



Confessions of a Recovering Engineer

TRANSPORTATION FOR A STRONG TOWN

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Civic Center
Hill Street

15 SOUTH
Downtown

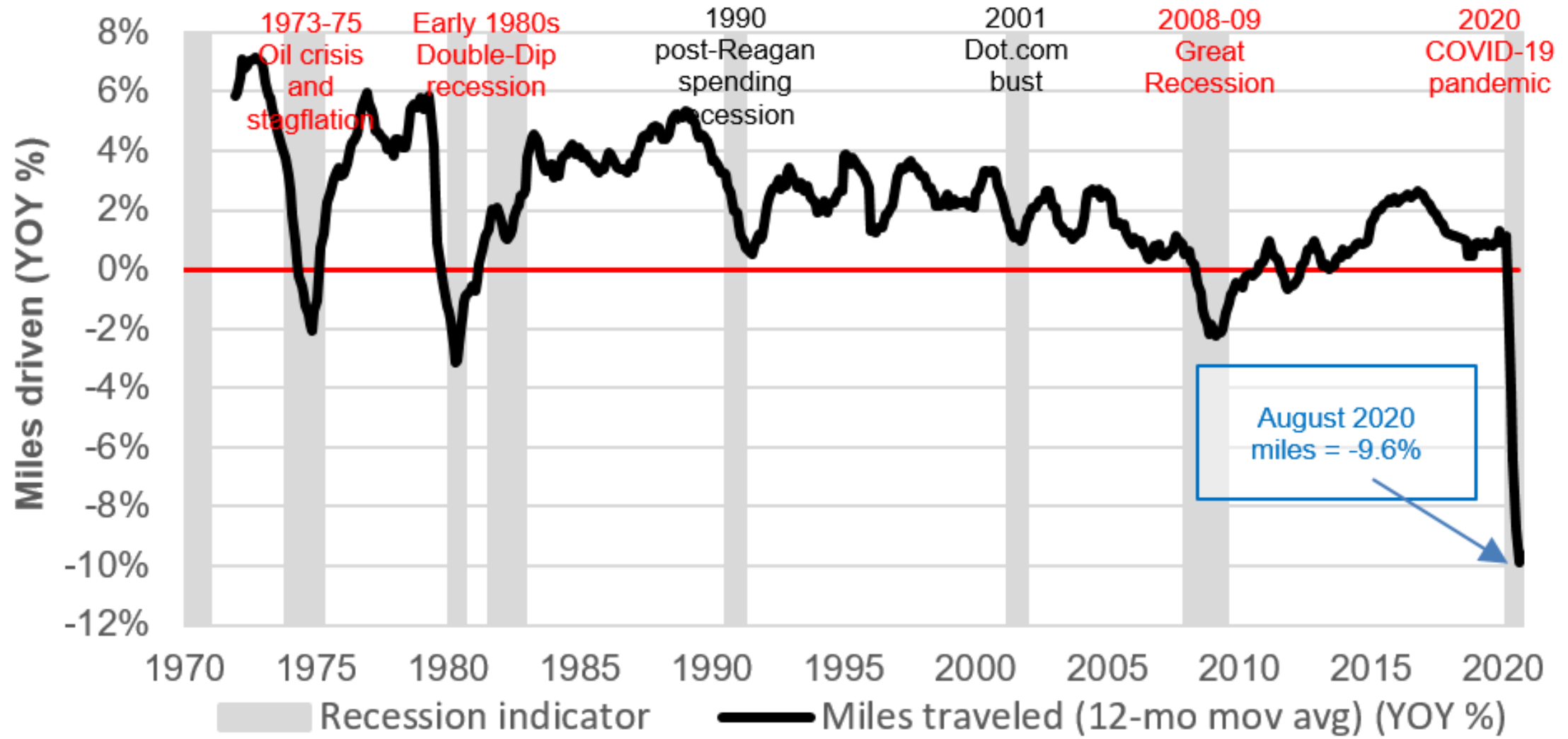
Stadium Way
Dodger Stadium
EXIT 15 1/4 mile

15

EXIT
25

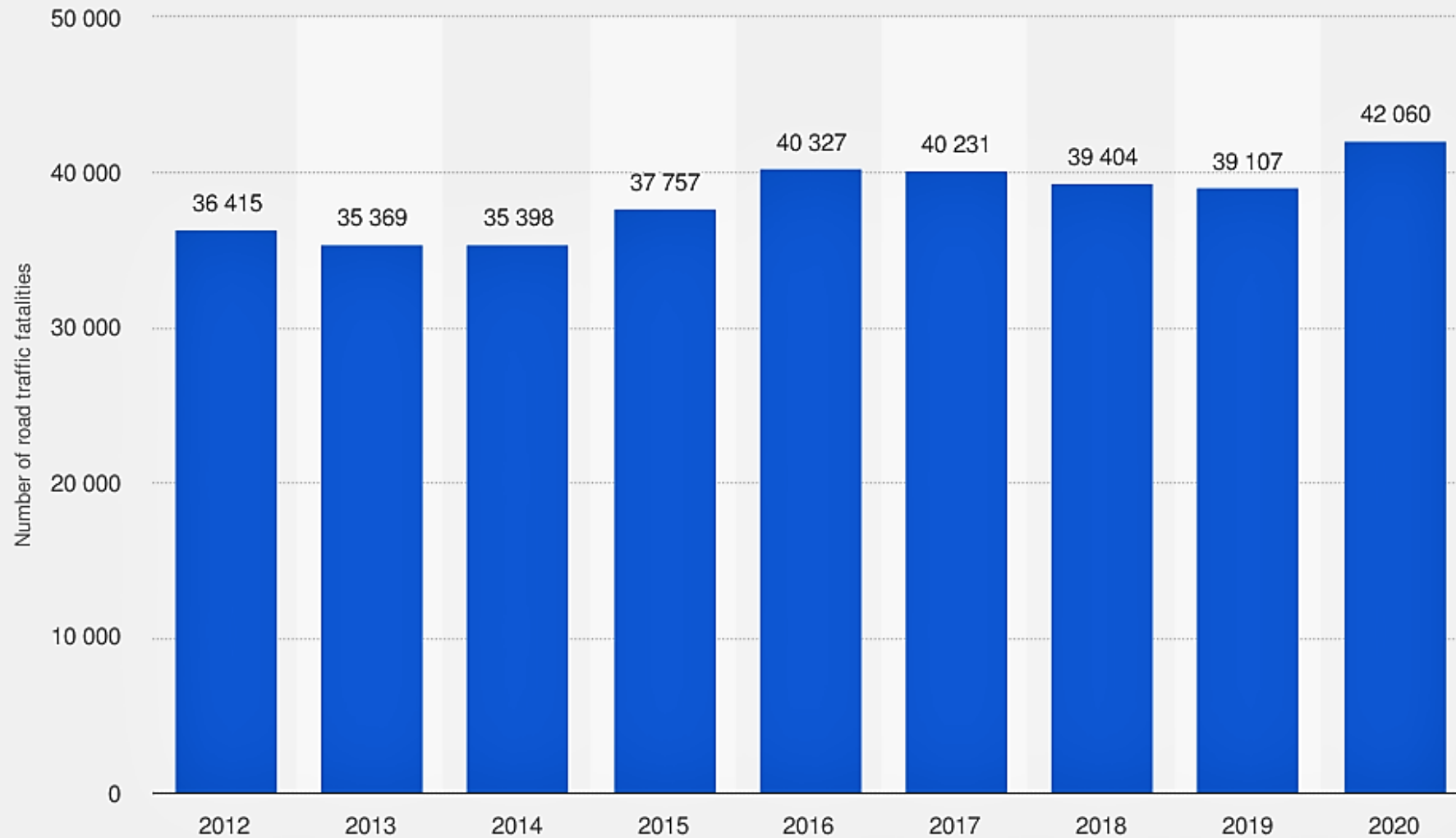
Vehicle miles traveled before and after recessions

