

A vibrant, high-angle photograph of a busy city intersection. In the foreground, a diverse group of pedestrians is crossing the street. A woman in a white tank top and shorts is pushing a black stroller with a child inside. Other pedestrians include a man in a white polo shirt and shorts, a woman in a grey t-shirt and jeans, and a man in a blue t-shirt. In the background, there are several cars, including a white van and a yellow car. The buildings are multi-story, historic-style structures with arched windows and storefronts. A traffic light and a street sign for "Colorado St" are visible. The sky is clear and blue.

# The Barrier of the City Engineer

Buff Brown  
April 19, 2024

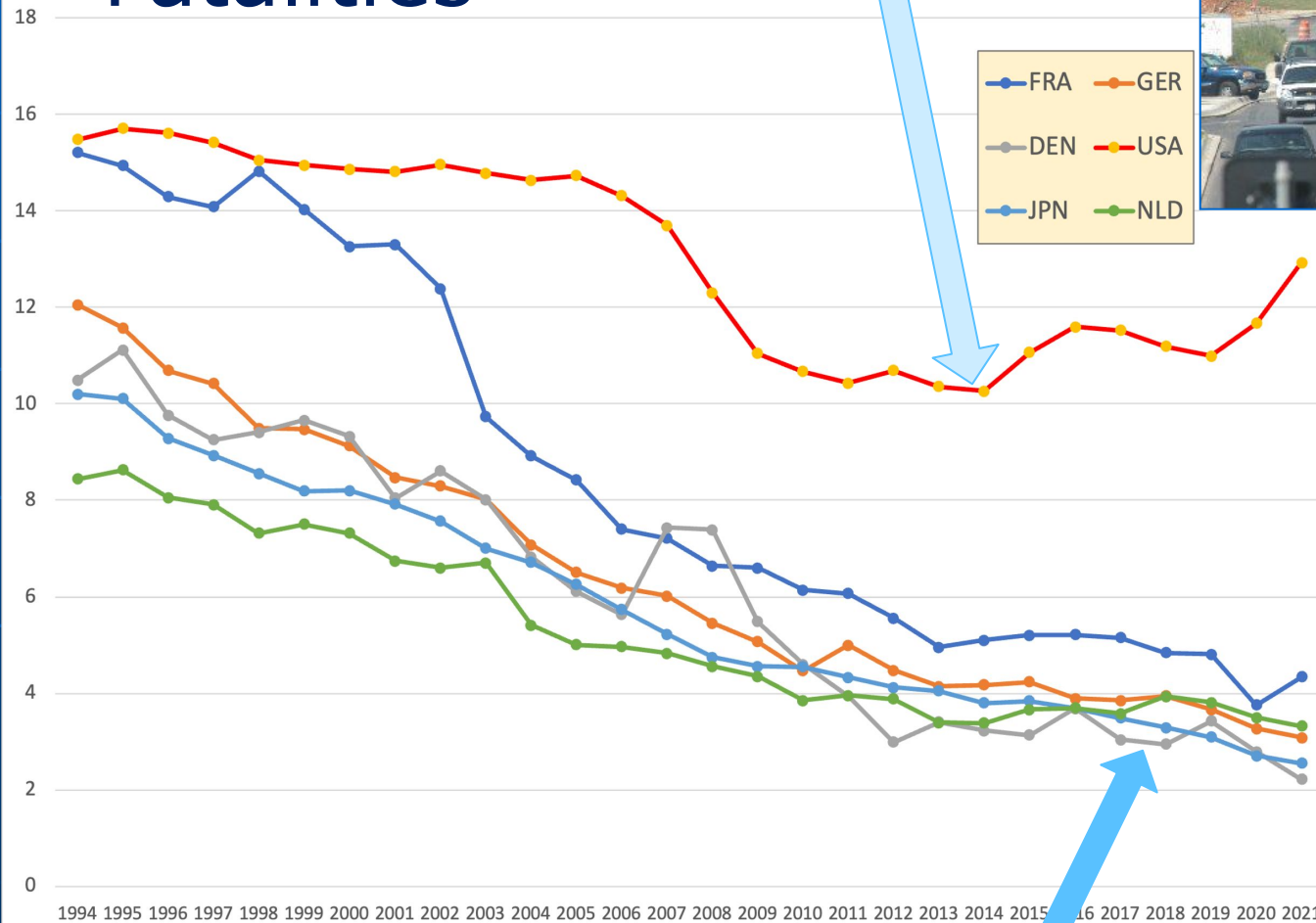
California Bike Summit



# USA →

## Fatalities

Fatalities per 1M People



# Europe & Japan →











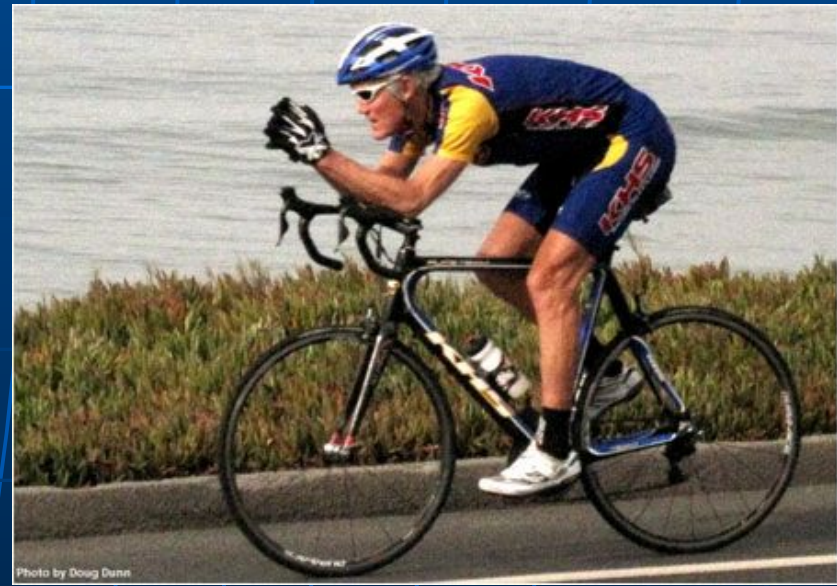
# Engineering Bingo

B	I	N	G	O
MUTCD Warrants not met	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
