



## Implementation challenge 2:

- Is there room for Complete Streets?
- Does street classification enable Complete Streets?

# Do we have to widen roads to fit everything?



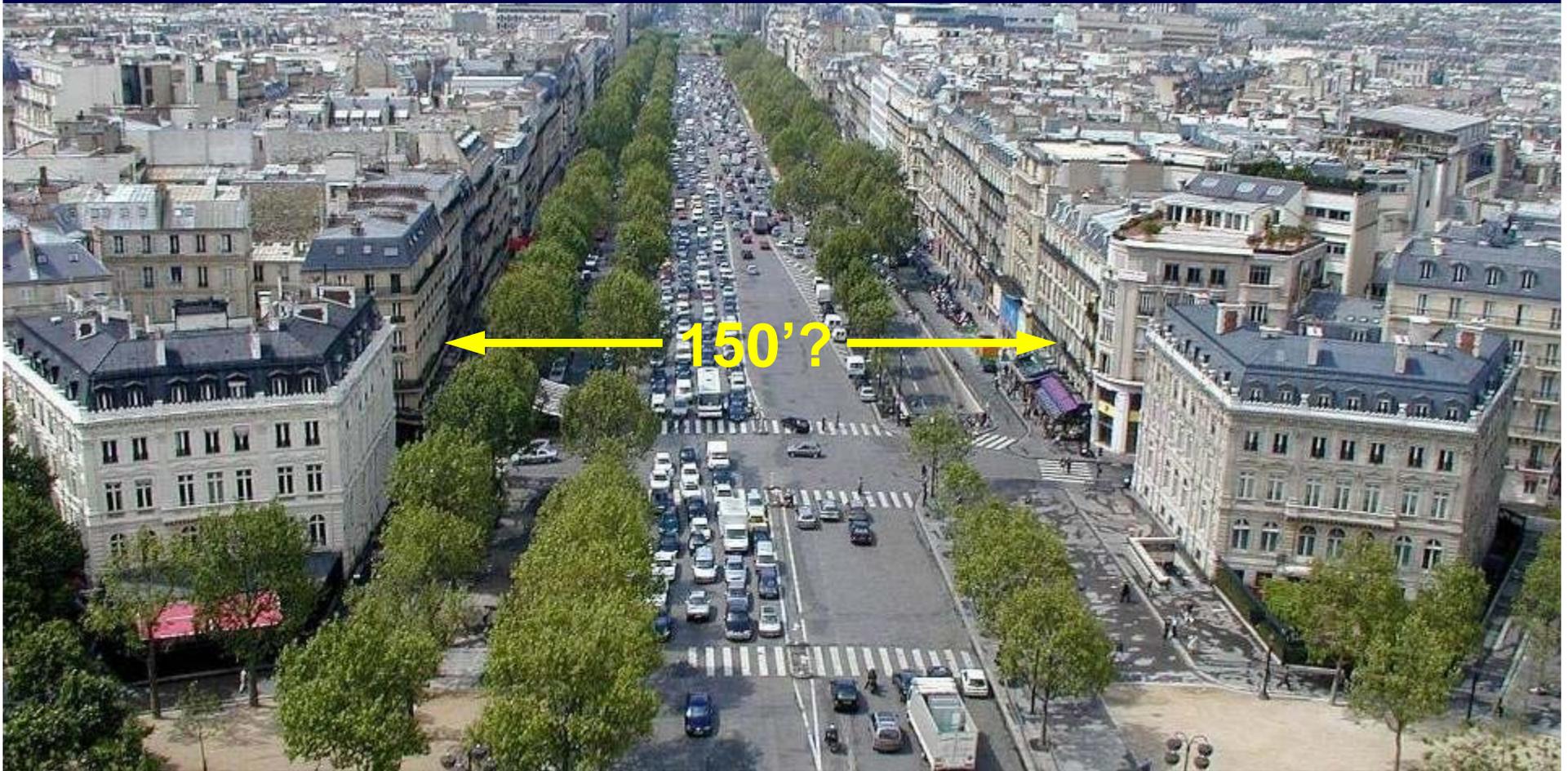
# There's room; it needs to be recaptured