(Year-over-year % change in 12-month moving average of miles)



Source: FHA; NBER; RSM US

Number of road traffic fatalities in the United States from 2012 to 2020



Sources

National Safety Council; NCHS
© Statista 2021

Additional Information:

United States; National Safety Council; NCHS; 2012 to 2020

How do we explain this?



The
Reckless
Driver™

← NEWS

2020 Fatality Data Show Increased Traffic Fatalities During Pandemic

Risky Driving Behaviors Including Failure to Wear a Seatbelt, Speeding, and Drinking While Driving Identified as Contributing Factors

Pedestrian Deaths Spike in U.S. as Reckless Driving Surges

Fatalities are climbing to record levels two years into the pandemic. Authorities cite drivers' anxiety levels, larger vehicles and fraying social norms.



It's not just your imagination. Drivers in the pandemic have gotten more reckless

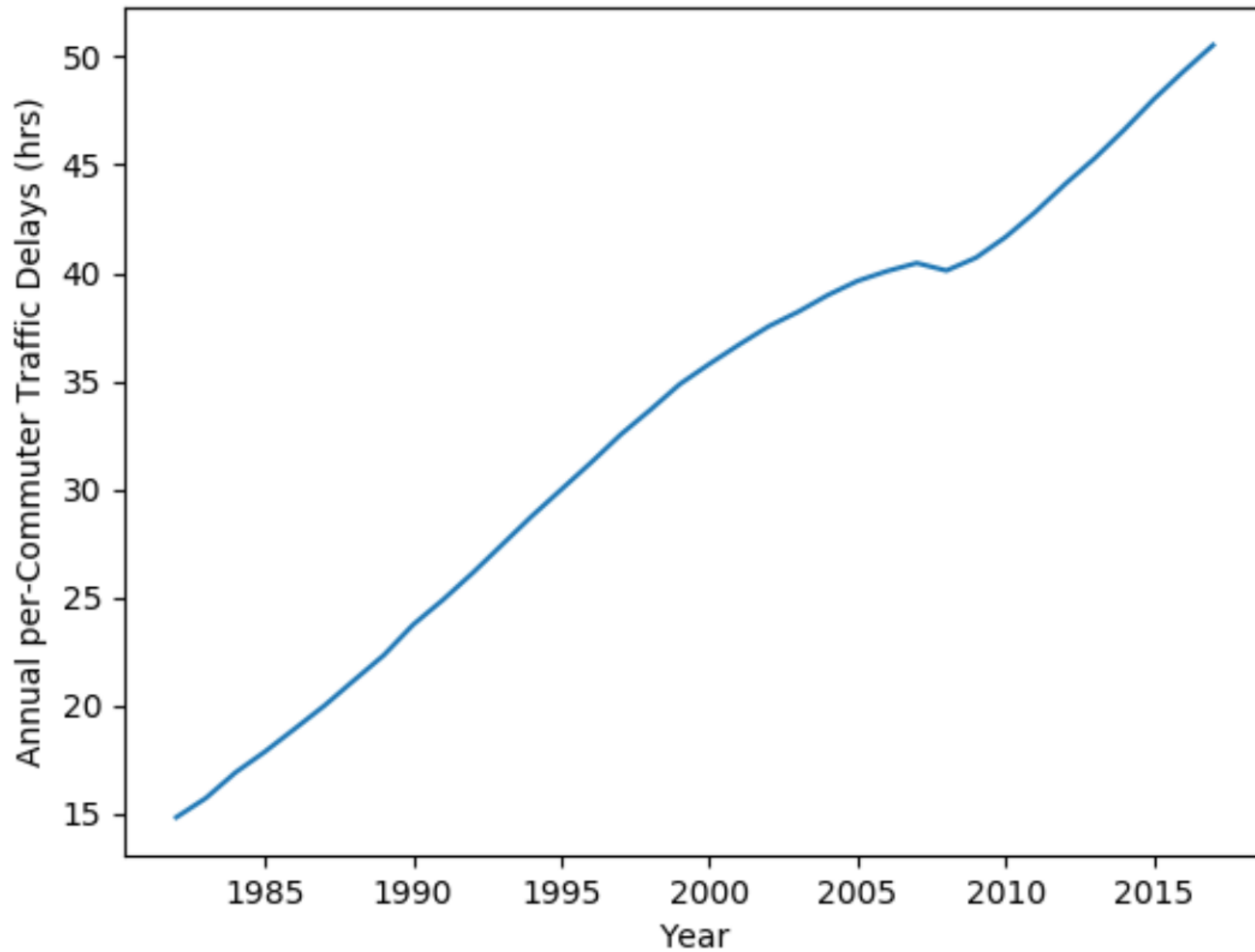


Car crash deaths have surged during COVID-19 pandemic. Here's why

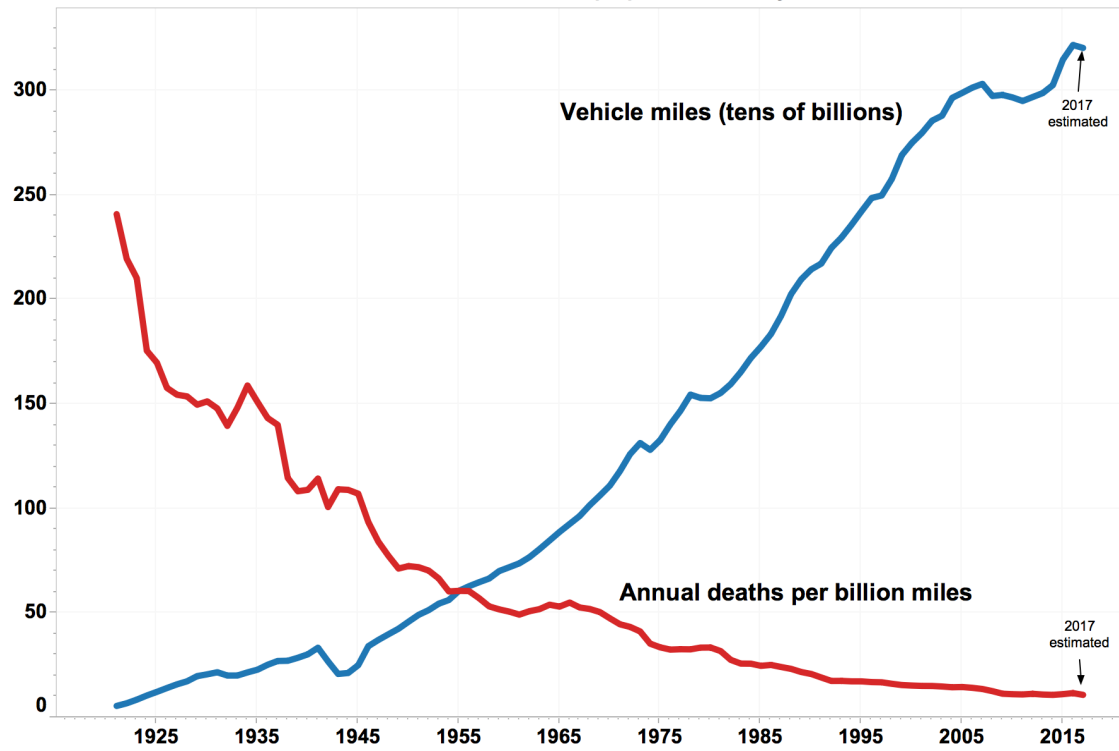
[Reckless driving is] “a sign of the overall lack of consideration we’re showing for other citizens, whether it be wearing masks, or not getting vaccinated, or how we drive.

It’s very aggressive. It’s very selfish.”

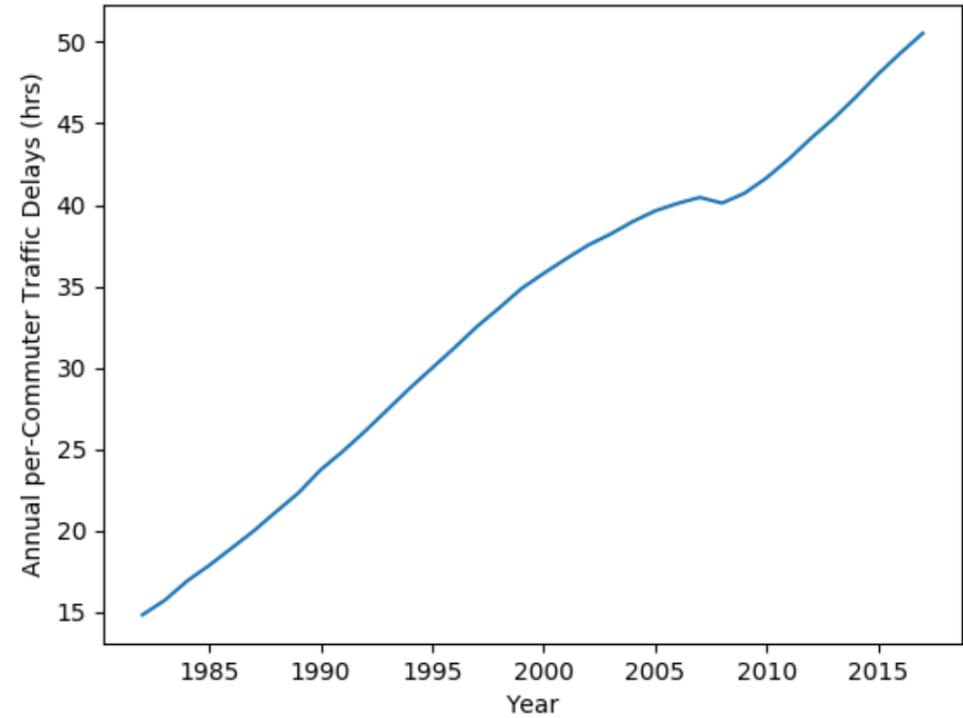
Average Annual per-Commuter Traffic Delays over Time