Rearend Crash Risk	Design Standards (AASHTO)	Too close to Intersection	Will increase Congestion	Against City Policy
Loss of Parking	Below 85-percentile Speeds	Will Delay Emergency Vehicles	Un-acceptable Delay	Stop Signs are not for calming
False Sense of Security	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
Poor Level of Service (LOS)	But the General Plan says	Standard design or Lawsuit	Too Costly	Impatient drivers are dangerous



# Engineering Bingo

Poor Level  
of Service  
(LOS)





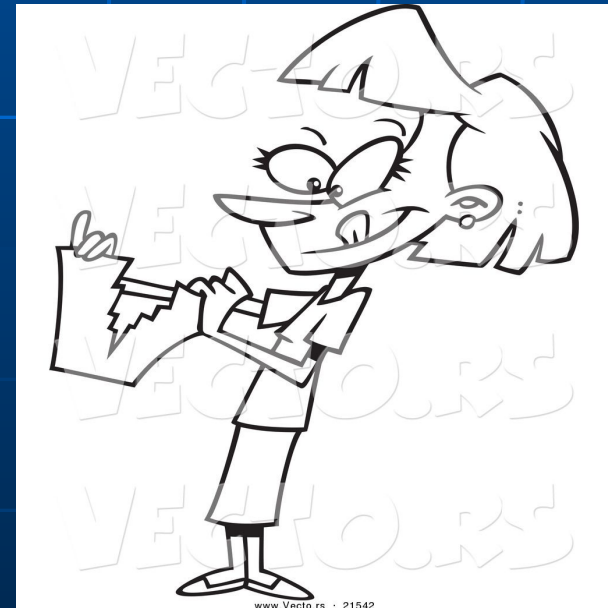
# Engineering Bingo

B	I	N	G	O
MUTCD Warrants not met	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
Rearend Crash Risk	Design Standards (AASHTO)	Too close to Intersection	Will increase Congestion	Against City Policy
Loss of Parking	Below 85-percentile Speeds	Will Delay Emergency Vehicles	Un-acceptable Delay	Stop Signs are not for calming
False Sense of Security	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
Poor Level of Service (LOS)	But the General Plan says	Standard design or Lawsuit	Too Costly	Impatient drivers are dangerous