# Does it fit within the available right-of-way?



# Does it fit within the available right-of-way?



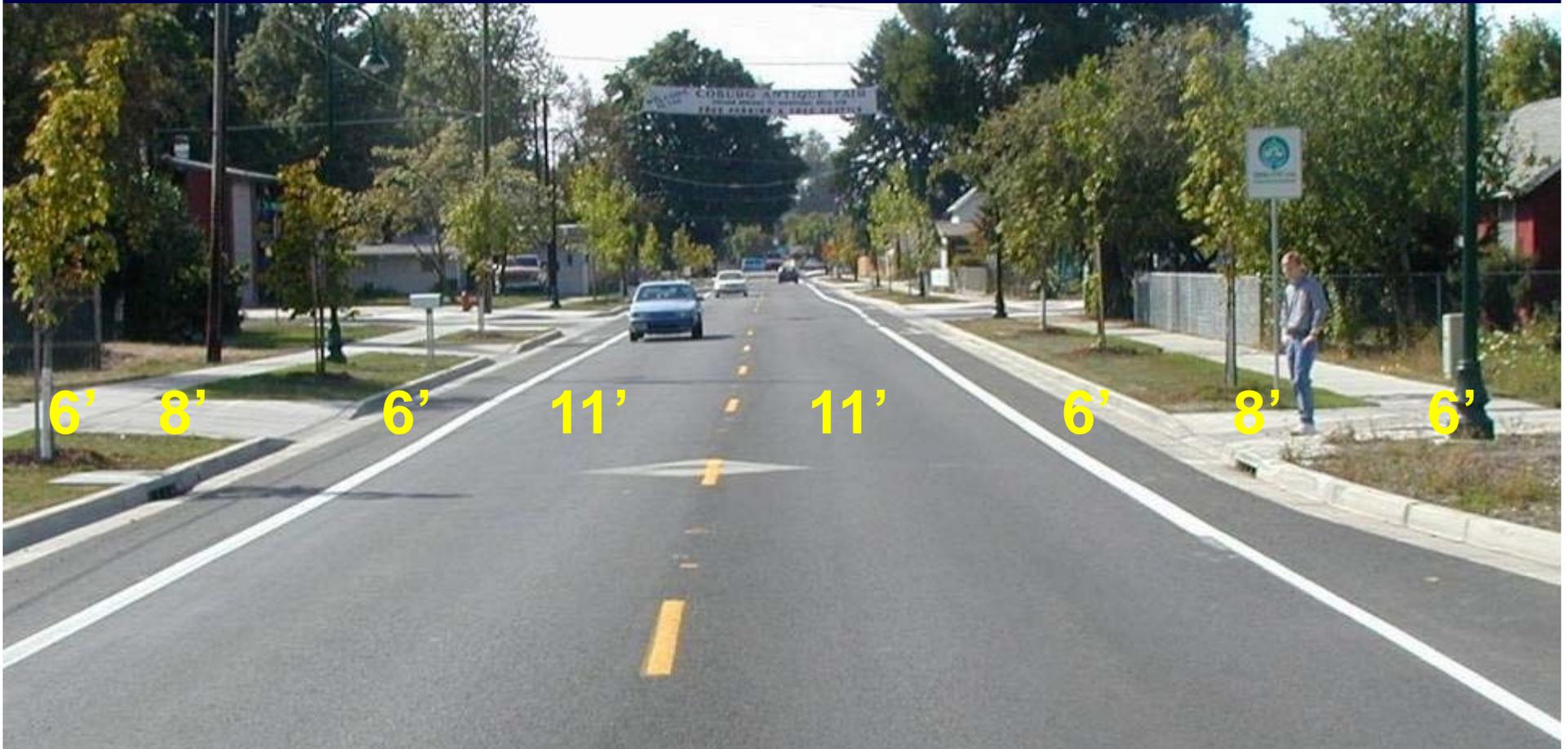
Don't ask "How much ROW do we have?" but  
"What do we want, and how do we design it?"

# Conventional design – from the inside out



**Add up (wide) travel lane, run out of ROW  
Result: one narrow curbside sidewalk**

# Proposed design – from the outside in



**Add up desirable elements, fit in ROW; result:  
nice sidewalks, bike lanes, adequate travel lanes**

# Should street width be based on classification?

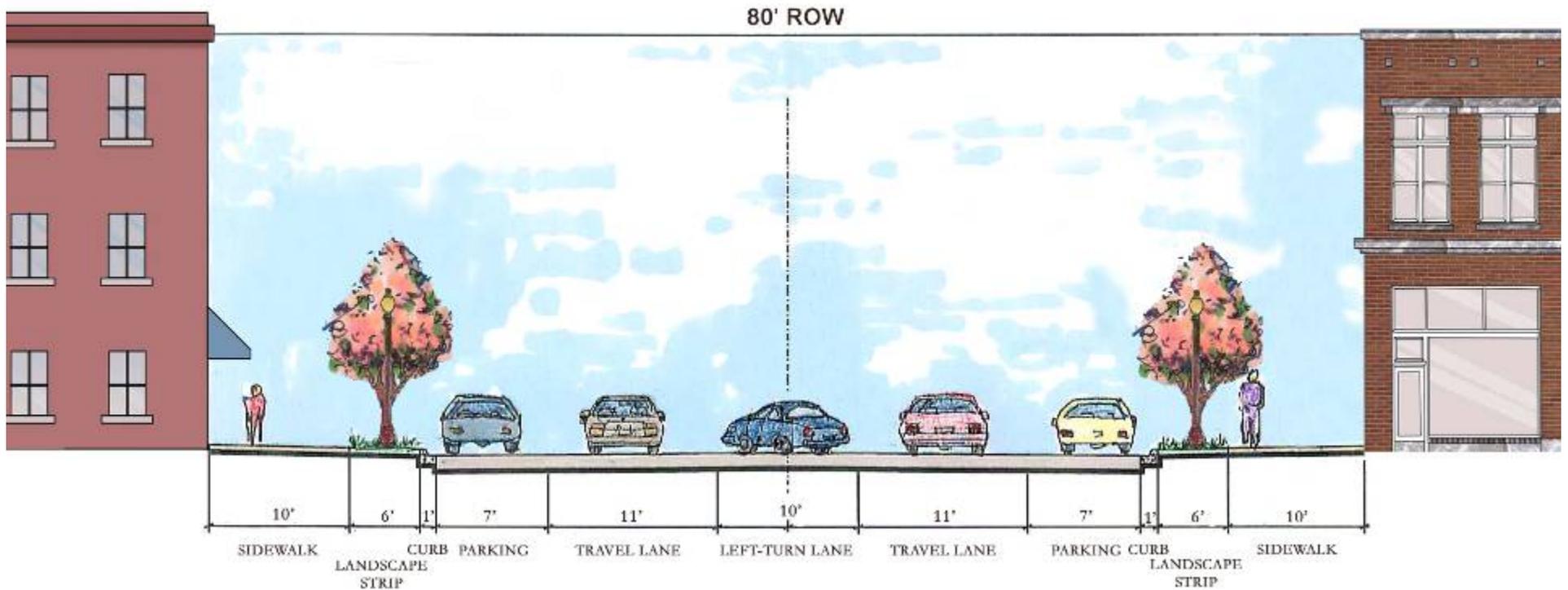
Functional classification doesn't adequately describe the street's role in a community