US vehicle miles traveled and propotionate fatality rate



Average Annual per-Commuter Traffic Delays over Time



FORGIVING DESIGN

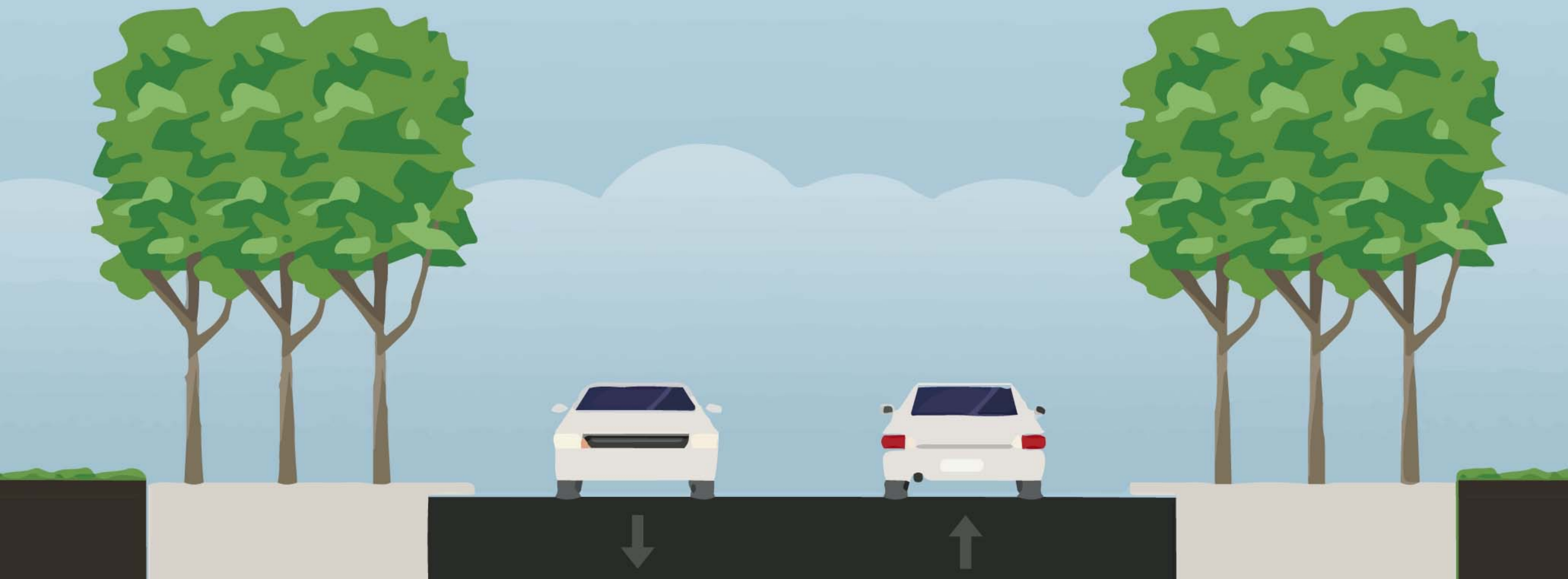


FORGIVE

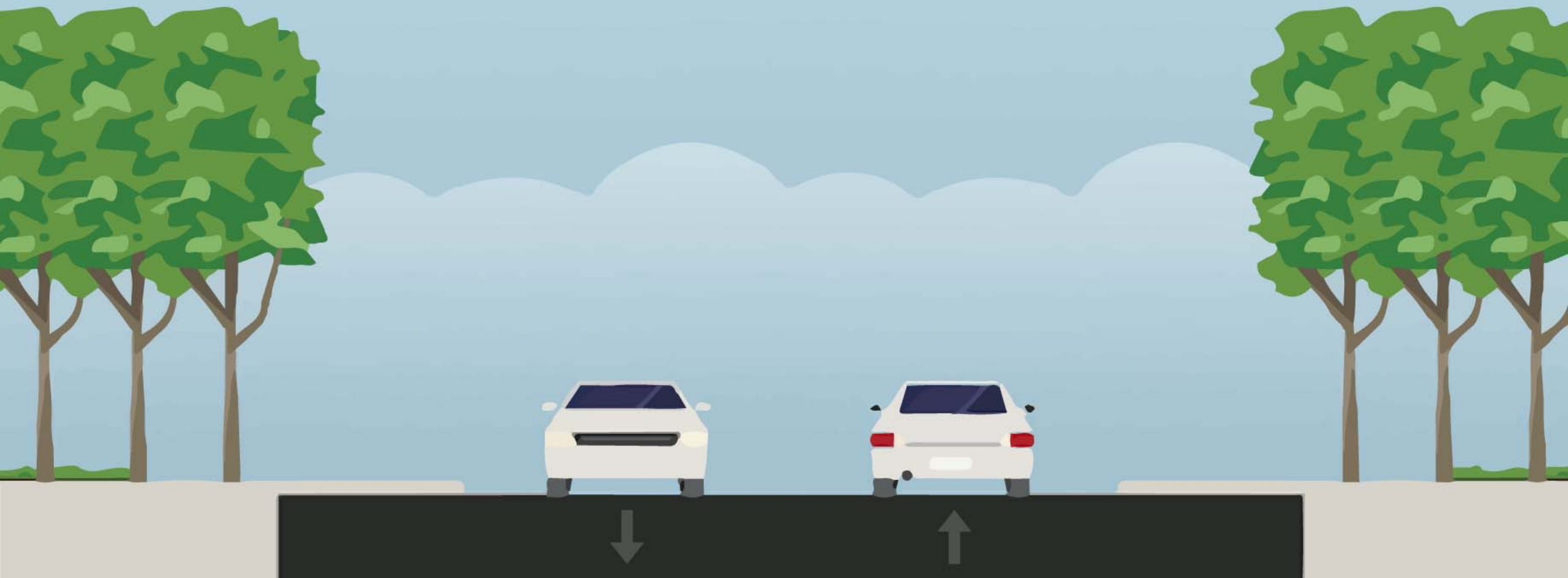
FORGIVING DESIGN



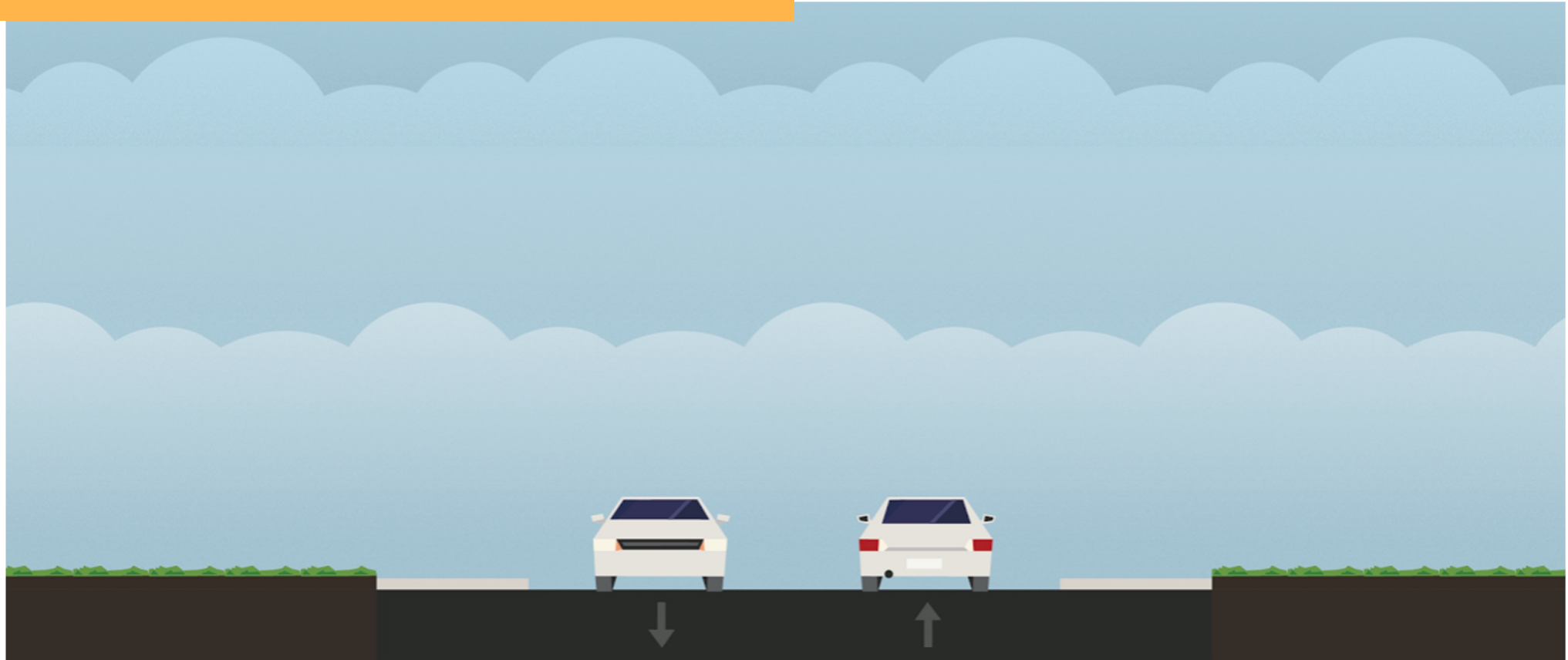
FORGIVING DESIGN



FORGIVING DESIGN



FORGIVING DESIGN



FORGIVING DESIGN



Manual on Uniform Traffic Control Devices

for Streets and Highways

2009 Edition

225. Street – see Highway



SPEED
LIMIT
25

SHERIFF

45

YOUR SPEED



SYSTEM 1

Intuition & instinct



Unconscious
Fast
Associative
Automatic pilot



SYSTEM 2

Rational thinking



Takes effort
Slow
Logical
Lazy
Indecisive

Uncomfortable Truth

People will tend to drive the speed they feel comfortable driving, regardless of any other factor.