# Engineering Bingo

MUTCD  
Warrants  
not met



# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
Rearend Crash Risk	Design Standards (AASHTO)	Too close to Inter- section	Will increase Congestion	Against City Policy
Loss of Parking	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
False Sense of Security	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	Impatient drivers are dangerous



# Engineering Bingo

False  
Sense of  
Security



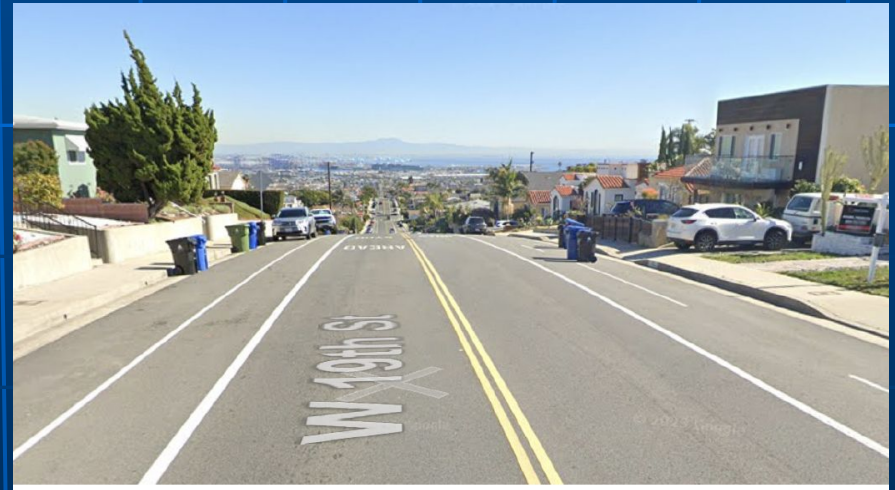
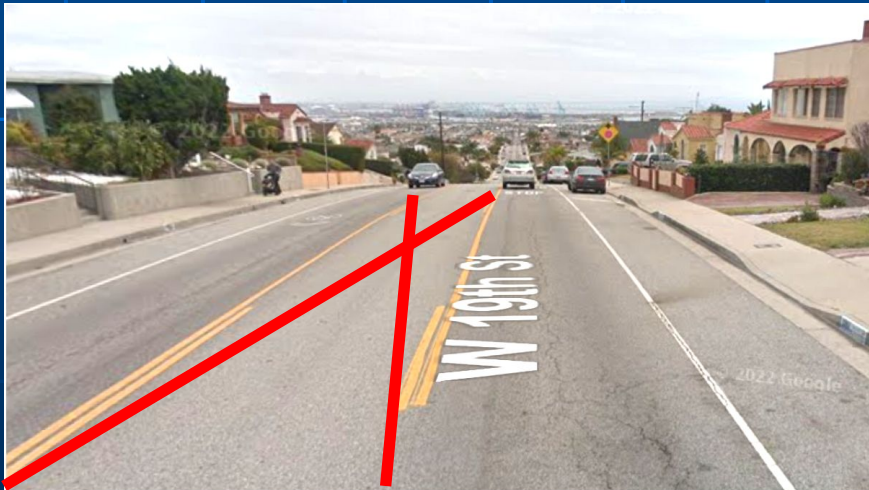
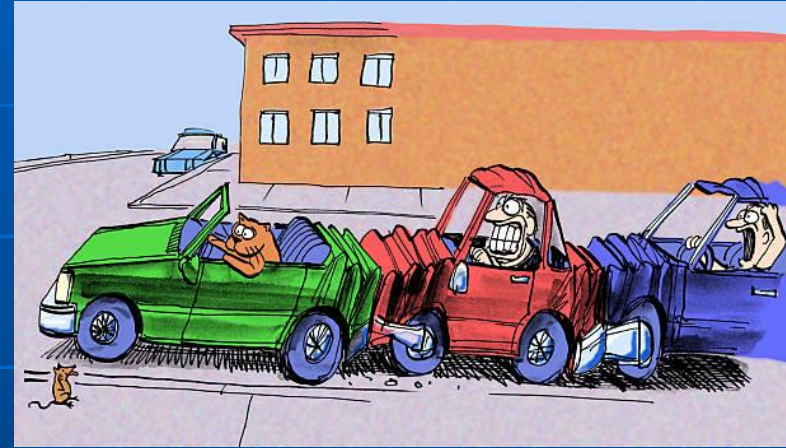
# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
Rearend Crash Risk	Design Standards (AASHTO)	Too close to Inter- section	Will increase Congestion	Against City Policy
Loss of Parking	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
<del>False Sense of Security</del>	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	Impatient drivers are dangerous



