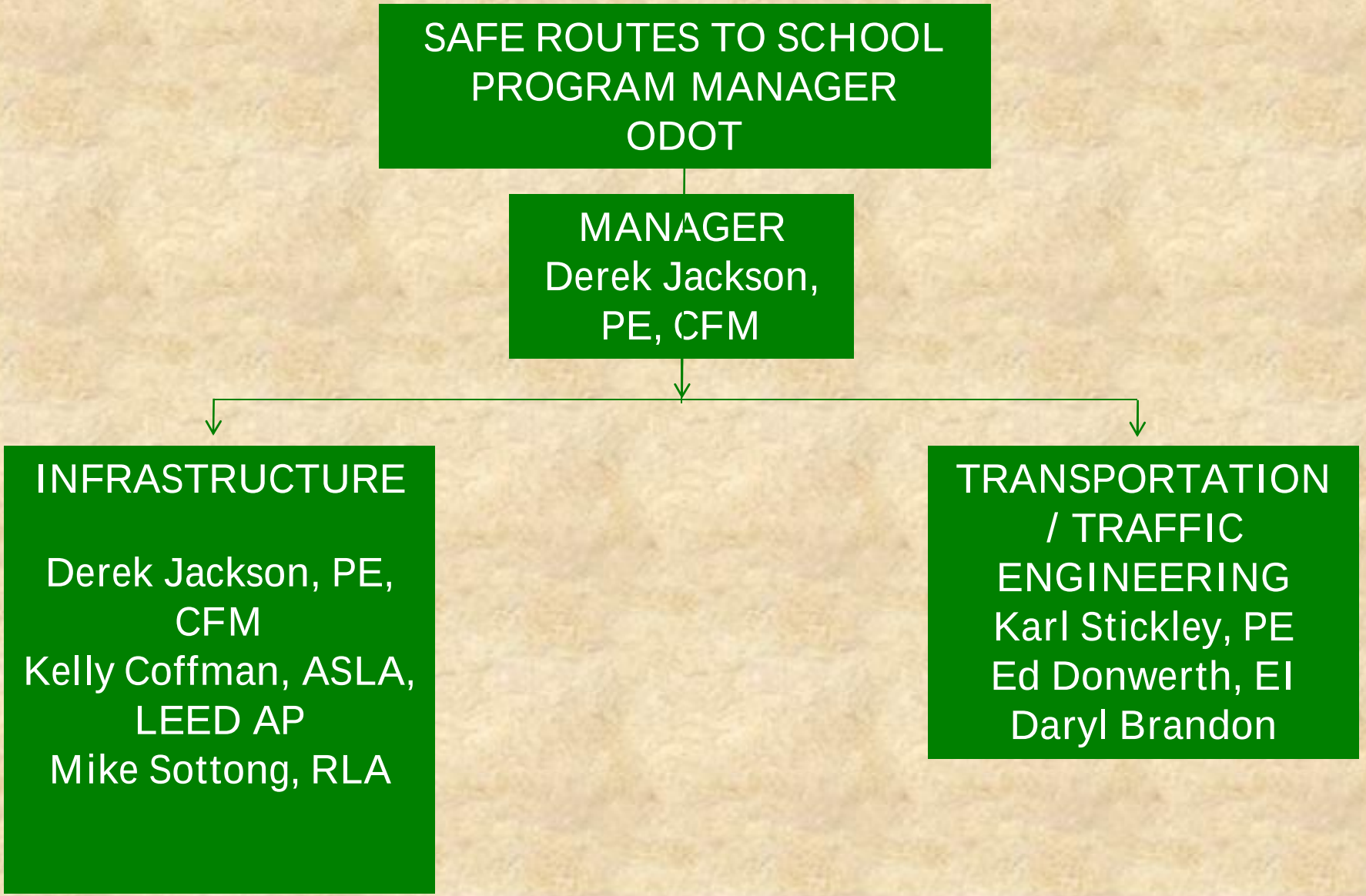
OKLAHOMA DEPARTMENT OF TRANSPORTATION

SAFE ROUTES TO SCHOOL PROJECT
KICK-OFF MEETING
JACKSON & JACKSON ENGINEERING
C.H. GUERNSEY & COMPANY

TEAM ORGANIZATION

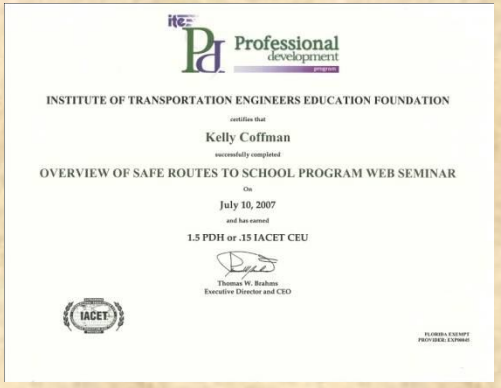


Team Member Qualifications

- **Derek Jackson, P.E., CFM**
  - 19 Years Experience in construction, contract administration, and design
  - Eight years as City Engineer for Midwest City
  - Three years as OKC Residency Engineer
  - Staff Member of the Midwest City Traffic and Safety Commission
  - Project implementation, management and coordination
  - Public meetings and city council presentations
  - Completed National SRTS Instructor Training

Team Member Qualifications

- **Kelly Coffman, ASLA, LEED AP**
  - 20 Years Experience
  - Project management and coordination
  - Experience with municipalities, ODOT, and stakeholder groups
  - Public meetings, outreach, and education
  - Attended SRTS and Complete Streets Training
  - School site design experience
  - Knowledge of sustainable design and planning principles
  - Completed National SRTS Instructor Training


Professional development

INSTITUTE OF TRANSPORTATION ENGINEERS EDUCATION FOUNDATION

certifies that

Kelly Coffman

successfully completed

OVERVIEW OF SAFE ROUTES TO SCHOOL PROGRAM WEB SEMINAR

On

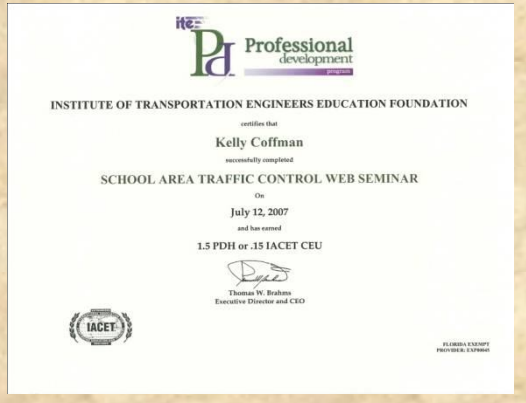
July 10, 2007

and has earned

1.5 PDH or .15 IACET CEU

Thomas W. Brahms
Executive Director and CEO

IACET


Professional development

INSTITUTE OF TRANSPORTATION ENGINEERS EDUCATION FOUNDATION

certifies that

Kelly Coffman

successfully completed

SCHOOL AREA TRAFFIC CONTROL WEB SEMINAR

On

July 12, 2007

and has earned

1.5 PDH or .15 IACET CEU

Thomas W. Brahms
Executive Director and CEO

IACET


Certificate of Completion

Complete the Streets

American Planning Association's webcast

Complete Streets

has been completed by:

Kelly Coffman

on 14 February 2007

sponsored by the Oklahoma Chapter of the American Planning Association

Continuing Professional Development: 3

APA

hosted by C.H Guernsey & Company. Oklahoma City, OK

Team Members

- **Karl Stickley, PE, Civil Engineer**
  - 34 Years Experience
  - Extensive experience transportation / traffic engineering
  - Experience: ODOT, municipalities, and private development
  - Schools: Sunset Elementary, Edmond, OK; Sequoyah Middle School, Edmond, OK; OSU/OKC; University of Central Oklahoma, Edmond, OK
- **Mike Sottong, RLA**
  - 8 Years Experience
  - Planning, landscape architecture, traffic calming
- **Daryl Brandon, Sr. Design Technician**
  - 36 Years Experience
  - Extensive experience traffic engineering design/transportation
  - Experience: ODOT, municipalities, and private development

Relevant Team Experience

- Sidewalks and Pedestrian Improvements
- ADA Contractor Certification course
- ODOT Enhancement Projects
- Planning and Community Outreach
- School Specific
- Traffic Calming
- Public Outreach and Involvement

SRTS FUNDING CATEGORIES:

- Infrastructure related activities
  - Sidewalk improvements
  - Traffic calming and speed reduction improvements
  - Pedestrian and bicycle crossing improvements
  - On-street bicycle facilities
  - Off-street bicycle and pedestrian facilities
  - Secure bicycle parking facilities
  - Traffic diversion improvements

CONSULTANT ROLE

- Assist ODOT
- Promote Best Practices
- Link Sponsors and Resources
- Communicate
- Advocate for Program
- Facilitate Projects for Successful Grant Implementation

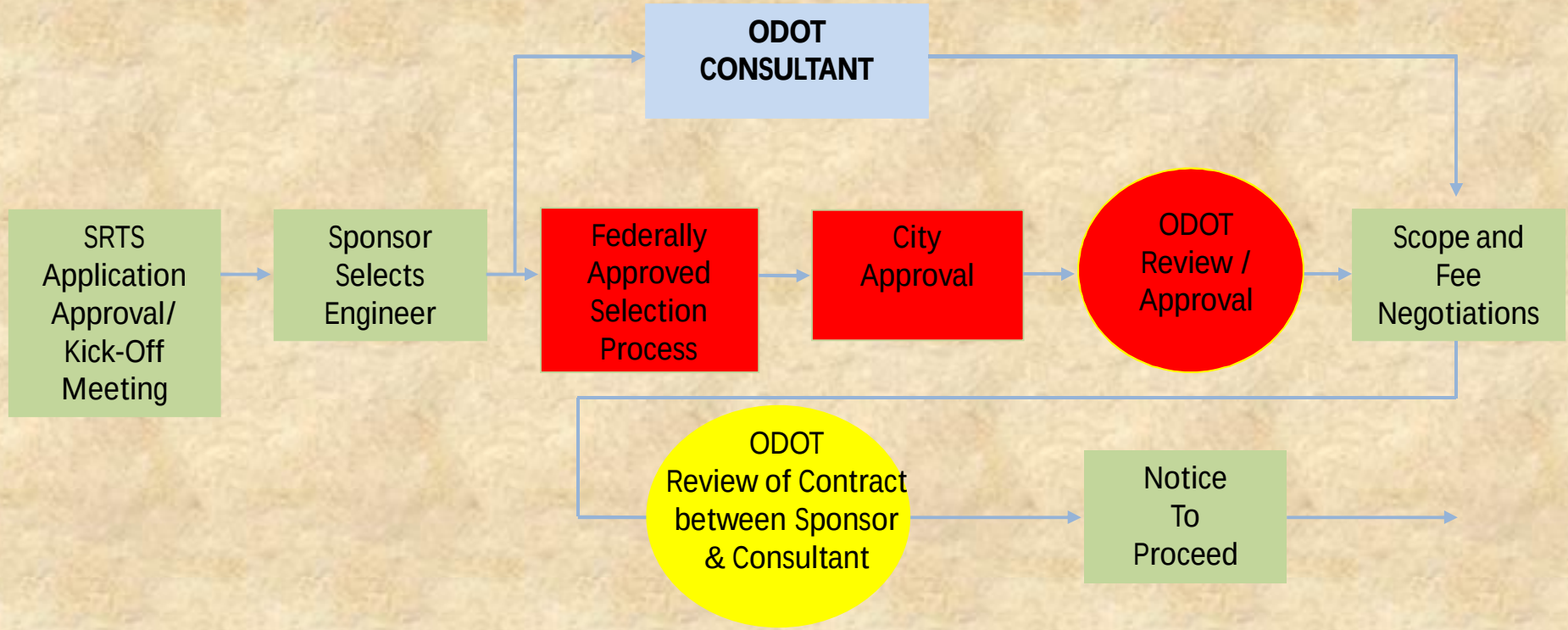
Project Design and Management

- Complete Project Within Two Years
- Define Scope of Work/Contract Agreement
- Environmental Clearance
- Plan-in-Hand/Field Review
- Right-of-Way/Utility
- Final Design