**BE SAFE.
DRIVE SMART.**



**Some
mistakes you
can't take back.**

Stop for pedestrians
at crosswalks.

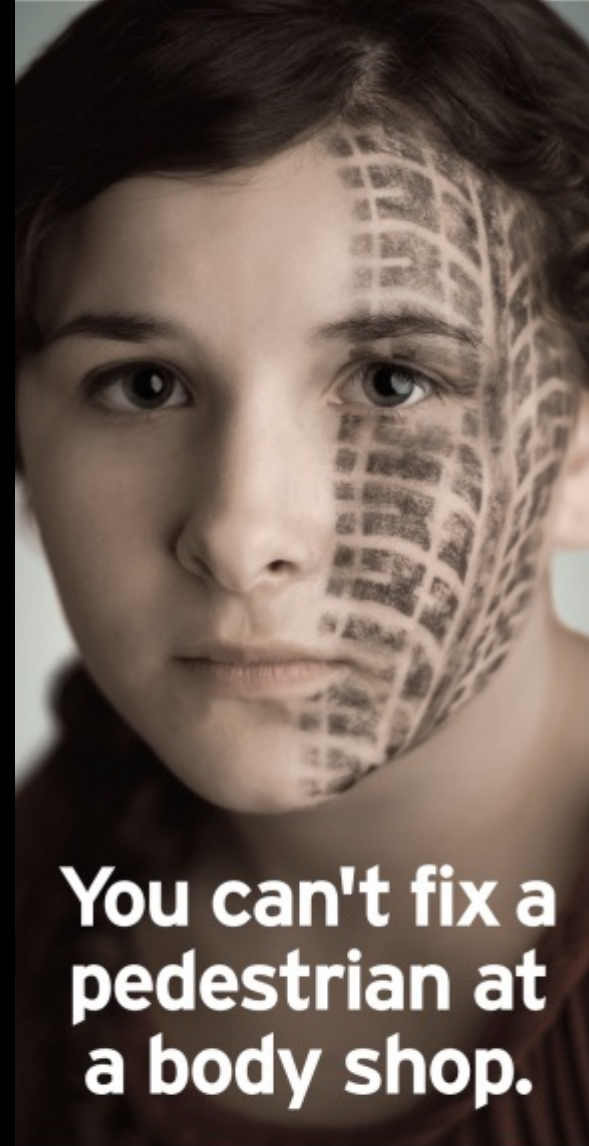
BE SAFE. DRIVE SMART. 
#EndTheStreakTX



**Pedestrians
don't come
with airbags.**

Yield the right of way
to pedestrians.

BE SAFE. DRIVE SMART. 
#EndTheStreakTX

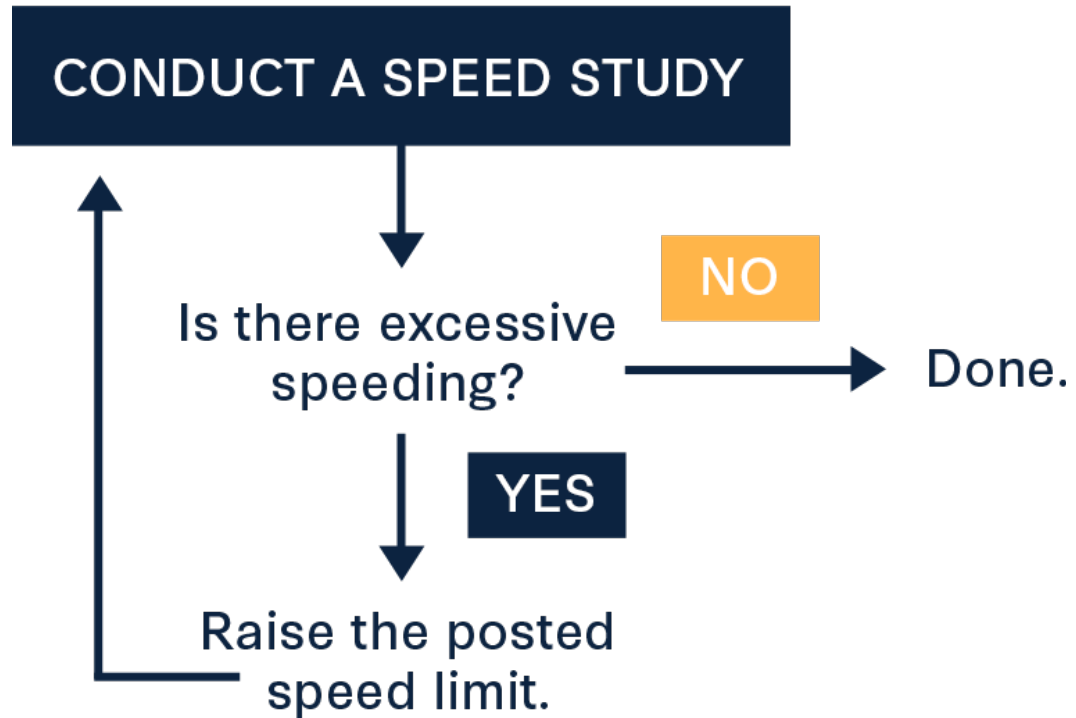


**You can't fix a
pedestrian at
a body shop.**

Slow down and
watch for pedestrians.

BE SAFE. DRIVE SMART. 
#EndTheStreakTX

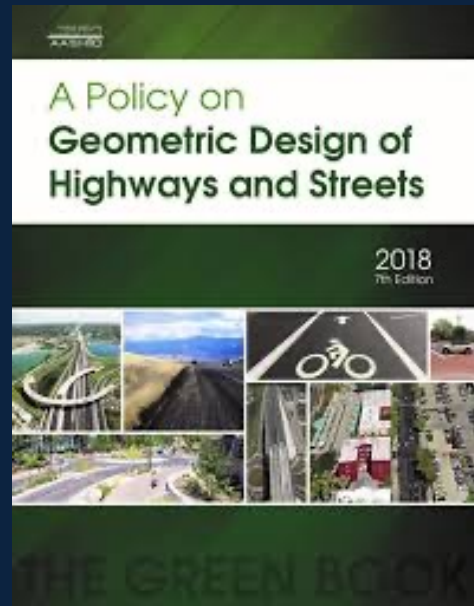
Standard Engineering Approach

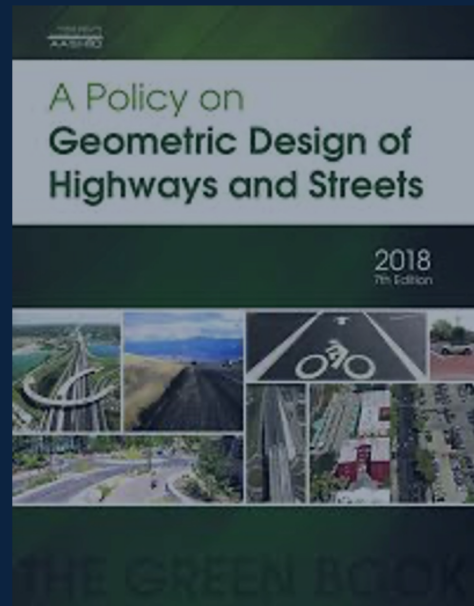


If you need a sign to tell people to slow down...



