design Controls in CSS

- Design control - guide selection of design criteria
 - Speed (*target speed)
 - Design vehicle
 - Thoroughfare type, context, land use type
 - Sight distance
 - Horizontal/vertical alignment
 - Access management
 - Pedestrians and bicyclist accommodations



Complete Streets

- Premise - All streets (with appropriate functional class) should be designed and built for all users.
- ‘All’ users includes: pedestrians, bicyclists, transit vehicles and users, and motorists, of all ages and abilities.
- Complete streets solutions should fit within the context of the community.
- 183 jurisdictions across the nation have adopted formal Complete Streets policies.

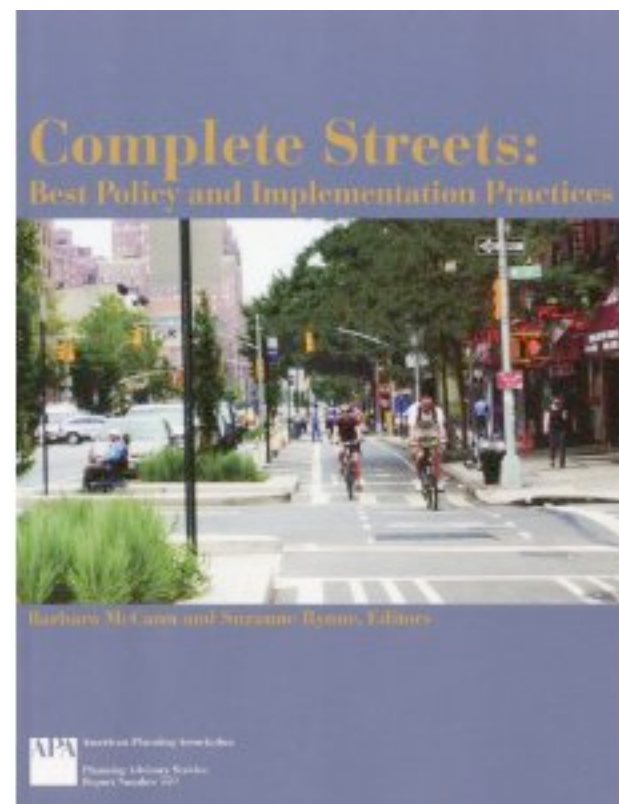


Complete Streets

APA Complete Streets: Best Policy and Implementation Practices, 2010



- Establish vision
- Include all modes
- Apply to all transportation projects
- Incorporate CSS principles
- Identify exclusions and processes for approval
- Identify steps for implementation
- Provide for flexibility





Source: National Complete Streets Coalition



Source: National Complete Streets Coalition



Source: National Complete Streets Coalition

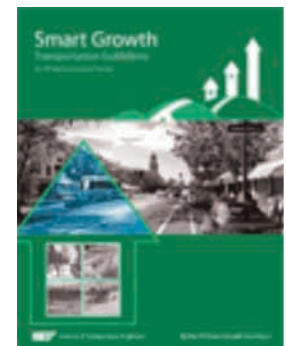




Source: National Complete Streets Coalition

Additional Guidance

- Urban Street Geometric Design Handbook, ITE 2009
- Promoting Sustainable Transportation Through Site Design: An ITE Recommended Practice, 2010
- Smart Growth Transportation Guidelines: An ITE Recommended Practice, 2010
- Planning Complete Streets for an Aging America, AARP 2009
- Complete Streets Design Guidelines, 2009 GSP for Knoxville TPO
- www.completestreets.org
- <http://www.fhwa.dot.gov/context/>



Safe Routes to School (SRTS)



Safe Routes to School (SRTS)

- National Safe Routes to School Program was established in 2005
- Federally funded through SAFETEA-LU
- \$612 million over FY 2005-2009

Goal: To provide support and funding for changes to communities to make walking and bicycling to school a safe and more popular activity



Safe Routes to School Requirements

The 5 E's

- Engineering
- Enforcement
- Encouragement
- Education
- Evaluation



Safe Routes to School

- *A pedestrian hit by a vehicle traveling 20 mph has a 95 percent chance of surviving. If the vehicle is traveling at 30 mph, chances of survival decrease to 55 percent. At 40 mph, only 15 percent of pedestrians can expect to survive.*
- *Constructing sidewalks on streets near schools can drastically increase pedestrian safety for children and their families. Studies reveal that pedestrians are more than twice as likely to be struck by a vehicle in locations without sidewalks.*