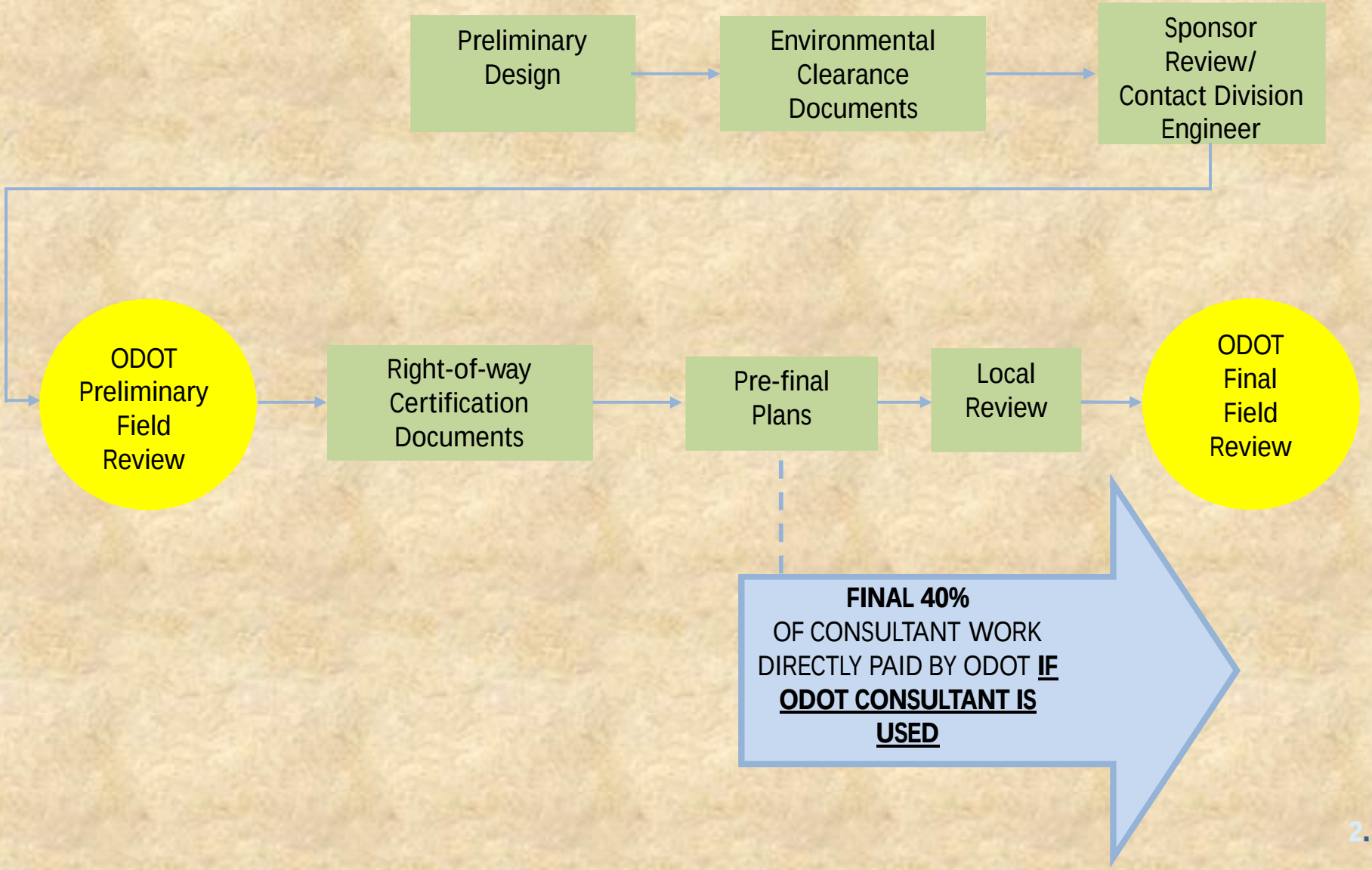
Project Design and Management

- Construction and Bidding Process
- Advertisement
- Pre-Bid
- Bid Opening
- Bid Award
- Notice to Proceed
- Pre-Construction Meeting
- Start Construction