# Engineering Bingo

Rearend  
Crash Risk



19<sup>th</sup> St: as 3-Lanes

As 2-lane+bike lanes

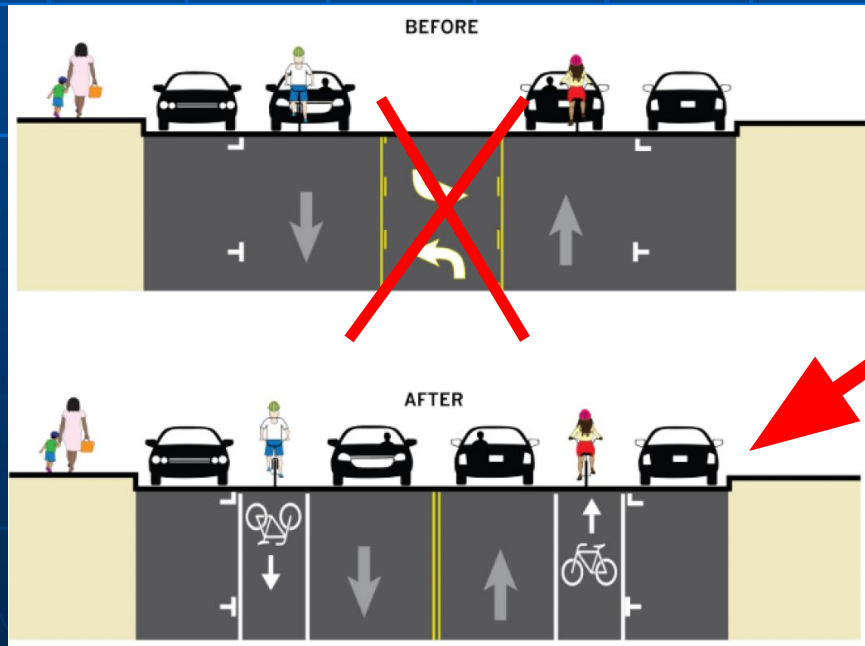
# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
<del>Rear-end Crash Risk</del>	Design Standards (AASHTO)	Too close to Inter- section	Will increase Congestion	Against City Policy
Loss of Parking	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
<del>False Sense of Security</del>	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	Impatient drivers are dangerous