Safe Routes to School: Putting Safety First (2009)

Safe Routes to School

- *Infrastructure improvements for traffic calming have been shown to reduce the risk of pedestrian-vehicle conflicts by 25-66%.*
- *Safe Routes to School programs can increase walking and bicycling to school by 20%.*
- *Safe Routes to School programs are most effective when implemented in conjunction with local Complete Streets policies.*



Project Partners

- U of M Faculty and Students:
 - Department of City and Regional Planning
 - Department of Civil Engineering
 - School of Public Health
- City of Memphis
- Memphis City Schools



Project Goals

- Collaborative cross-disciplinary effort to develop innovative solutions to existing problems faced by MCS includes these issues:
 - connectivity
 - walkability
 - pedestrian safety
- Avoid “one size fits all” mentality
- Identify methods to maximize benefits while minimizing costs



Frayser Elementary

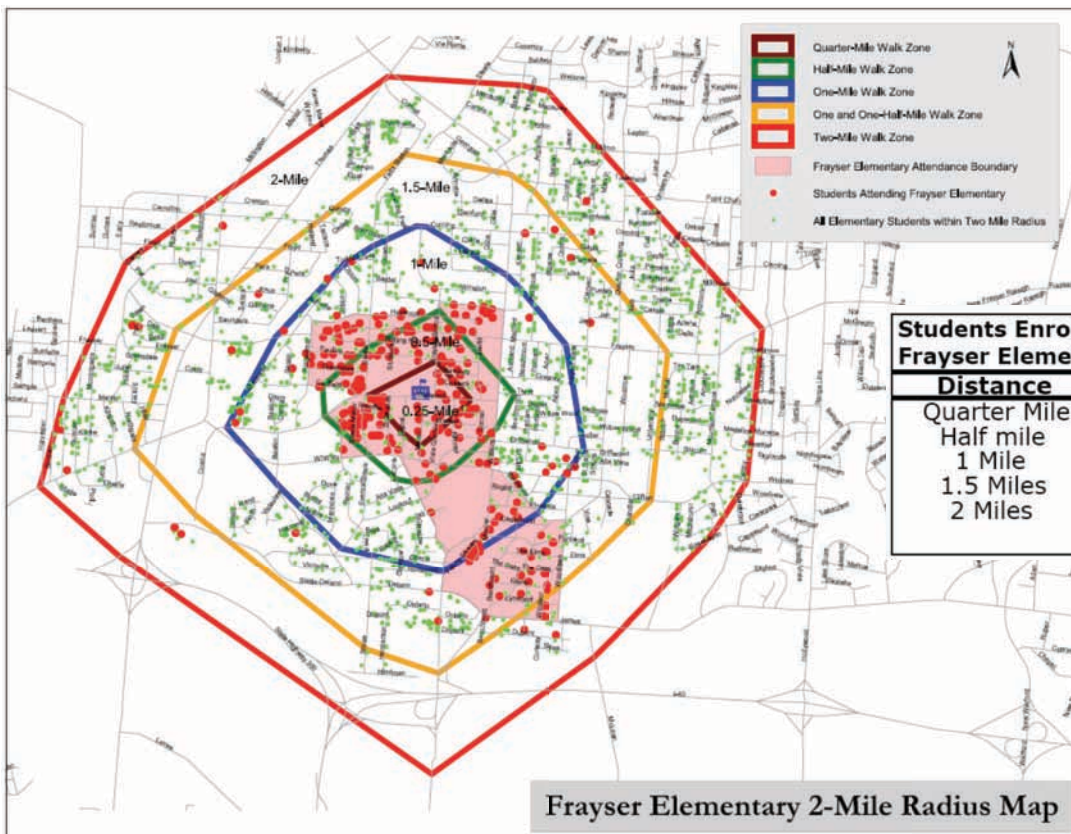
- First application funded for MCS (2007)
- Located on Dellwood Avenue
 - 3 lanes with 35 mph speed limit
 - 60 feet wide curb to curb
 - Sidewalks in good condition
 - On-street parking not allowed
 - Two separate school speed zones
- Approximate enrollment 550



Frayser Elementary



Frayser Elementary



Students Enrolled at Frayser Elementary School by Distance from School
Frayser Elementary - 1602 Dellwood Ave.