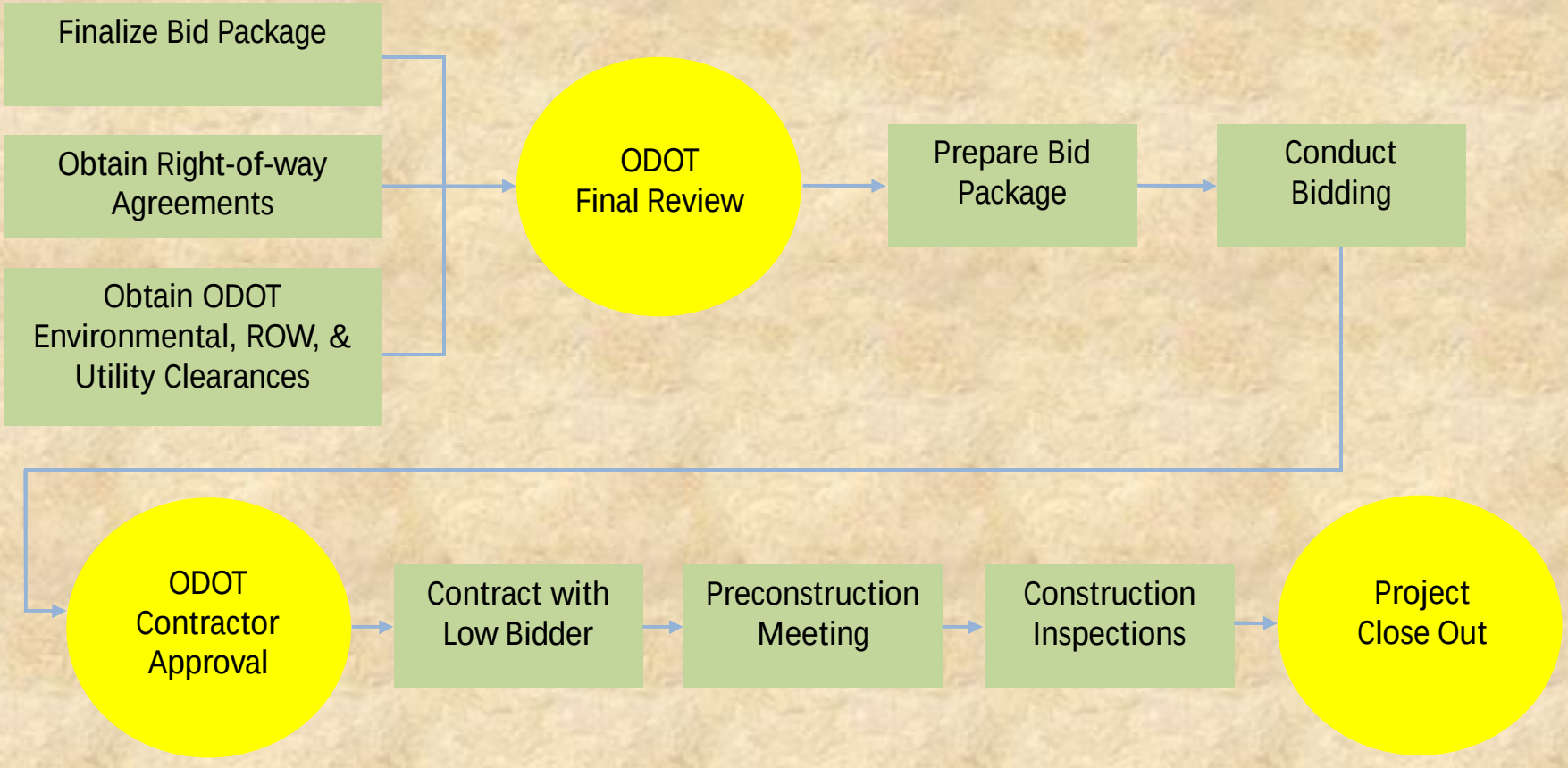
IMPLEMENTING YOUR SRTS PROJECT



IMPLEMENTING YOUR SRTS PROJECT

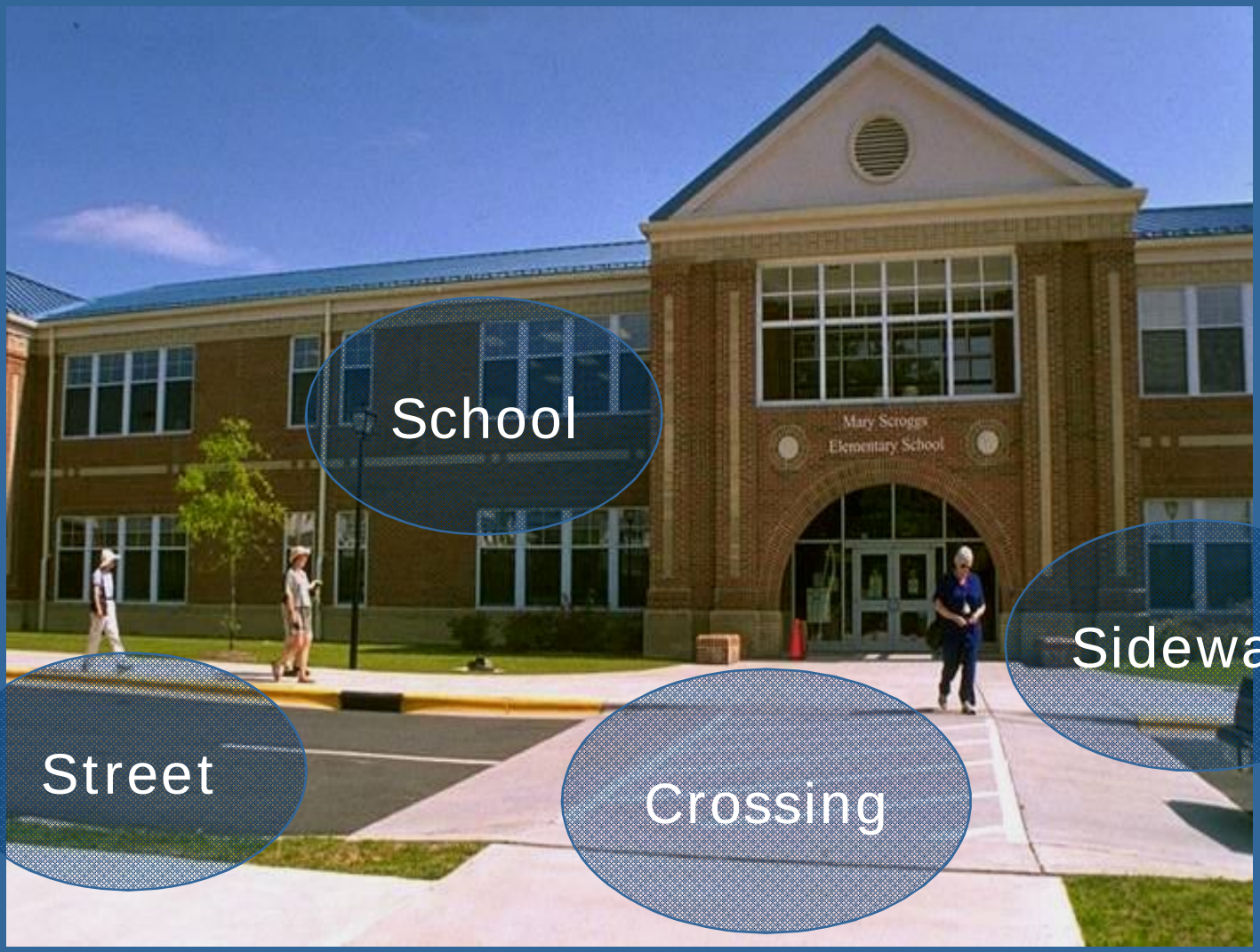


IMPLEMENTING YOUR SRTS PROJECT



Engineering Treatments and Strategies

Relationships are everything



Creating safe routes with engineering

- Improve children's safety
- Improve accessibility
- Encourage more bicycling and walking

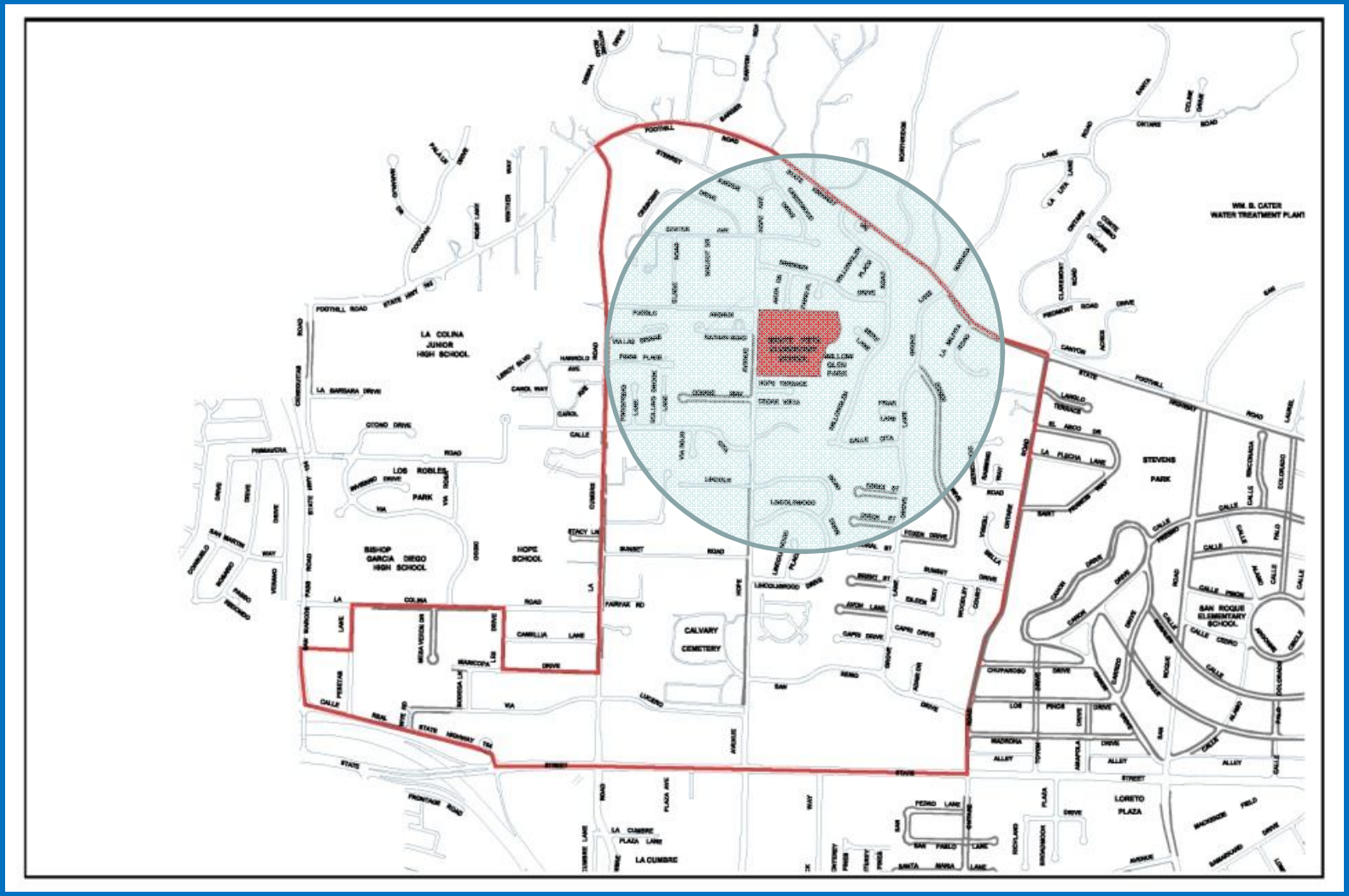
Walkways and crossings: Prerequisites for walking

Engineering topic outline

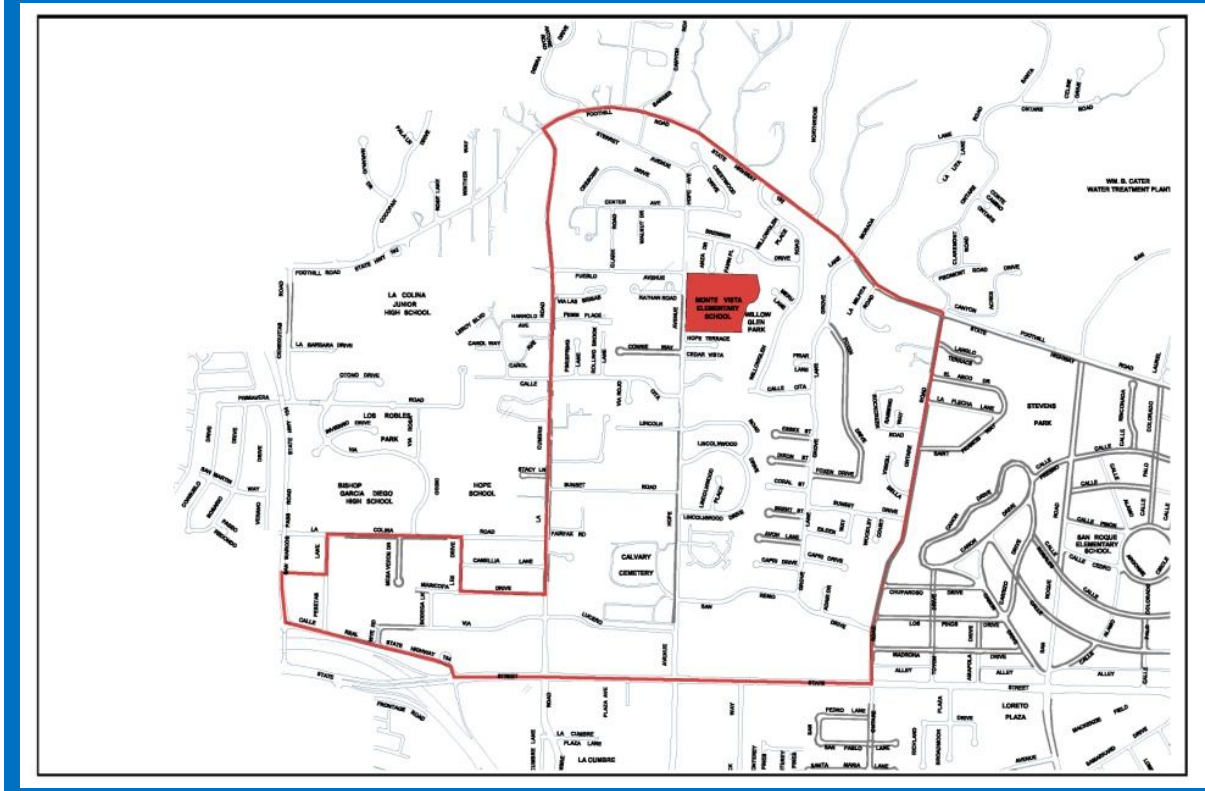
- **Around the School**
- Along the School Route
- Crossing the Street
- Slowing Down Traffic