# Engineering Bingo

Impatient  
drivers are  
dangerous



UCLA 2023 Paper

- 40% crash reduction
- NO Center Turn Lane
  - + bike lanes

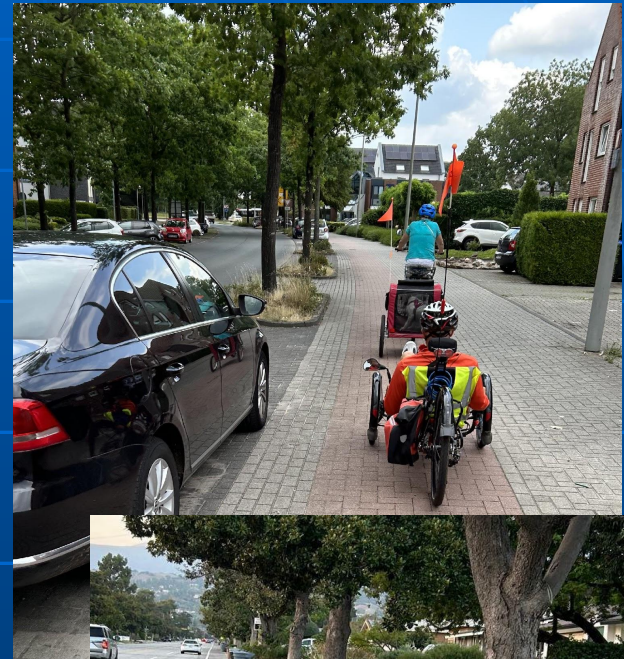
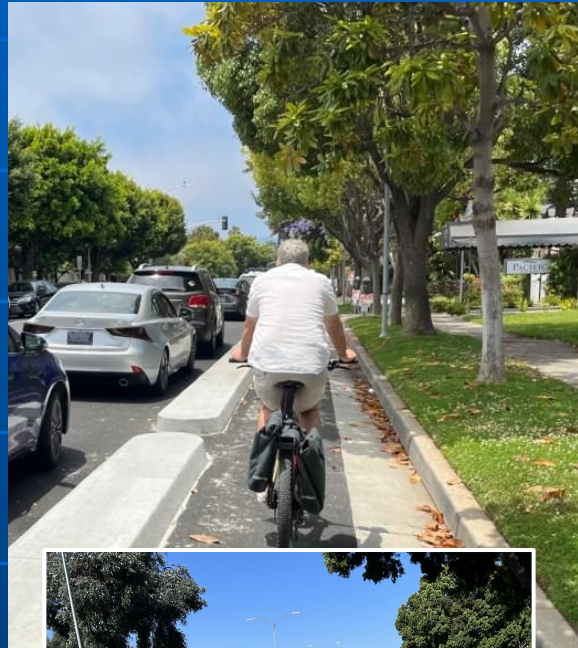
# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	The Neighbors oppose it	New is Not Expected	High level of Left Turns
<del>Rear-end Crash Risk</del>	Design Standards (AASHTO)	Too close to Inter- section	Will increase Congestion	Against City Policy
Loss of Parking	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
<del>False Sense of Security</del>	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	<del>Impatient drivers are dangerous</del>