<u>Distance</u>	<u>Number of Students</u>
Quarter Mile	40
Half mile	173
1 Mile	146
1.5 Miles	52
2 Miles	23

Frayser Elementary

- Arterial and collectors with relatively high speeds
- High school traffic
- Faded crosswalks
- Vehicles stopping to drop off children in center lane
- Students crossing in areas without crosswalks

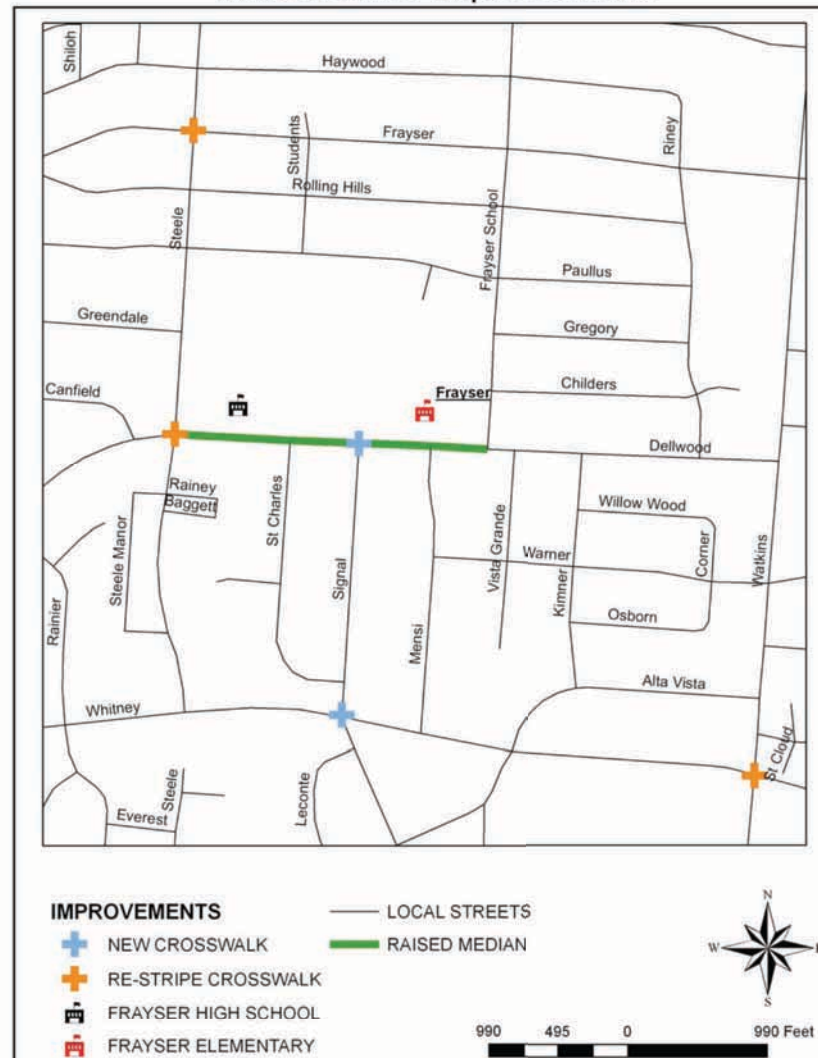


Frayser Elementary

- Fall 2009 data collection recorded speeds of up to 50 mph in school zones
- High school / elementary school no longer have staggered schedules
- Buses no longer provided within 1.5 miles of school
- Project slated to be built in 2011