...you designed your street wrong.





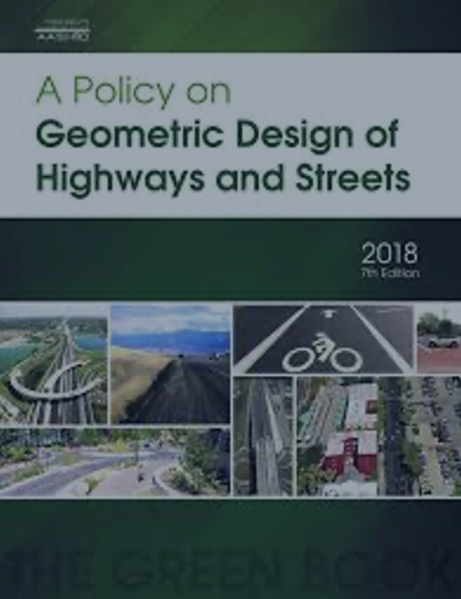
SAFETY



SPEED



VOLUME



SAFETY



COST

Engineer's Priorities

SPEED

VOLUME

SAFETY

COST





Engineer

Society

SPEED

VOLUME

SAFETY

COST

Engineer

SPEED

VOLUME

SAFETY

COST

Society

SAFETY

COST

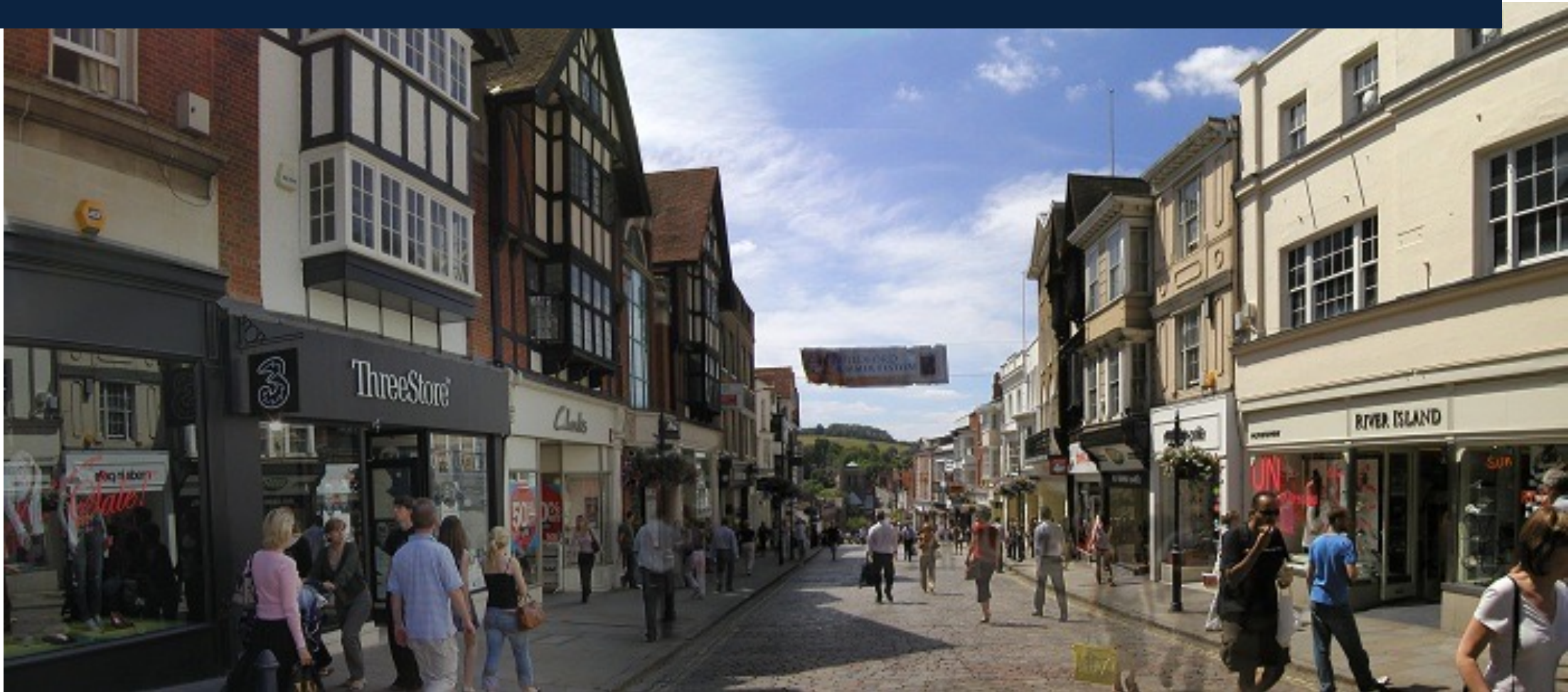
VOLUME

SPEED

Complete Streets accommodate pedestrians within an auto-dominated environment.



Strong Towns accommodate automobiles within an environment dominated by people.