These 3 streets are "arterials" yet look, feel and perform very differently:



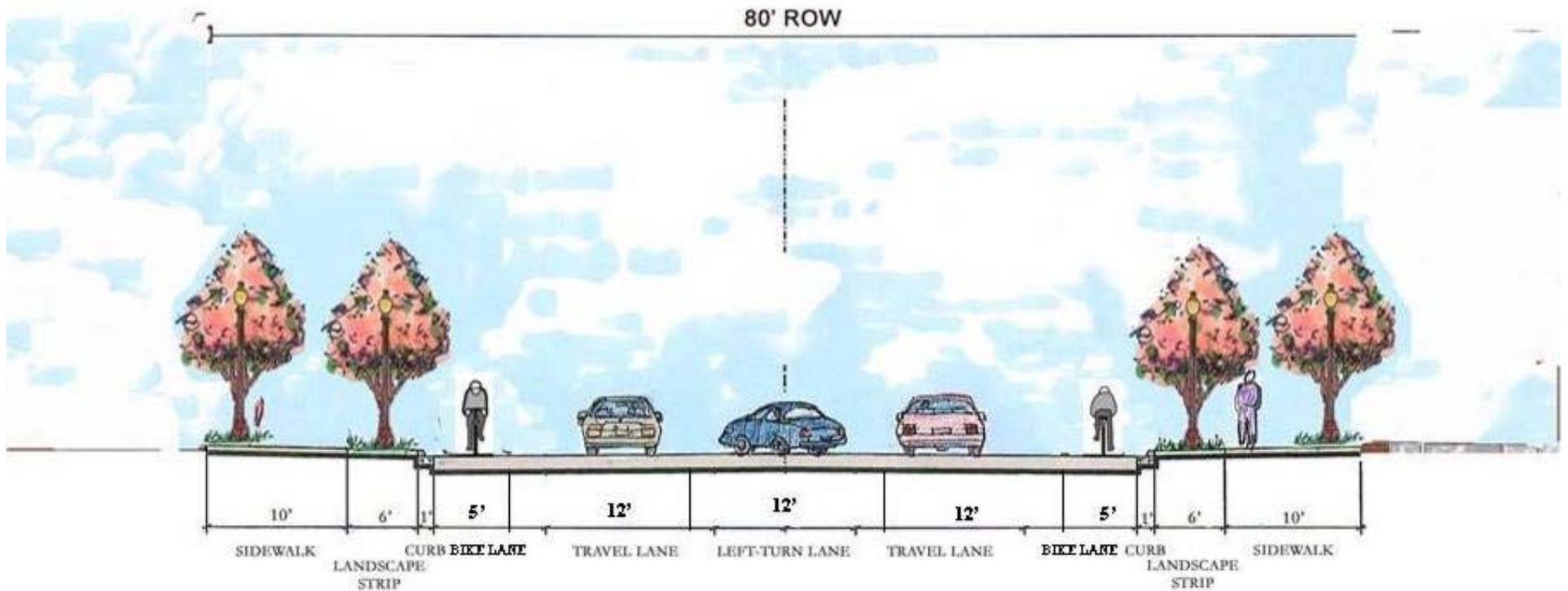


# Cross-section based on context



## Urban context

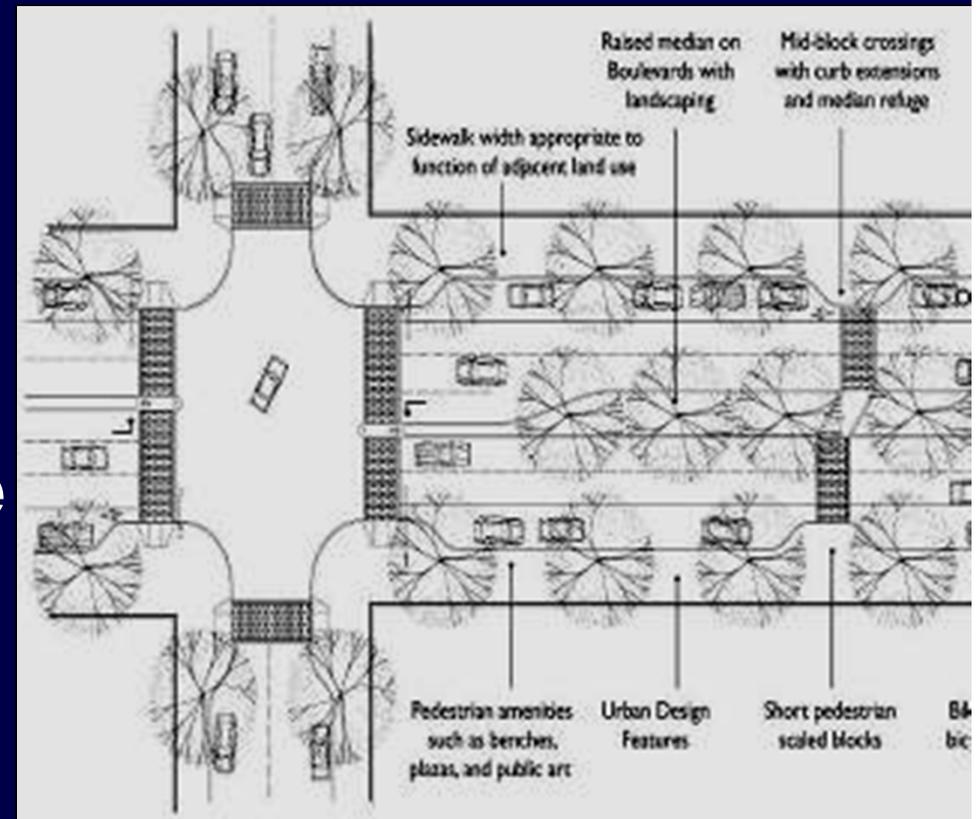
# Cross-section based on context



## Suburban context

# Design for street types

- Design criteria:
  - Physical configuration
  - Surrounding context
- Dimensions for
  - Sidewalk environment
  - Street
  - Intersections
- Target speed (desirable operating speed)



# Wide roads and motor vehicle LOS

- Designing to LOS C or higher is waste of \$\$
  - Allocate space for all users, accept resulting vehicle LOS