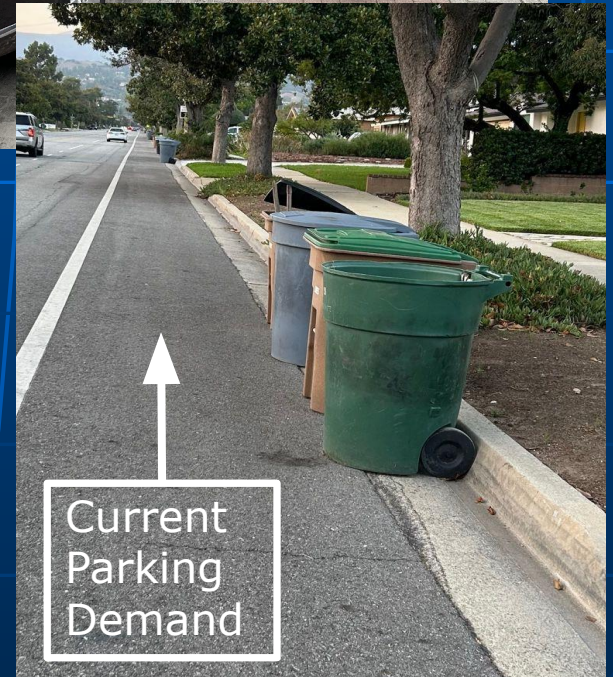


# Engineering Bingo

Loss of  
Parking



The  
Neighbors  
oppose it



Current  
Parking  
Demand

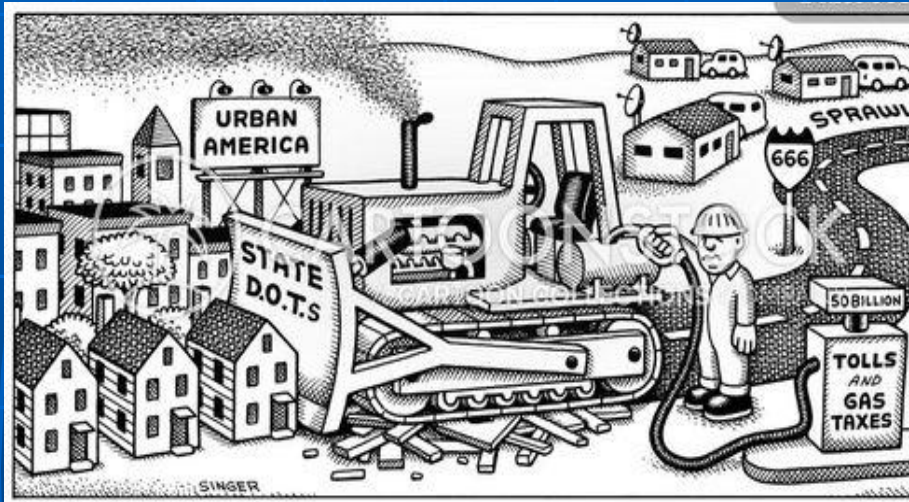
# Engineering Bingo

B	I	N	G	O
<del>More than 5 Warrants for traffic</del>	Breaks ADA Rules	<del>The Neighbors oppose it</del>	New is Not Expected	High level of Left Turns
<del>Redundant Crosswalk Risk</del>	Design Standards (AASHTO)	Too close to Inter- section	Will increase Congestion	Against City Policy
<del>Loss of Parking</del>	Below 85- percentile Speeds	Unacceptable Delay Emergency Vehicle	Un- acceptable Delay	Stop Signs are not for calming
<del>Failure of Security of Security</del>	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	<del>Intersection driveways are dangerous</del>

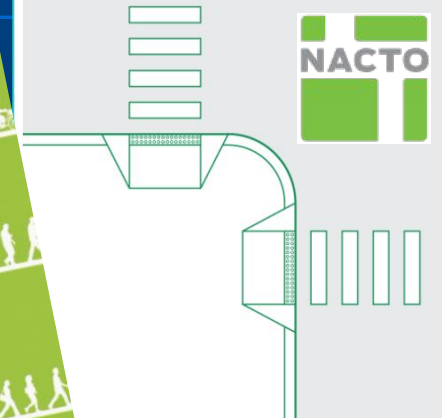


# Engineering Bingo

Design  
Standards  
(AASHTO)



A smaller curb radius expands the pedestrian area, allowing for better pedestrian ramp alignment.



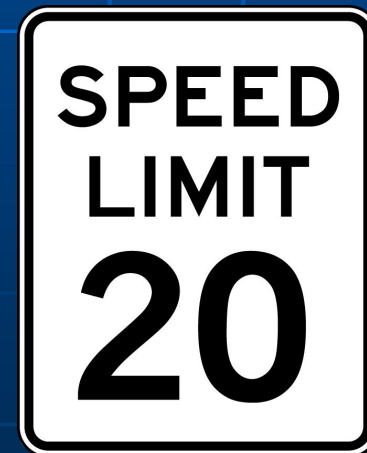
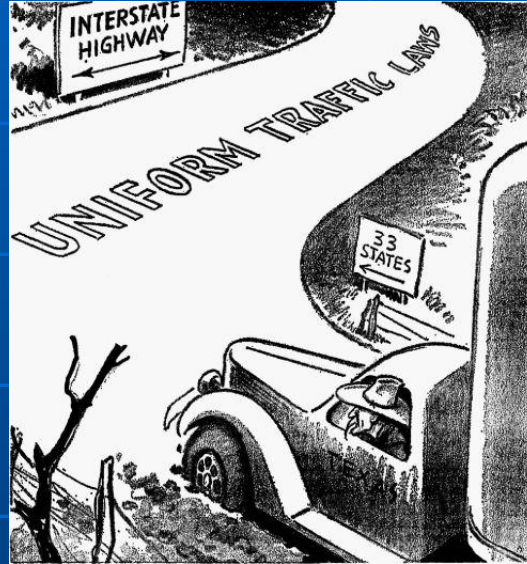
# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	<del>The Neighbors oppose it</del>	New is Not Expected	High level of Left Turns
<del>Rear-end Crash Risk</del>	<del>Design Standards (AASHTO)</del>	Too close to Inter- section	Will increase Congestion	Against City Policy
<del>Loss of Parking</del>	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
<del>False Sense of Security</del>	Stop signs cause Speeding	Too many Driveways	Our Consultant says ...	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	<del>Impatient drivers are dangerous</del>