www.strongtowns.org



A BOTTOM-UP REVOLUTION TO REBUILD
AMERICAN PROSPERITY

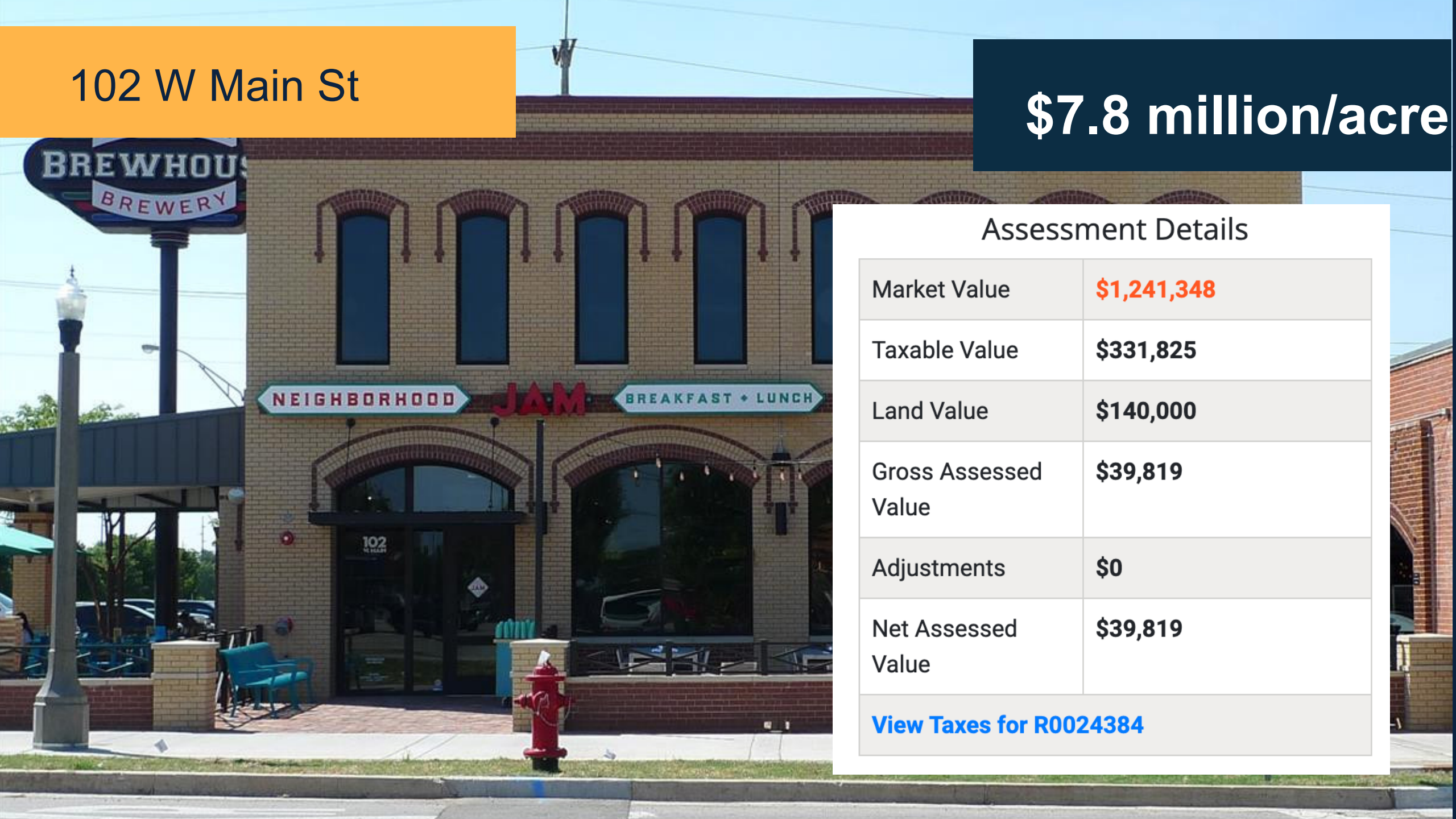
102 W Main St

\$7.8 million/acre

Assessment Details

Market Value	\$1,241,348
Taxable Value	\$331,825
Land Value	\$140,000
Gross Assessed Value	\$39,819
Adjustments	\$0
Net Assessed Value	\$39,819

[View Taxes for R0024384](#)



1500 24th Ave

\$1.4 million/acre



Assessment Details

Market Value	\$22,031,444
Taxable Value	\$22,031,444
Land Value	\$8,285,112
Gross Assessed Value	\$2,643,773
Adjustments	\$0
Net Assessed Value	\$2,643,773

[View Taxes for R0151824](#)

1500 24th Ave

\$22 million

\$1.4 million/acre

Jam

\$1.2 million

\$7.8 million/acre

How can we improve a \$22 million property to be worth a comparable \$123.63 million?

No City Should Rely Primarily on a Sales Tax for Funding

Charles Marohn · May 1, 2023



(Source: [Unsplash](#)/Patrick Tomasso.)

The concept of a Value Added Tax (VAT) used to be a popular discussion topic in public policy circles, especially in the past when Americans used to be more sensitive to debt and deficits. Culturally, we no longer have that sensitivity, despite some flaccid political posturing of late that, to me, seems more campaign rhetoric than an assertion of core beliefs. At the federal level, we're all committed to debt now.

Your City Uses the Sales Tax. What Now?

Charles Marohn · October 2, 2023



(Source: [Unplash](#)/Chris Briggs.)

I've previously discussed the reasons a local government [shouldn't rely primarily on the sales tax](#). Cities reliant on the sales tax find it hard to be concerned about the long-term implications of present actions

RELATED STORIES



Dollar Stores Are Leeching the Economic Vitality of Communities Across the U.S.

Strong Towns · Jun 5, 2023



Your City Uses Sales Tax. Now What?

- Acknowledge the Incentives. Make This Acknowledgement Part of the Culture.
- Go Beyond GAAP To Track What Is Really Going On.
- Figure Out What Works. Do More of That.
- State Assumptions for Projects. Compare With Results.



What is the next smallest step Norman can take right now?

Housing Ladder



Larger House

Addition to Starter Home

Starter Home

Accessory Dwelling Unit (ADU)

Cultivate a *Local*/Small Developer Ecosystem

BUILD SOUTH BEND!

SMALL DEVELOPER EDUCATION SERIES

All Free and All Virtual:

Monthly on 3rd Wednesdays, 6:30-8:00

FOR DETAILED INFO & ZOOM INVITATIONS, RSVP
EEE@SOUTHBENDIN.GOV, OR ONLINE @
WWW.SOUTHBENDIN.GOV/BSB

Winter 2021/2022

Nov 17 - Business Setup
Dec 15 - Building a Team
Jan 19 - Architecture & Design
Feb 16 - Real Estate Law

Spring 2022

March 16 - Building & Zoning Codes
April 20 - Rehabbing Basics
May 18 - Site Work & Concerns

Summer 2022

June 15 - Finding and Managing Investors
July 20 - Working with Contractors
Aug 17 - Leases, Tenants, and Property Management



Image: City of South Bend, IN



▲ Accessory dwelling units (or ADUs) come in many shapes and styles.



Barriers to ADUs (Where They're Legal!)

- Parking Requirements
- Size, Form, and Setback Restrictions
- Owner-Occupancy Requirements
- Permitting / Design
- Cost and Financing
- Appraisal

Florida City Prepares Pre-Approved Plans To Lower Barriers for Small Developers

Ben Abramson · July 31, 2023



(Source: [City of Groveland.](#))



IN PROGRESS DRAFT

DETACHED HOUSE (2 BED)
 2 BED / 1.5 BATH

03.28.2023
 DRAFT SET

A-4.OIA

EXTERIOR DETAILS (OPTIONAL)

ALL TRIM TO BE MADE OF FIBER CEMENT, CELLULAR PVC, OR ENGINEERED WOOD.

G1 MAIN ROOF - EAVE DETAIL
 Scale: 1/2" = 1'-0"

- WOOD TRUSS, STRUCTURE BY OTHERS
- ARCHITECTURAL SHINGLES
- 1/2" WATER SHIELD W/ DAVES AS REQUIRED, 1/4"
- CONTINUOUS METAL FLASHING W/ DRIP EDGE
- GUTTER (OPTIONAL)
- 1X6 FASCIA
- 2X BLOCKING SUB-FASCIA
- SOFFIT BOARD
- 1X2 TRIM
- STRUCTURAL BEAM WRAPPED IN 1X TRIM BOARD ON 3 SIDES, STRUCTURE BY OTHERS
- SQUARE COLUMN WRAPPED IN 1X TRIM DOMES, 1/4"
- CEILING BOARD (JURKING AS NEEDED)
- 1X2 TRIM
- STRUCTURAL BEAM WRAPPED IN 1X TRIM BOARD ON 3 SIDES, STRUCTURE BY OTHERS
- 1/2" GY. SD. CEILING
- FIBER CEMENT SIDING
- WATER RESISTANT BARRIER
- 1/2" STRUCTURAL SHEATHING
- 2X6 WOOD STUD WALLS W/ INSULATION (R-15 MIN)
- 1/2" GY. SD.