- What about ped, bike and transit LOS?
- Shorter ped crossing increases vehicular LOS at signals



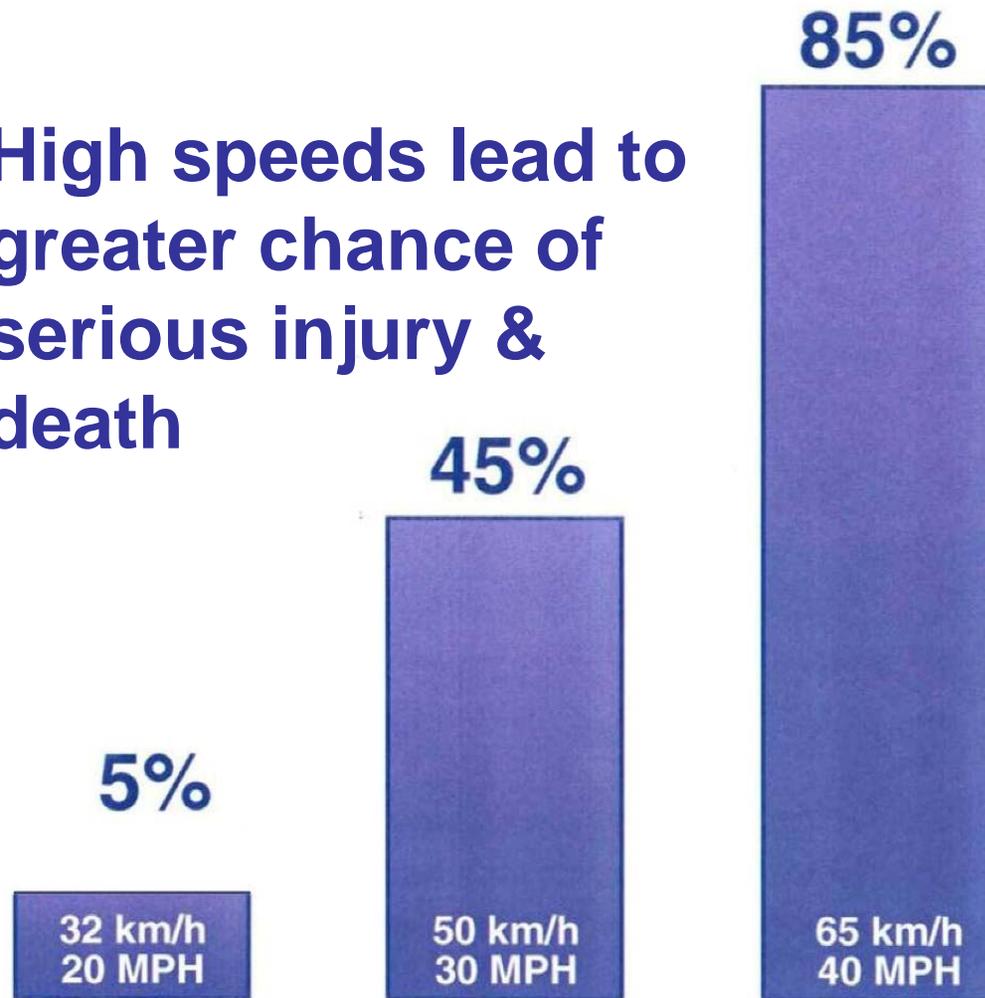
# Wide road increase motor vehicle speed

- Speed increases crash severity for all users
- Over 35 MPH reduces roadway capacity



# Speed Matters

High speeds lead to greater chance of serious injury & death



Pedestrians' chances of death if hit by a motor vehicle

SOURCE: *Killing Speed and Saving Lives*, UK Department of Transportation

# Narrower Travel Lanes

10' and 11' lanes are just as safe as 12' lanes on urban arterials with speeds under 45 MPH