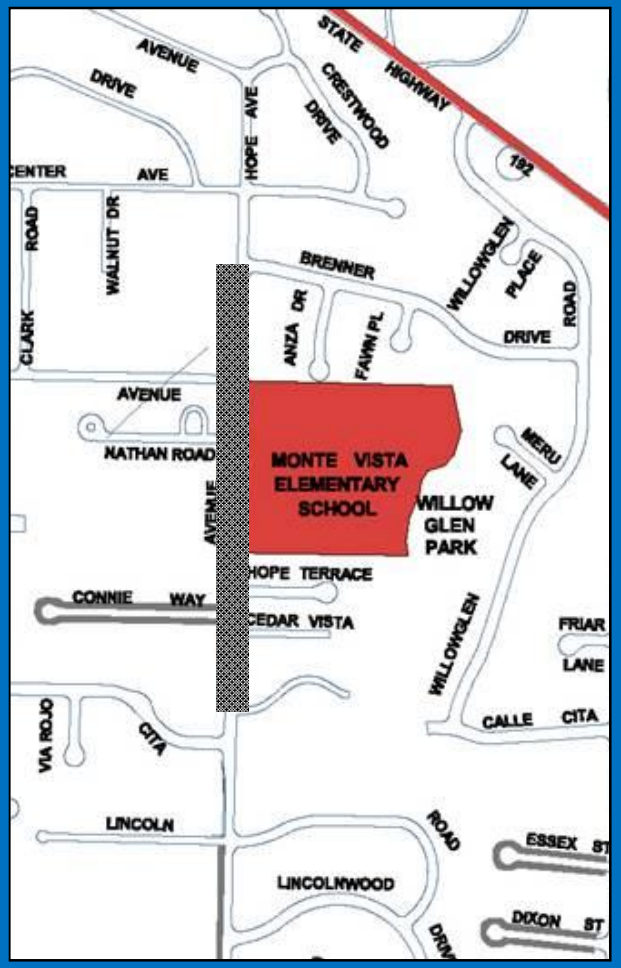
School enrollment boundary

School walk zone



School zone


MONTE VISTA ELEMENTARY SCHOOL
WILLOW GLEN PARK
LA COLINA JUNIOR HIGH SCHOOL
BISHOP GARCIA DIEGO HIGH SCHOOL
HOPE SCHOOL
CALVARY CEMETERY
SAN ROQUE ELEMENTARY SCHOOL
STEVENS PARK
LORETO PLAZA
WM. B. CATER WATER TREATMENT PLANT

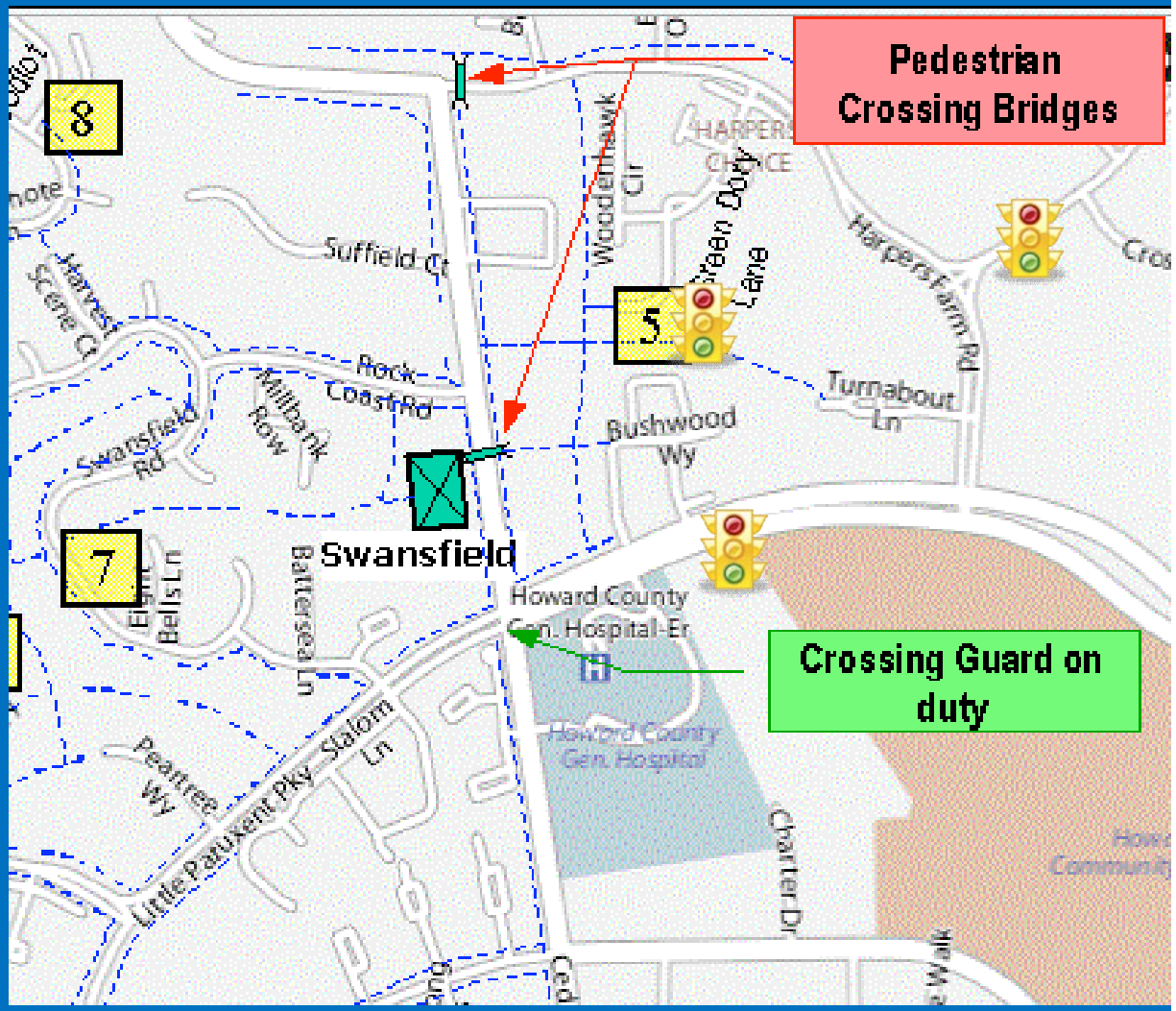

STATE HIGHWAY 192
AVENUE
DRIVE
CRESTWOOD DRIVE
HOPE AVE
CENTER AVE
CLARK ROAD
WALNUT DR
BRENNER
WILLOWGLEN PLACE ROAD
DRIVE
ANZA DR
FAWN PL
AVENUE
NATHAN ROAD
MONTE VISTA ELEMENTARY SCHOOL
WILLOW GLEN PARK
MERU LANE
AVENUE
HOPE TERRACE
CONNIE WAY
CEDAR VISTA
WILLOWGLEN
FRIAR LANE
CALLE CITA
VIA ROJO
CITA
LINCOLN
ROAD
ESSEX ST
LINCOLNWOOD
DIXON ST