Frayser Elementary Proposed Infrastructure Improvements

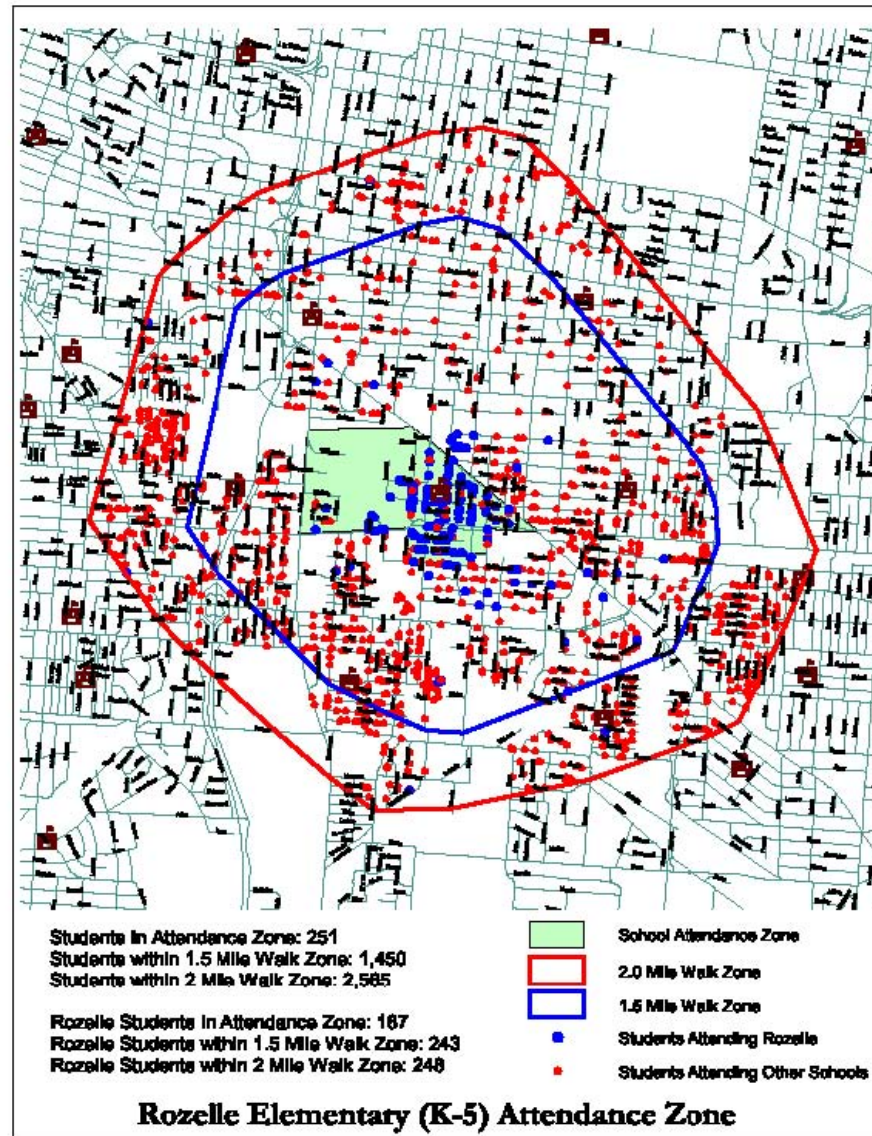


Rozelle Elementary

- 2008 City of Memphis Application
- Located on Roland St.
 - 2 lane, 35 mph speed limit
 - Parking prohibited in front of school
 - Crossing guard informally makes street one-way during drop-off/pick-up
- Approximately 300 students







Existing Conditions in Rozelle Elementary School Area



Rozelle ES Area Land Uses

Residential	Yellow
Child Day Care	Dark Blue
School	Light Blue
Church	Medium Blue
Commercial	Red
Warehouse	Gray
Industrial	Dark Gray
Accessory Use	Purple
Unknown	Orange
Vacant/Streets	White

Source: Shelby County
Assessor's Data file, 2006



Rozelle Elementary

- Deteriorated and Missing Sidewalks
- Traffic issues
 - Speeds above 15 mph recorded in school zone
 - Four lane traffic on Lamar Ave.
 - Heavy axle vehicular traffic volume and travel on residential streets
 - Railroad crossings in vicinity of school
- Student Issues
 - Students avoiding sidewalks because of poor condition
 - Students crossing Lamar Ave.
 - Students crossing railroad tracks along Southern Ave.



Rozelle Elementary



Rozelle Elementary

Engineering Solutions

- Replace deteriorated and missing sidewalks
- Install three (3) bricked appearance crosswalks at
 - Roland St. south of Felix Ave. across from school entrance
 - Walker Ave. west of Roland St.
 - Roland St. north of Walker Ave.
- Upgraded signage



Where are we going from here?

- Frayser Elementary data collection / Rozelle
- Urban area survey - MCS
- Tennessee SRTS State Network