AASHTO Green Book allows narrower lanes:

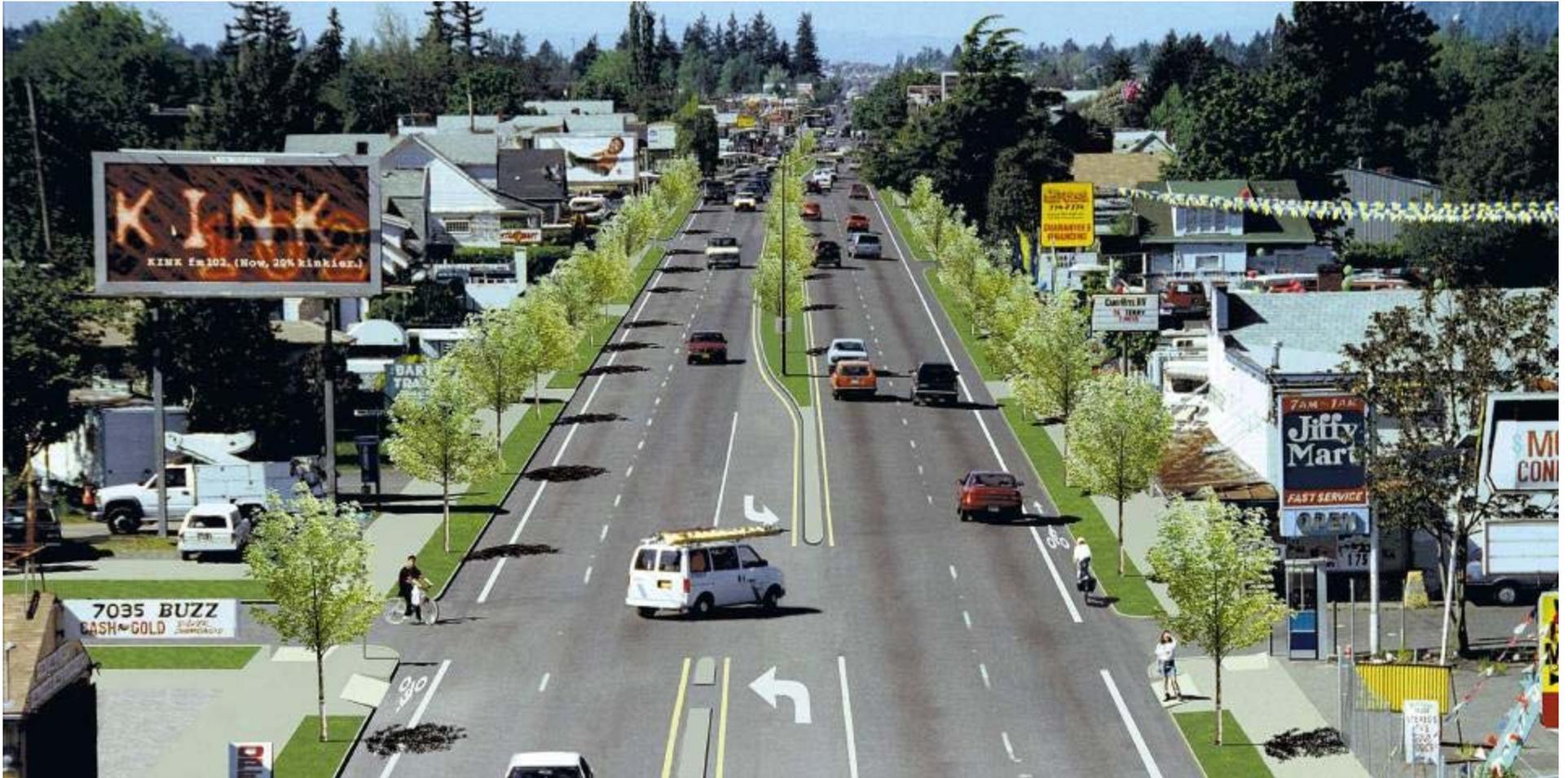
- 9' on local residential streets
- 10' on low speed arterials & collectors
- 11' for streets with trucks



“Relationship of Lane Width to Safety for Urban and Suburban Arterials”:  
Study by Potts, Harwood, and Richard