Existing conditions map

Sidewalks and pathways

Walking school bus locations

6



Signing and marking the school zone

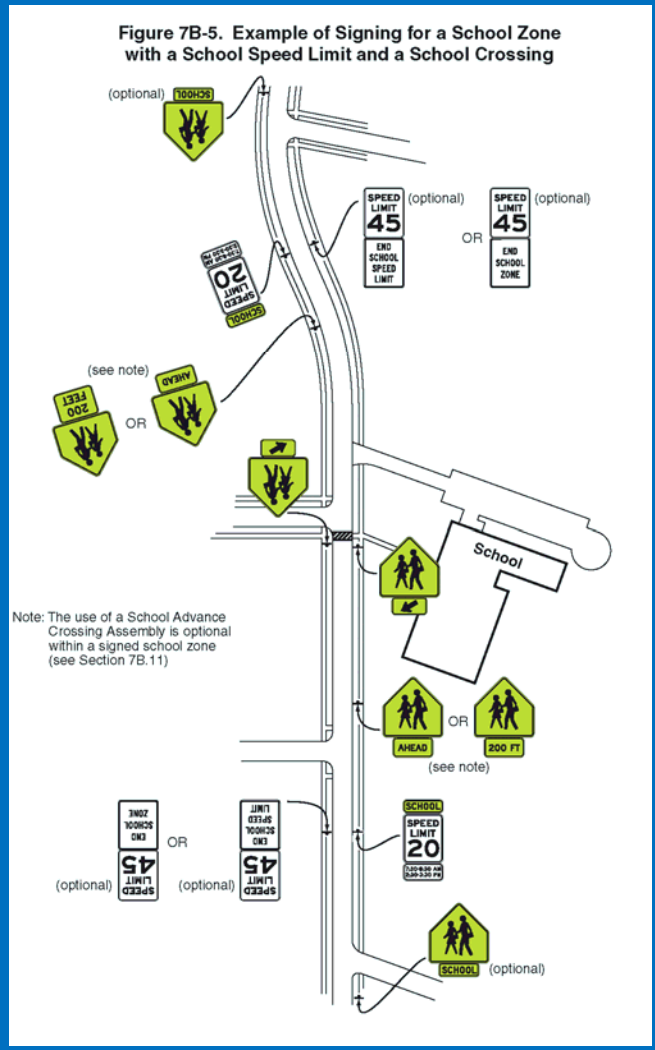
Manual on

Uniform

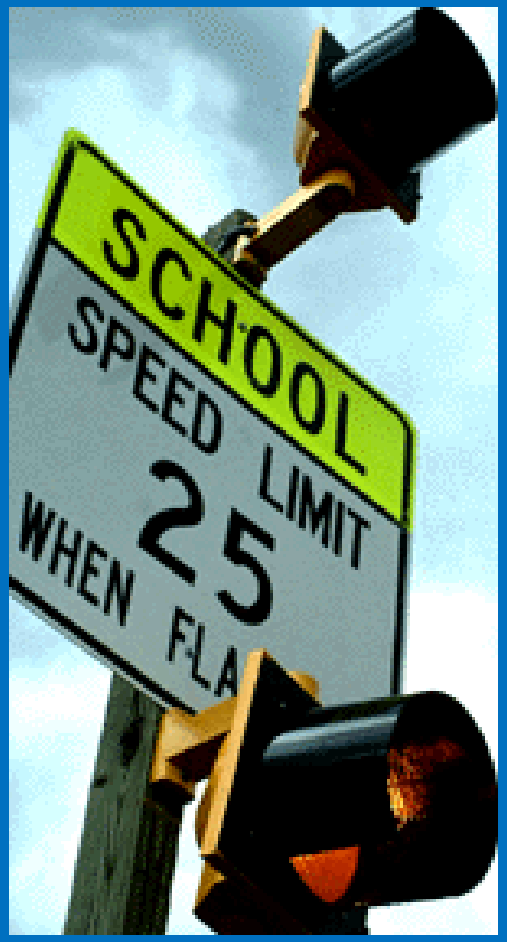
Traffic

Control

Devices



School area speed limit signing

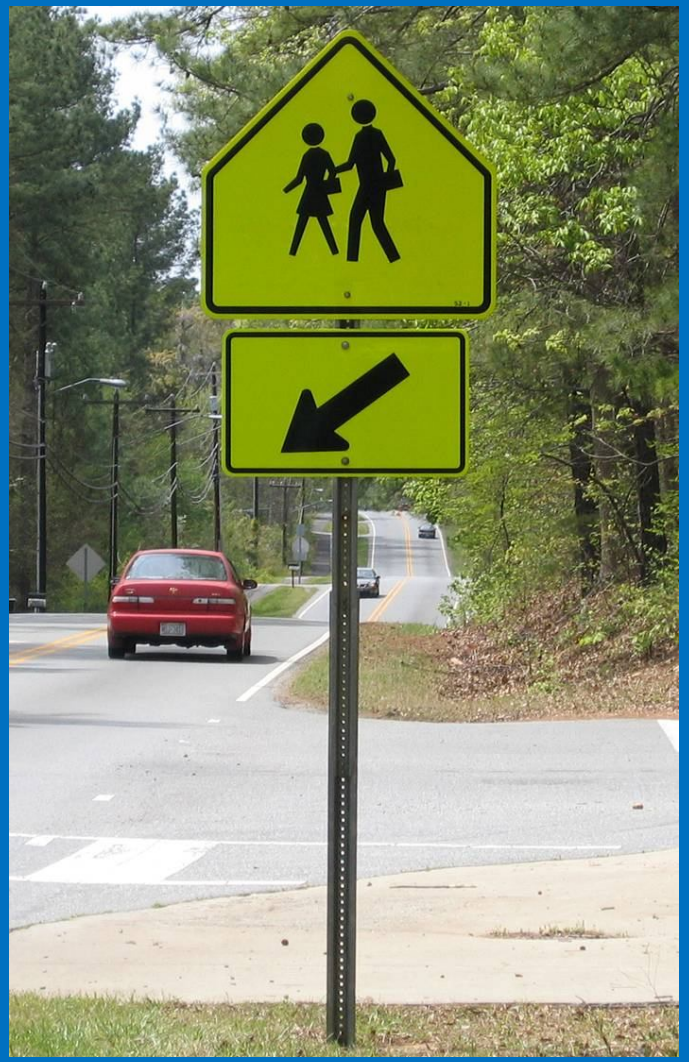


School flasher and reduced speed limit sign

Overhead school flasher/speed sign

Changeable message signs

School crosswalk signs and advance warning signs



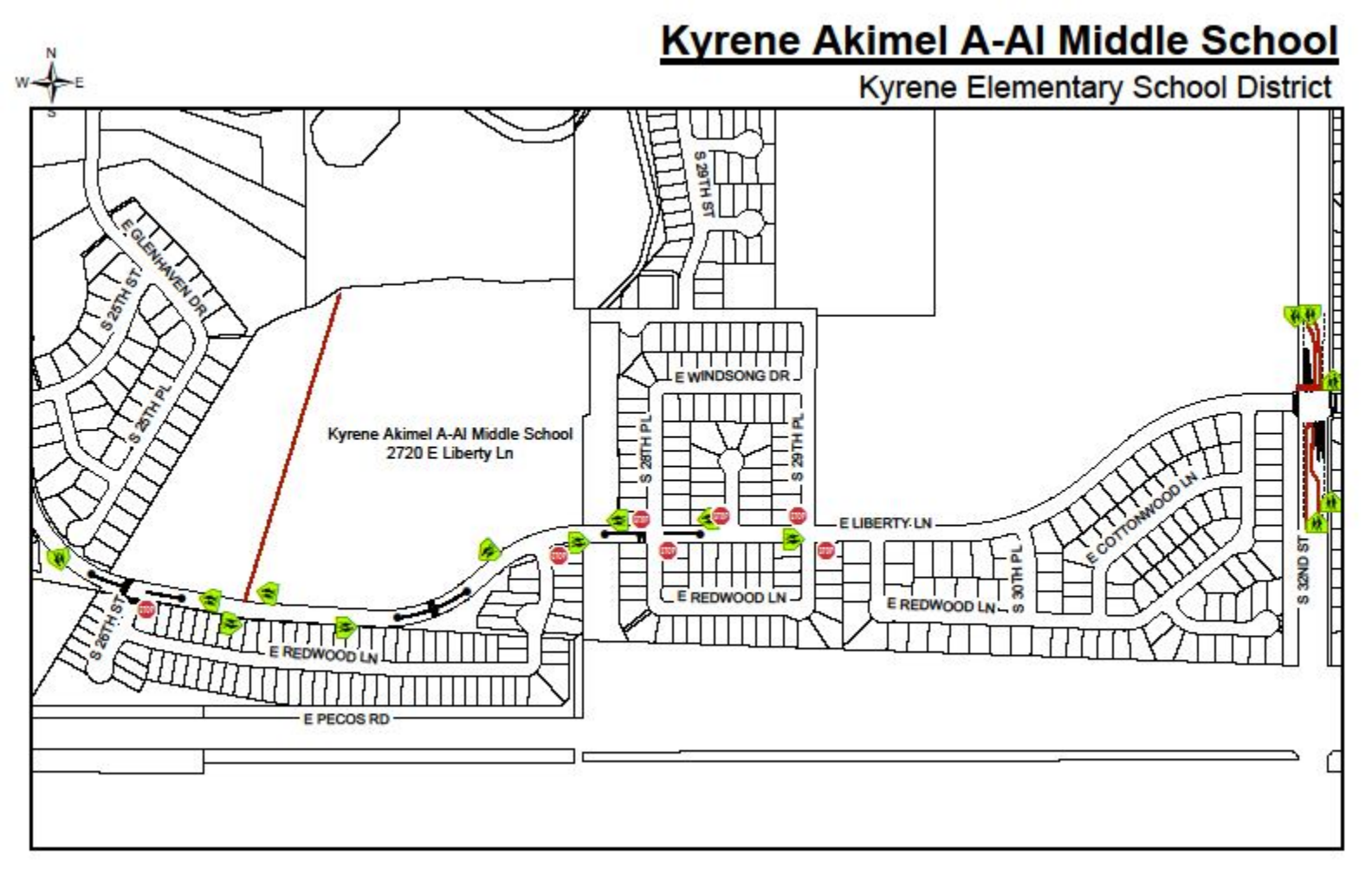
Fluorescent yellow-green post covers

old style

new style

School pavement markings

Sample school traffic control plan



Engineering topic outline

- Around the School
- **Along the School Route**
  - **Sidewalks**
  - **On-street bicycling**
  - **Pathways**
  - **Connectivity**
- Crossing the Street
- Slowing Down Traffic