Strengthening Communities

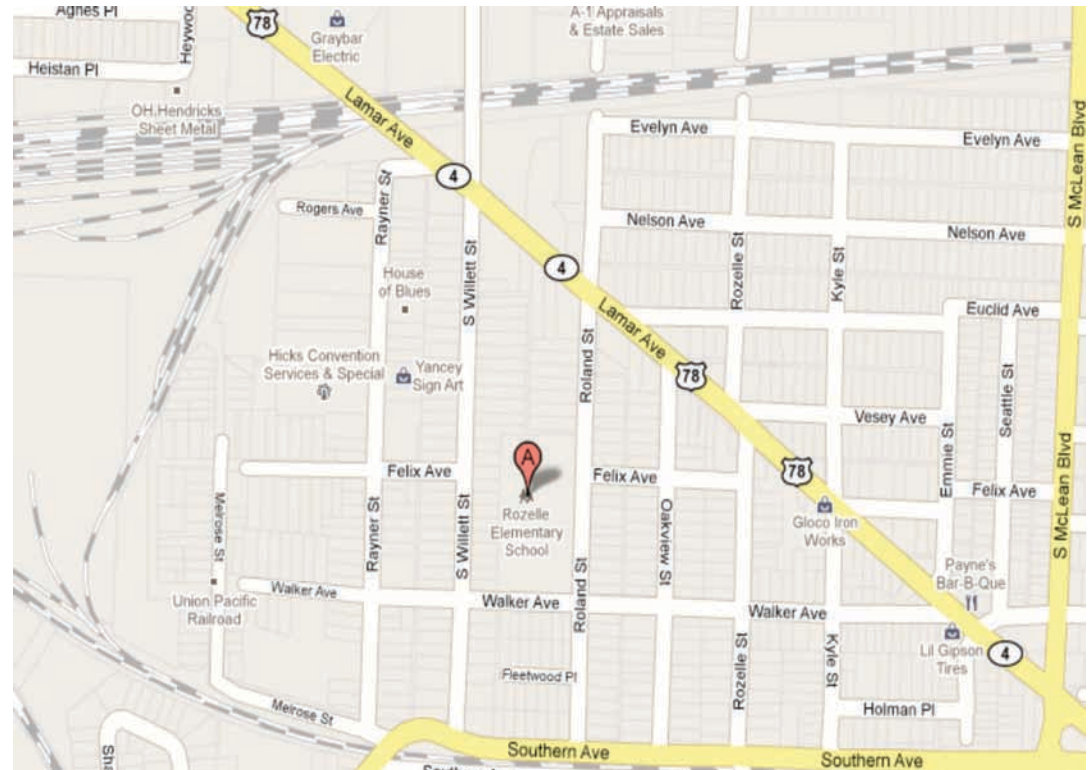
Rozelle-Annesdale Neighborhood Transportation Plan



Project Partners



- Pigeon Roost Development Corporation
- U of M Civil Engineering and Anthropology departments
- Rozelle-Annesdale Area Association
- Cooper-Young District CDC
- City of Memphis



Project Purpose

- To create a plan for a walkable community for RA residents
 - Due to the decrease in resident foot traffic, there has been a dramatic loss of social capital. This loss of social capital has lead to an increase in crime and a loss of community identity.
 - The sidewalks are in poor condition and leave no alternative other than walking in the street.
 - The residential streets that intersect Lamar are at skewed angles, posing a significant traffic safety issue. (Lamar introduces heavy vehicle traffic to the neighborhood).



Methodology

- Assessment of the neighborhood transportation conditions through:
 - Neighborhood surveys (pre, transportation, post)
 - Sidewalk inventory
 - Traffic counts for key corridors/intersections



Findings

- Three critical ‘places’ identified: McLean Blvd., Rozelle School, neighborhood park
- 85th percentile speeds near schools ~40 mph during school hours
- 33% of residents said traffic safety was their biggest concern in walking or bicycling in the neighborhood.
- More than 90% of residents think traffic safety and neighborhood security are the most important factors for standard of living in the neighborhood.
- Residents rated neighborhood streets, particularly McLean as poor for walking and biking.



Outcomes

- Formal, well-documented plan used for advocating for transportation infrastructure changes
 - McLean - bike lanes (narrowed traffic lanes), sidewalk improvements, patterned crosswalks, improved bus stop facilities, upgraded signage, gateway improvements, and other improvements in the area
 - Rozelle - sidewalk improvements, patterned crosswalks, upgraded signage, routing changes
- Recommendations for sustainable transportation practices, traffic calming and neighborhood involvement



Outcomes

- New website for the neighborhood organization that improves communication with residents
- Grassroots guide worksheet
- Nearly 90% of residents surveyed indicated proposed improvements would make them more likely to walk, bicycle; 70% more likely to be involved in other neighborhood projects
- Nearly \$200,000 in private donations/grants obtained to support gateway, urban art, Rozelle Elementary statue



Summary

- Complete Streets/ CSS emphasize design for all users
- Collaborative approach
 - Engineers
 - Planners
 - Politicians
 - Community stakeholders
- Local policy impacts effectiveness



Questions?