****1-HR FIRE-RESISTANCE RATING ON UNDERSIDE OF EAVES IF PROJECTION HAS A FIRE SEPARATION DISTANCE OF > 2FT AND < 8FT, PER CODE.**

G2 MAIN ROOF - GABLE END DETAIL
 Scale: 1/2" = 1'-0"

- RIDGE VENT
- WOOD TRUSSES, STRUCTURE BY OTHERS
- 2X4 OUTLOOKER
- CONTINUOUS METAL FLASHING W/ DRIP EDGE
- 1X6 FASCIA
- 2X BLOCKING SUB-FASCIA
- SOFFIT BOARD
- 1X4 TRIM
- FLASHING REQUIRED BY WTR, CONCRETE & SHEATHING
- 1/2" GY. SD. SUBSLOPE 1:51
- 1/2" GY. SD. SUBSLOPE 1:51
- 1/2" GY. SD. SUBSLOPE 1:51
- 1/2" GY. SD. SUBSLOPE 1:51

****1-HR FIRE-RESISTANCE RATING ON UNDERSIDE OF EAVES IF PROJECTION HAS A FIRE SEPARATION DISTANCE OF > 2FT AND < 8FT, PER CODE.**

G3 FRONT PORCH SECTION
 Scale: 1/2" = 1'-0"

- WOOD TRUSS OR RAFTERS, STRUCTURE BY OTHERS
- ARCHITECTURAL SHINGLES
- 1/2" STRUCTURAL SHEATHING W/ ROOFING FELT FOR SIMILAR PER GOOD
- CONTINUOUS METAL FLASHING W/ DRIP EDGE
- GUTTER (OPTIONAL)
- 1X6 FASCIA
- 2X BLOCKING SUB-FASCIA
- SOFFIT BOARD
- 1X2 TRIM
- STRUCTURAL BEAM WRAPPED IN 1X TRIM BOARD ON 3 SIDES, STRUCTURE BY OTHERS
- SQUARE COLUMN WRAPPED IN 1X TRIM DOMES, 1/4"
- CEILING BOARD (JURKING AS NEEDED)
- 1X2 TRIM
- STRUCTURAL BEAM WRAPPED IN 1X TRIM BOARD ON 3 SIDES, STRUCTURE BY OTHERS

****1-HR FIRE-RESISTANCE RATING ON UNDERSIDE OF EAVES IF PROJECTION HAS A FIRE SEPARATION DISTANCE OF > 2FT AND < 8FT, PER CODE.**

G4 FRONT PORCH - EAVE DETAIL
 Scale: 1/2" = 1'-0"

- WOOD TRUSS OR RAFTERS, STRUCTURE BY OTHERS
- ARCHITECTURAL SHINGLES
- 1/2" WATER SHIELD W/ DAVES AS REQUIRED, 1/4"
- CONTINUOUS METAL FLASHING W/ DRIP EDGE
- GUTTER (OPTIONAL)
- 1X6 FASCIA
- 2X BLOCKING SUB-FASCIA
- SOFFIT BOARD
- 1X2 TRIM
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- STRUCTURAL BEAM WRAPPED IN 1X TRIM BOARD ON 3 SIDES, STRUCTURE BY OTHERS
- 1/2" GY. SD. CEILING
- FIBER CEMENT SIDING
- WATER RESISTANT BARRIER
- 1/2" STRUCTURAL SHEATHING
- 2X6 WOOD STUD WALLS W/ INSULATION (R-15 MIN)
- 1/2" GY. SD.

****1-HR FIRE-RESISTANCE RATING ON UNDERSIDE OF EAVES IF PROJECTION HAS A FIRE SEPARATION DISTANCE OF > 2FT AND < 8FT, PER CODE.**

G5 FRONT PORCH SECTION
 Scale: 1/2" = 1'-0"

- WOOD TRUSS OR RAFTERS, STRUCTURE BY OTHERS
- ARCHITECTURAL SHINGLES
- 1/2" WATER SHIELD W/ DAVES AS REQUIRED, 1/4"
- CONTINUOUS METAL FLASHING W/ DRIP EDGE
- GUTTER (OPTIONAL)
- 1X6 FASCIA
- 2X BLOCKING SUB-FASCIA
- SOFFIT BOARD
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****1-HR FIRE-RESISTANCE RATING ON UNDERSIDE OF EAVES IF PROJECTION HAS A FIRE SEPARATION DISTANCE OF > 2FT AND < 8FT, PER CODE.**





The Carriage House

The Carriage House is an ancillary dwelling unit with a private entrance, available to be located in the rear yard of any primary building. The additional unit typically sits above a 2-car garage and provides gentle neighborhood density, flexible living space for multi-generational arrangements, or opportunities for a rental income.



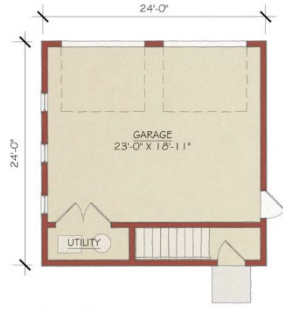
Option A



Option B



Option C



Ground Floor



Second Floor

Building Type Overview

Building Dimensions	
Building Height	2 story
Building Width	24'
Building Depth	24'
Program	
Unit Configuration	1 bed / 1 bath
Unit Size (gross building)	1,152 sq. ft.
Basement (unfinished)	None
Garage (unconditioned)	576 sq. ft.
2nd Floor	576 sq. ft.
Lot Standards	
Lot Width (min.)	34'
Lot Width (max.)	None
Cost Assumptions	
Preliminary Construction Estimates *	\$130,000 - \$180,000
Financing Options	Personal Financing

* Numbers shown are for basic estimation purposes only. Pricing is based on Fall 2021 cost assumptions and are subject to future market variation.

ZONING DISTRICTS ALLOWED

- SL
- S2
- U1
- U2
- U3
- UF
- NC
- DT

In U SL, U2, or U3 district the owner(s) of the lot upon which the carriage house is located shall occupy or lease one of the dwelling units on the premises.

Neighborhood Infill | Pre-Approved Building Types



A typical South Bend neighborhood block showing potential development of vacant lots using

Norman Community Action Lab

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www.Strongtowns.org/Norman

Sign up to access all lessons and be notified when new sessions
are available.

Welcome to the Norman Community Action Lab

[Introduction and Welcome\(0:22\)](#)

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