Sidewalks are essential

Sidewalks on both sides is preferred

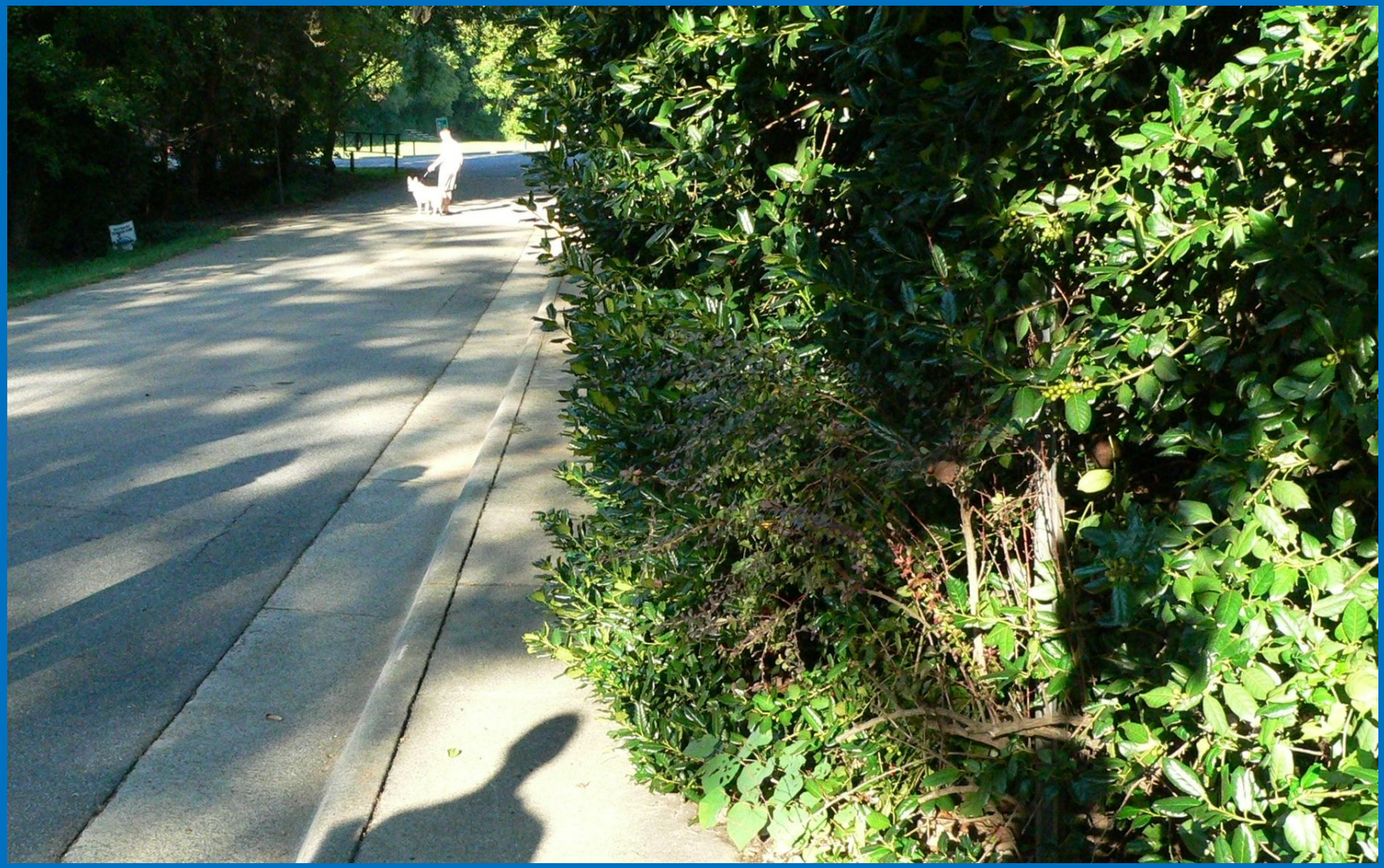
Sidewalk design criteria

Connect all sidewalks in the school walking route

Accommodate pedestrian desire lines outside of splash zones

Provide sidewalk buffers

Maintain landscaping to provide clear walkways and sight distances



Install street lighting

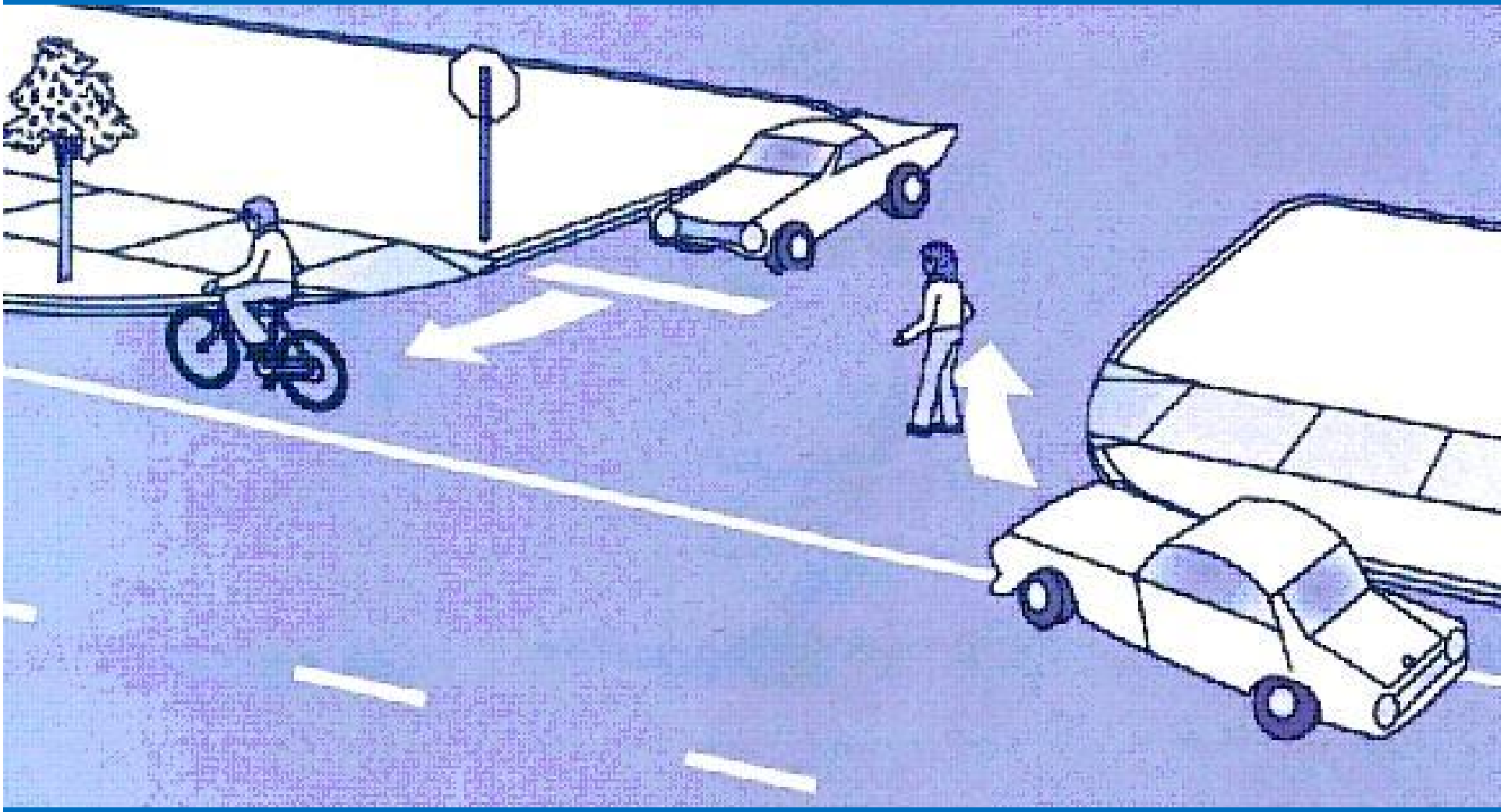
Meet ADA requirements for universal design

Curb ramp design

- Two ramps per corner
- Eight ramps per intersection

Warning strip – 4’ x 2’

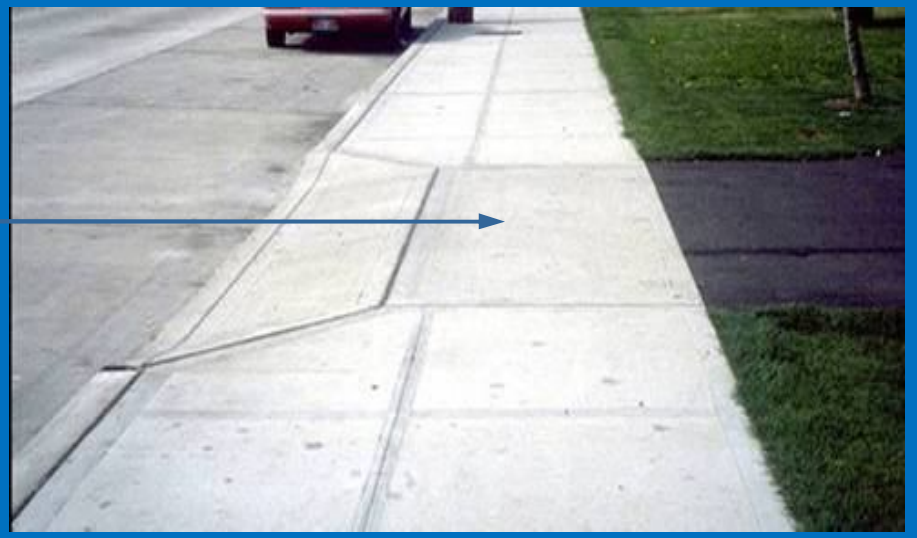
Don’t build driveways like intersections



Driveway design options

- Apron does not go through sidewalk

- Sidewalk continues across the driveway



Along the school route: Bikeways

- Local streets
- Bike lanes
- Shoulders
- Pathways

Bicycle lanes

Install bicycle racks

Connectivity creates a pedestrian-friendly street system

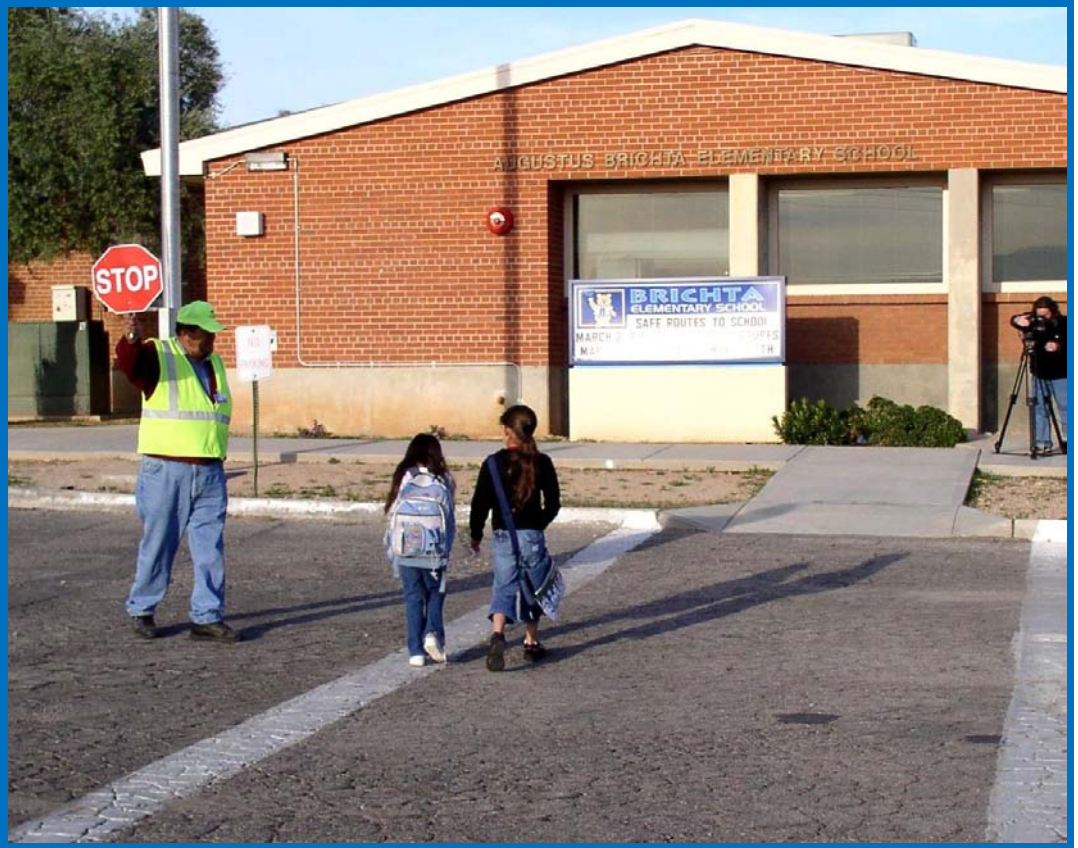
- Reduces walking distance
- Offers more route choices – disperses traffic
- Less traffic = more pedestrian friendly

Engineering topic outline

- Around the School
- Along the School Route
- **Crossing the Street**
  - **Introduction**
  - **Shortening crossing distances**
  - **Marking crosswalks**
  - **Creating visible crossings**
  - **Using stop signs and traffic signals**
- Slowing Down Traffic

Principles for creating safe crossings

- Establish a school crossing
- Reduce crossing distance
- Use appropriate traffic control
  - Marked crosswalks
  - Warning signs or flashers
  - Stop signs and traffic signals
  - Crossing guards
- Slow vehicle speeds