**Reinventing a roadway:  
Transform a 5-lane commercial strip to ...**



**...a safer road for everyone, without adding r.o.w.**

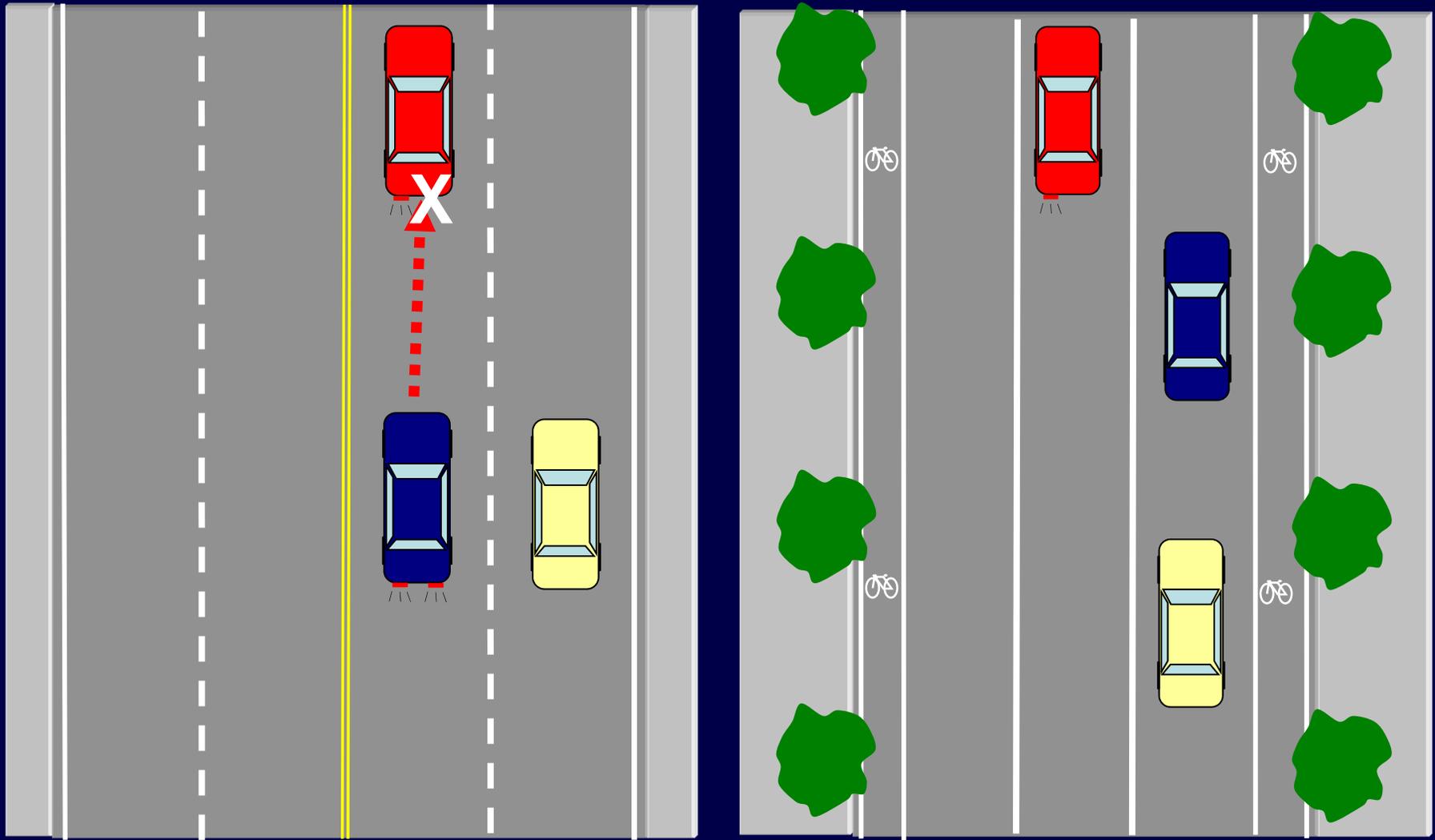
**How? Narrow travel lanes**

# How to make room: Road Diets



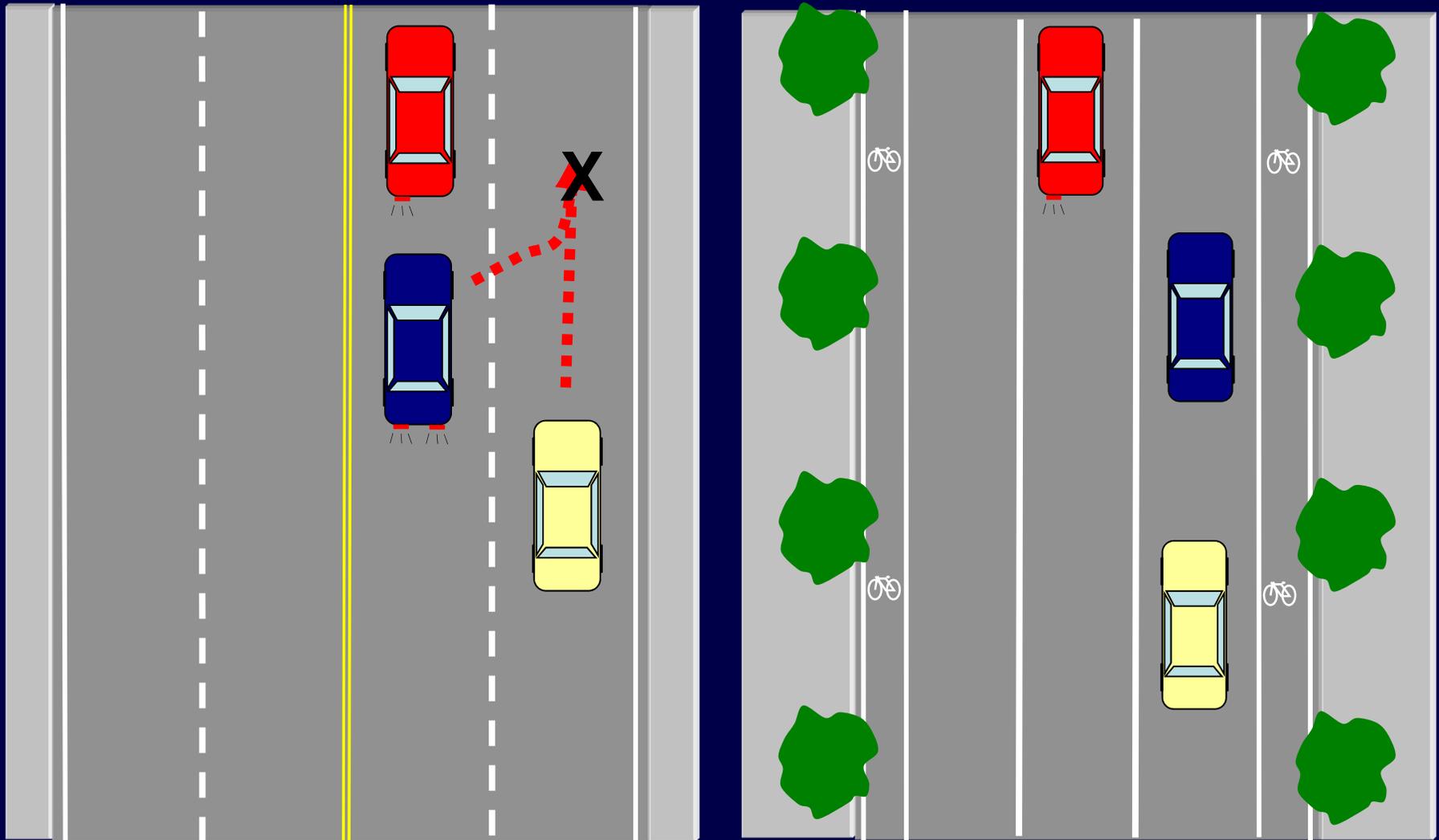
**Convert 4-Lane Road to 3-Lane and TWLTL**  
**29% crash reduction**

# Crash Reduction



Rear end

# Crash Reduction



Side swipe



# Handles 20,000 ADT



**Mission District, San Francisco**  
**North-South ADT**

Before



**Reclaiming road space creates room for ped islands**



Concept



**Reclaiming road space creates room for ped islands**



After



**Reclaiming road space creates room for ped islands**





- **Which road carries more traffic?**
- **Which road produces higher speed?**
  - ✓ 4-lane: faster driver can pass others
  - ✓ 2-lane: slower driver sets speed
- **Which road produces higher crash rate?**
- **Which is better for bicyclists? Pedestrians? Businesses?**



**This 5-lane Main Street was converted to...**





**Name 4 things that changed**



**Fewer travel lanes; added bike lanes; parallel to back-in diagonal parking on one side; new pavement**



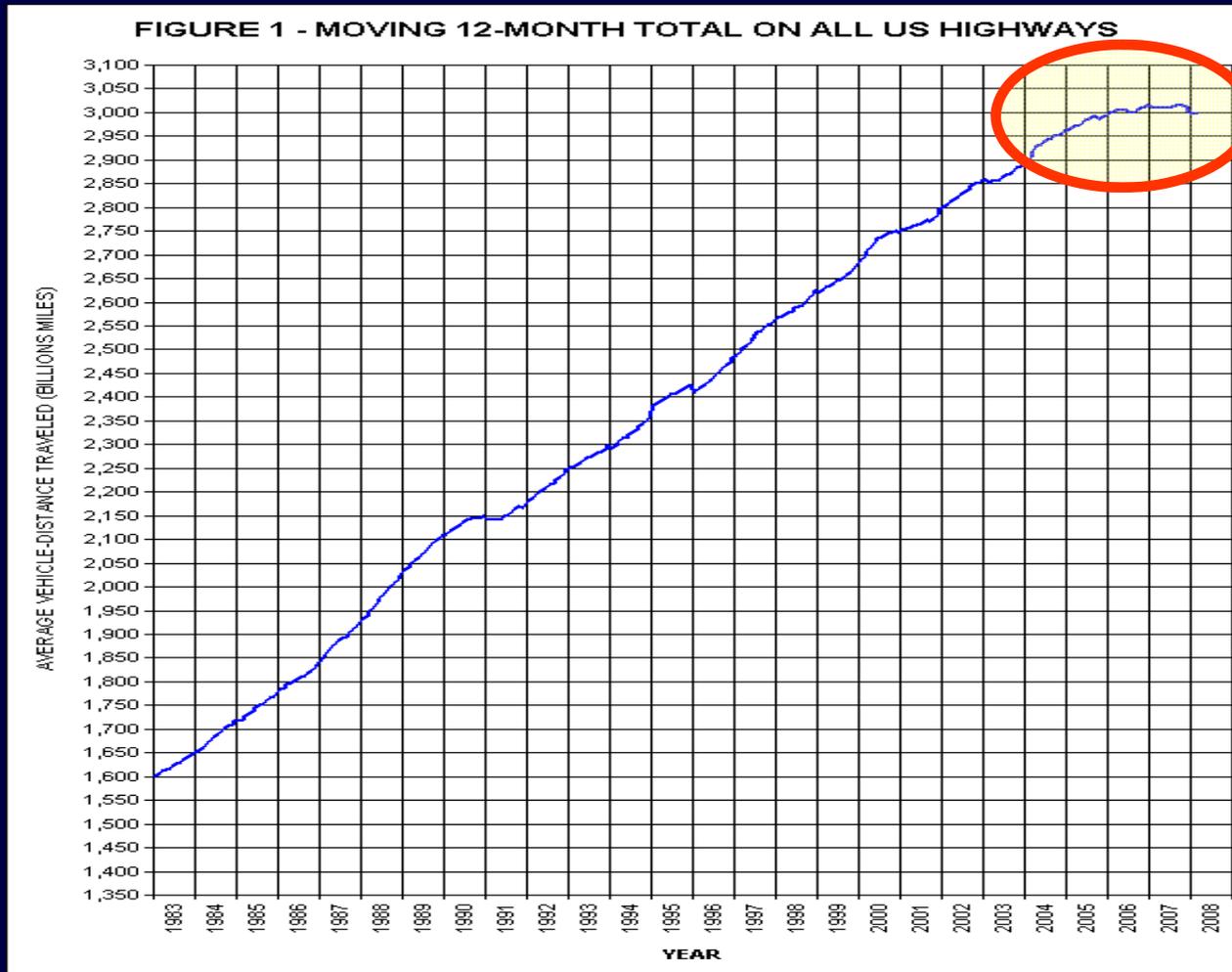


**There's potential on one-way streets too:  
Is this street operating at capacity?**



**This area was recaptured from a 4<sup>th</sup> travel lane;  
the street took on a whole new life**

# Will traffic volumes always increase? Maybe not



Since 2005 US VMT has been flat, now starting to decrease

# Exercises

- **Brainstorm ideas on how you'd like to classify roadways in your area**

# EXERCISES

## Nashville MPO

### ➤ Roadway classifications

- T

# EXERCISES

## Baton Rouge

### ➤ Roadway classifications

- Thruway / Boulevard / Avenue / Main / Local – Auto to more diverse
- Arterial / Collector / Local – Note bicycle/pedestrian use/options
- Arterial / Collector / Local – Federal funding classifications
- What does it do?
- By use, not jurisdiction. Use CLT, use neighborhood for local, add lane.

### ➤ Potential road diets



# EXERCISES

## Greater Dayton Area

### ➤ Roadway classifications

- Residential/Neighborhood/Business roads/Major business roads/Regional connectors/Hyper Routes
- Neighborhood Street/Neighborhood business/Urban-Rural arterial/
- Neighborhood/business streets/pedestrian streets/industrial streets/frogger streets
- Alleys/Farmroads/Fitness streets/market street/front street/neighborhood street
- Interstate/Arterial/Collector/Local

# EXERCISES

## Baton Rouge

### ➤ Roadway classifications

- Simple, case-by-case (arterial, collector, local – eliminate others). Customize (2).
- Add parkway.
- Toss the conventional terms. Form-based land use code. Emphasis on context.
- Neighborhood – Connector – Access (or trail, blvd road)

### ➤ Potential road diets

- University between 13<sup>th</sup> and I-94