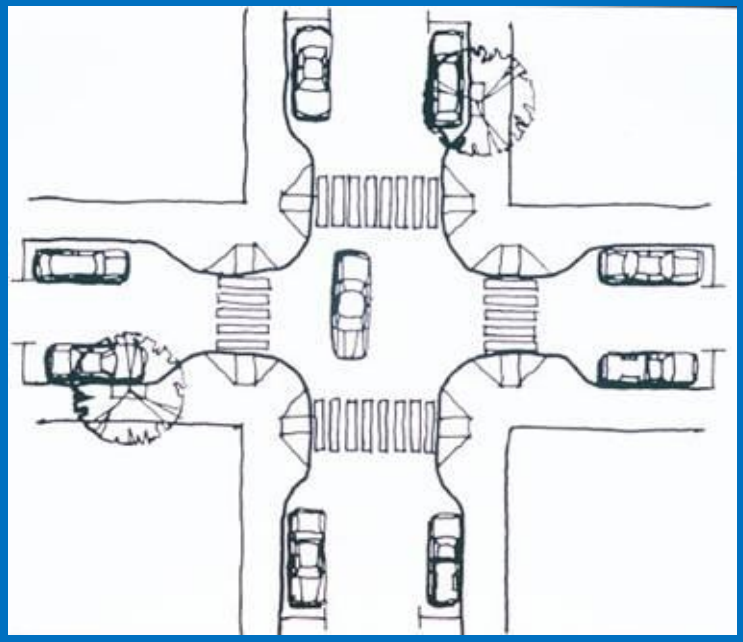
Pedestrian and bicycle bridges

- Expensive
- Often not used
- Consider topography and circumstances

Pedestrian underpasses and bridges

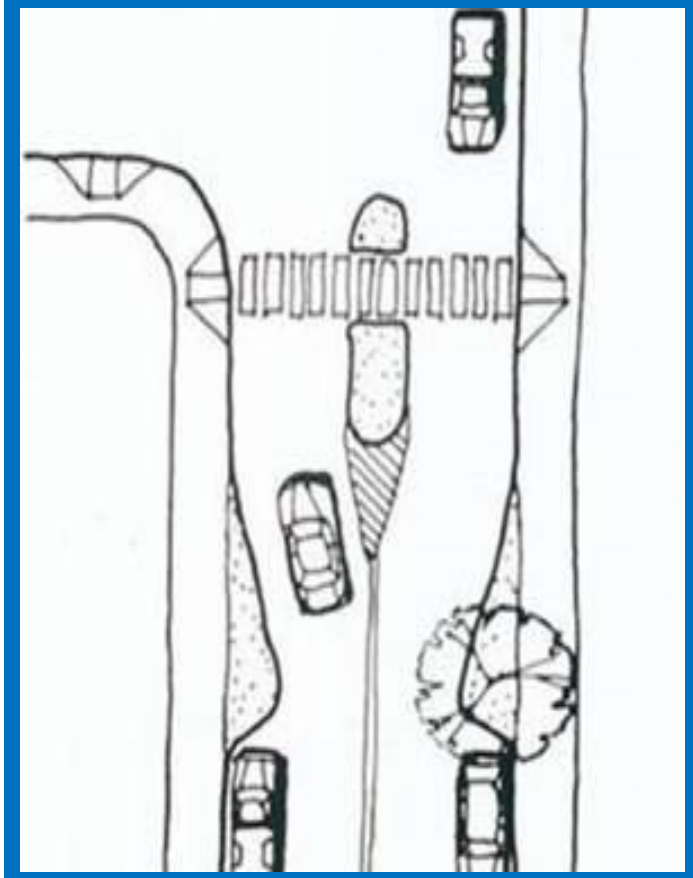
Tools to reduce crossing distance

Curb extensions at crossings



Reduce the crossing distance

Crossing islands



Two-stage crossing island

Signs for pedestrians

Waiting areas and “stand-back” lines

Road diet – watch it happen

Road diet – watch it happen

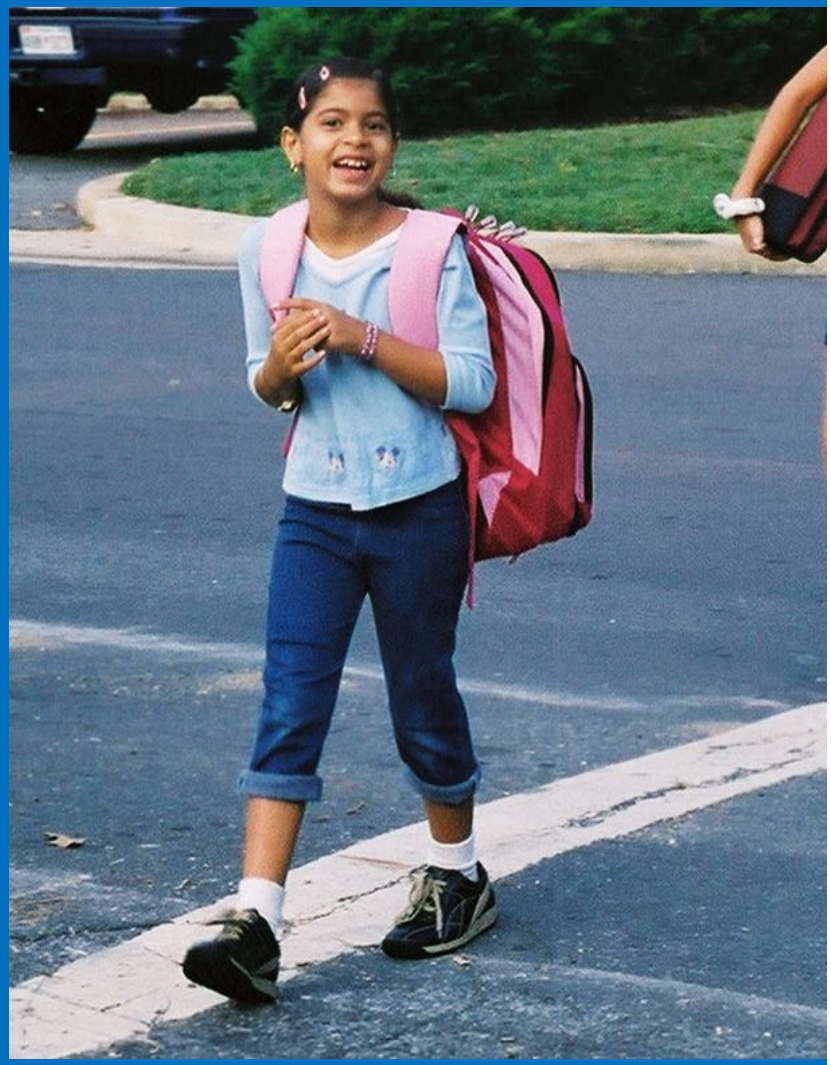
Road diet – watch it happen

Road diets can benefit many

Marking crosswalks

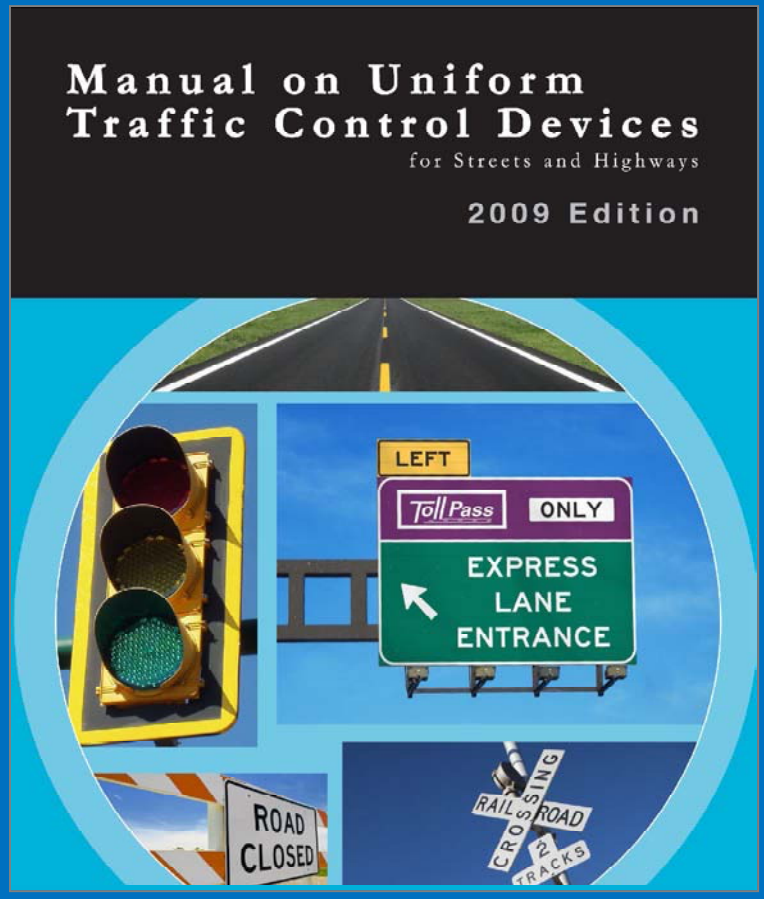
Why install marked crosswalks?

- Indicate a preferred pedestrian crossing location
- Alert drivers to an often-used pedestrian crossing
- Indicate school walking routes



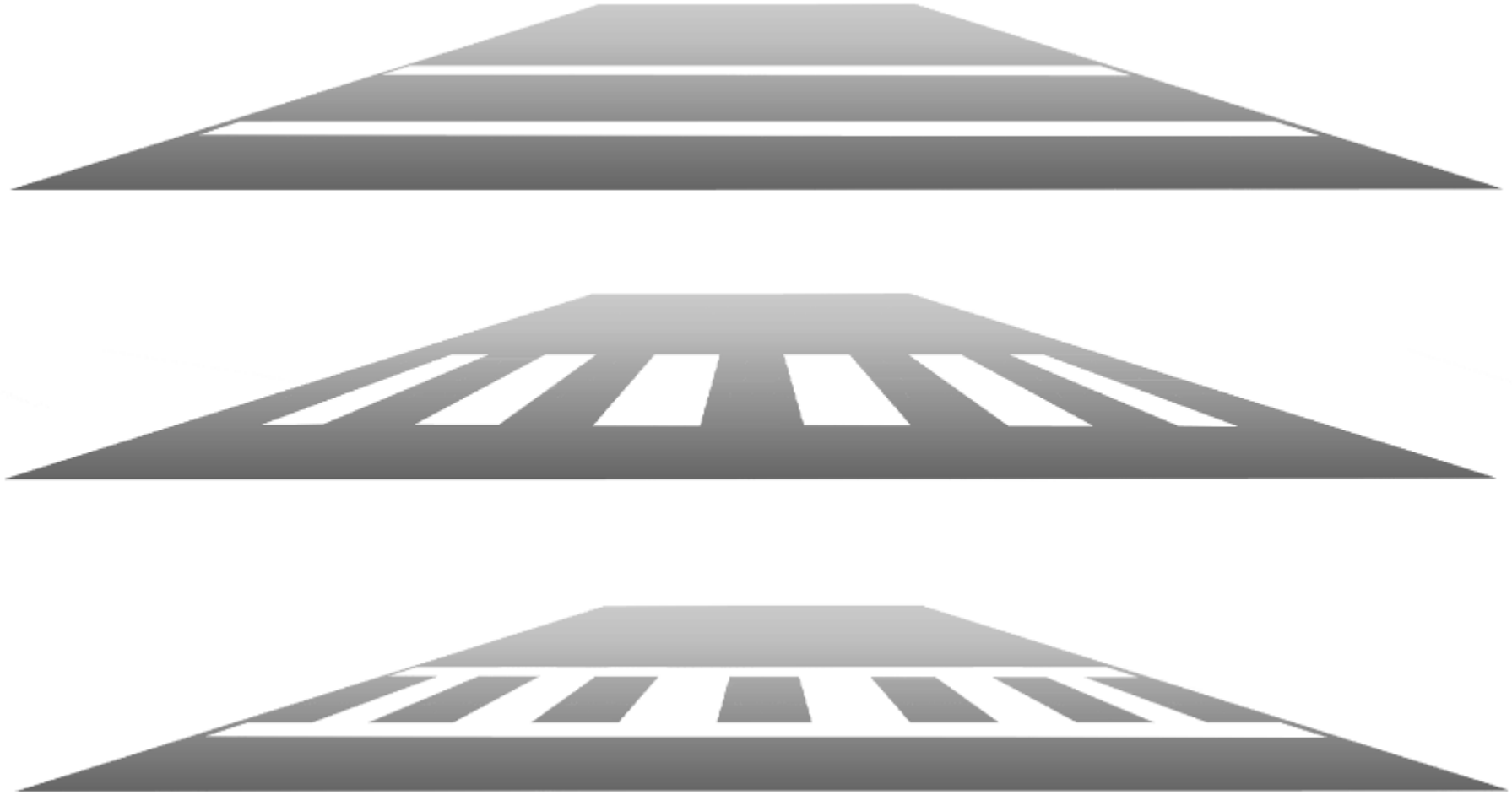
Where to install marked crosswalks

- Signalized intersections
- School routes
- Uncontrolled crossings



This crosswalk meets guidelines

Install high-visibility markings



Ladder-style is easier to see.