- 4<sup>th</sup> St downtown
- 42<sup>nd</sup>
- Main Ave from 8<sup>th</sup> to 20<sup>th</sup>
- NP Ave and 1<sup>st</sup> Ave
- 45<sup>th</sup> St
- 25<sup>th</sup> south from Main to I-94
- 17<sup>th</sup> St from 1<sup>st</sup> Ave to 15<sup>th</sup> north



# EXERCISES

## Chattanooga

### ➤ Roadway classifications

- Local – neighborhood – community – district
- Modify existing system emphasizing local needs more ped, interstate less ped
- Modify existing system emphasizing land use; classification attached to road classification
- Open (no lane markings/low speeds) – thoroughfare, with lane markings, neighborhood connector – Central Business / Main street (identified separate uses) – city connectors (city-to-city) separated paths, backwood trails

### ➤ Potential road diets

- Amnicola Hwy
- Broad St north of MLK
- Cummings Hwy
- Hwy 58
- MLK 200 block east



# EXERCISES

## Northwest Georgia

- **Roadway classifications**
  - **Interstates / strip mall street / commercial hub / spider web / neighborhood / play streets**
  - **By adjacent land uses: subdivision / traditional neighborhood / core commercial / big box commercial**
  - **Campus and/or business / scenic access – slow down, enjoy the ride, stop'n'shop / golf cart friendly**
  - **Outside in (on the edge): look at ped & bike traffic, primary users.**
- **Potential road diets**
  - **Milledgeville – Hancock**
  - **Atlanta – North Ave**
  - **Rome – Turner McCall Blvd**

# EXERCISES

## Duluth/MIC

### ➤ Roadway classifications

- Based on users: local (access) highway (thru movement)
- Based on present and future land use
- Get around – Stop'n'Shop – Buzz through
- Go shopping – life quality – get there – vista
- (Flexibility in Design)

### ➤ Potential road diets

- London (10<sup>th</sup> – 26<sup>th</sup>) (4)
- Woodland (2)
- Central Entrance (2)
- 6<sup>th</sup> Ave E
- Glenwood (43<sup>rd</sup> - Livingston)
- Tower Ave (Superior)
- Miller mall area (Trinity-Arrowhead)
- Arrowhead Rd (Kenwood-Arlington)

# EXERCISES

## Dakota County

- **Roadway classifications**
  - Based on nearby land use (school, recreation, neighborhood, commercial)(context-sensitive)(2)
  - Street characteristics (internal/users)
  - Parkway/Green Streets transformations
  
- **Potential road diets**
  - Lexington (in Egan) (4-3)
  - 147<sup>th</sup> in Apple Valley (ring route)
  - Repaint local streets
  - Denmark (in Egan) (4-3)
  - Blackhawk (in Egan) (4-3)
  - Shannon Pkwy (in Rosemont) (4-3)
  - Johnny Cake Ridge Rd
  - Diamond Path
  - Cahill Ave