High visibility markings

Sweet Home OR

Rectangular rapid flash beacon (RRFB)

- Beacon is yellow and has a rapid flash
- Motorist yield rates increased from about 20% (pre-RRFB) to 80% (with RRFB)
- Must be pedestrian activated (by pushbutton or passive detection)
- Not yet in MUTCD – Interim approval from FHWA in July 2008

Rectangular rapid flash beacon

In-pavement flashing crosswalks

- Possible maintenance problems
- Visible primarily at night
- Unknown crash effects
- Expensive treatment

Advance yield line (shark's teeth)

Advance stop line

‘Yield here’ and ‘Stop here for pedestrian’ signs

Parking restrictions at corners

Better visibility for both drivers and pedestrians

Modify traffic signal timing

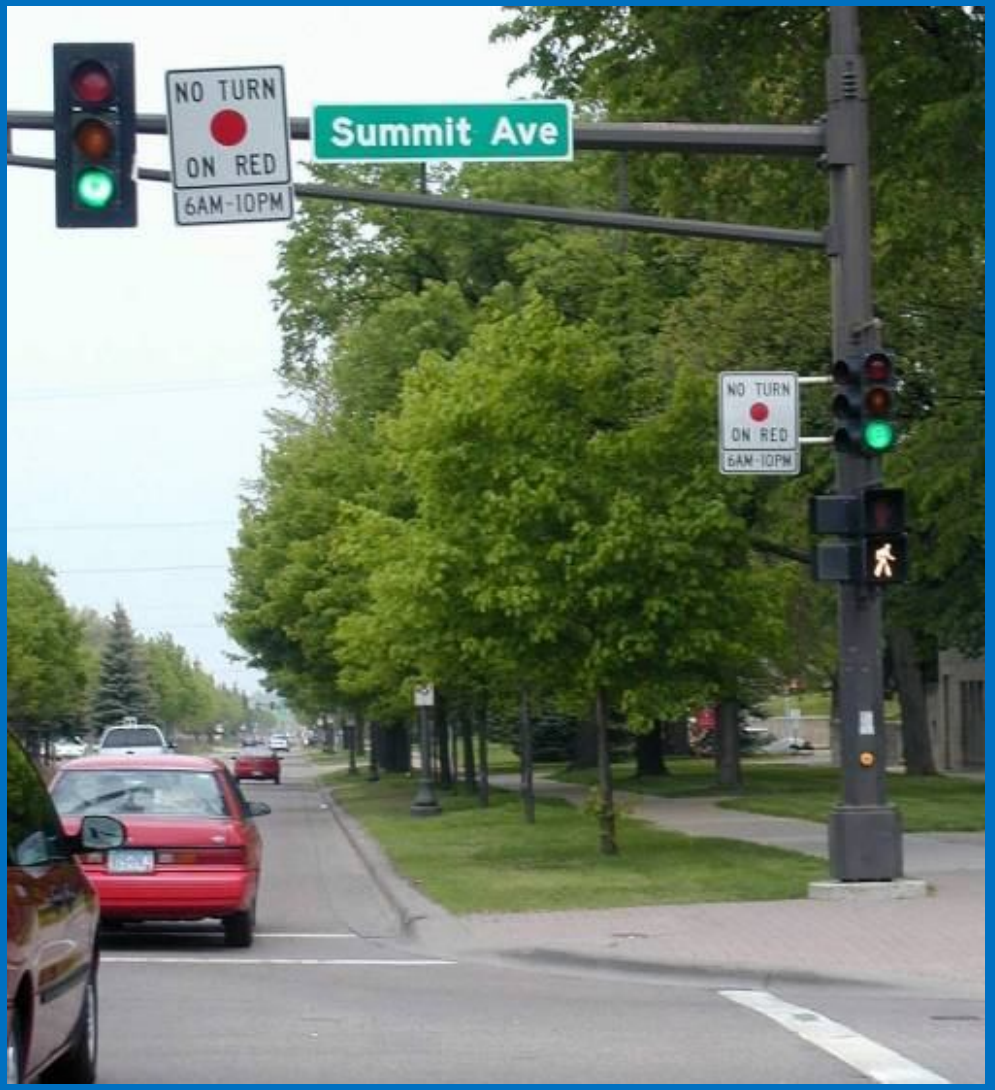
Traffic signal guidelines

- Mark all crosswalks where pedestrians cross
- Pedestrian signals in all directions
- Adequate crossing time for pedestrians
- Stop bars for vehicles on all approaches

Pedestrian pushbuttons

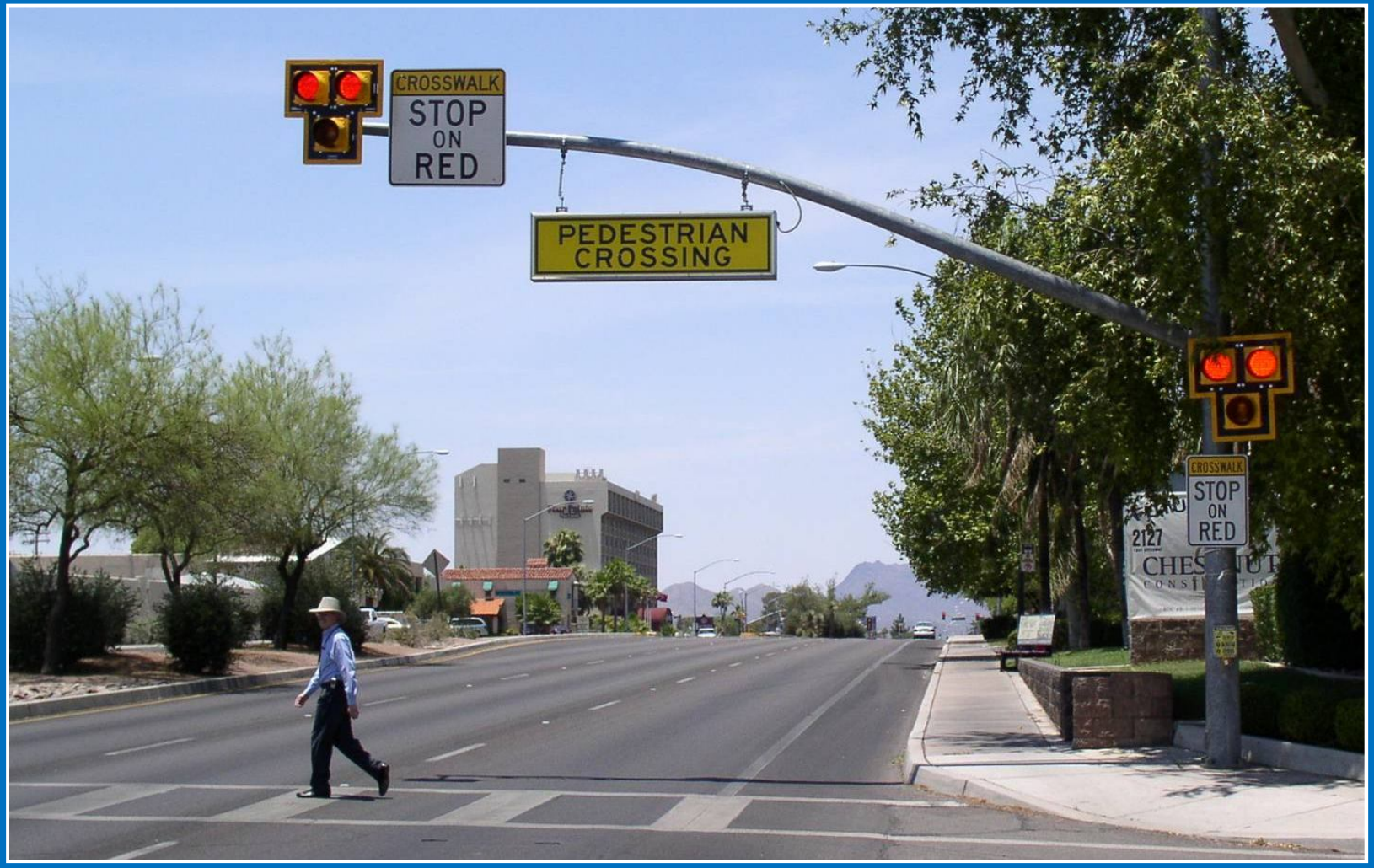
- Buttons may be needed at some crossings
- Signals can be put in pedestrian “recall” for key times of day

No right-turn-on-red



Countdown pedestrian signal

Pedestrian hybrid beacon



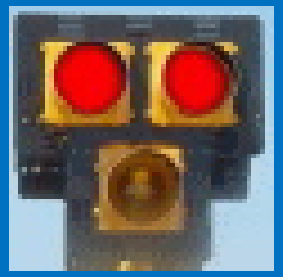
Hybrid Beacon Sequence

1

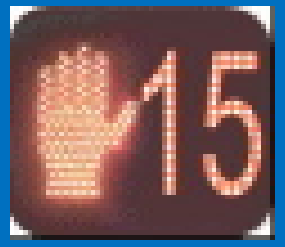
2
Flashing

3

4



5
Wig-Wag



Return
to 1

Engineering topic outline

- Around the School
- Along the School Route
- Crossing the Street
- **Slowing Down Traffic**

Speed humps slow traffic on local streets

Raised pedestrian crosswalks

Raised crossings in school parking lot

Summary

1. Focus first on easy-to-implement and low-cost solutions
2. Also identify and program longer-term improvement needs (e.g. sidewalks)
3. Match the treatment to the type of problem

Summary

4. Provide and maintain facilities along the school route:

   - Sidewalks
   - On-street bicycle facilities
   - Paths
   - Connections
   - Pedestrian and bicycle bridges

Summary

5. Provide safe street crossings:
    - Keep it simple
    - Shorten crossing distances
    - Carefully select crossing locations and marked crosswalks
    - Create visible crossings
6. Slow down traffic speeds

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- Questions