# Engineering Bingo

Our  
Consultant  
says ...



# Engineering Bingo

B	I	N	G	O
<del>MUTCD Warrants not met</del>	Breaks ADA Rules	<del>The Neighbors oppose it</del>	New is Not Expected	High level of Left Turns
<del>Rear-end Crash Risk</del>	<del>Design Standards (AASHTO)</del>	Too close to Inter- section	Will increase Congestion	Against City Policy
<del>Loss of Parking</del>	Below 85- percentile Speeds	Will Delay Emergency Vehicles	Un- acceptable Delay	Stop Signs are not for calming
<del>False Sense of Security</del>	Stop signs cause Speeding	Too many Driveways	<del>Our Consultant says ...</del>	Will Damage Vehicles
<del>Poor Level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	<del>Impatient drivers are dangerous</del>



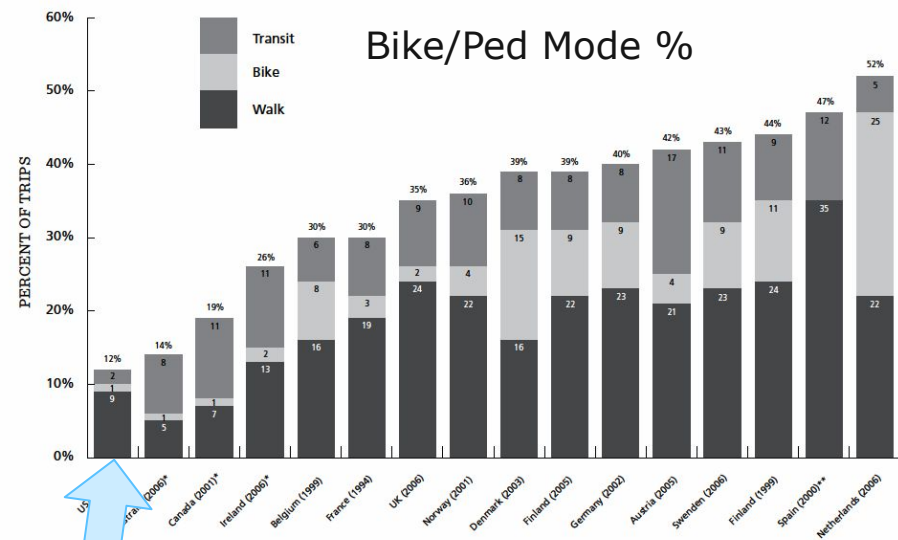
# Engineering Bingo



# Engineering Bingo

B	I	N	G	O
<del>More than 15 Warrants for traffic</del>	Breaks ADA Rules	<del>The Neighbors oppose it</del>	New is Not Expected	High level of Left Turns
<del>Redundant Crash Risk</del>	<del>Sign Standards (AASHTO)</del>	Too close to Inter- section	Will increase Congestion	Against City Policy
<del>Loss of Parking</del>	Below 85- percentile Speeds	<del>Unacceptable Emergency Vehicle</del>	Un- acceptable Delay	Stop Signs are not for calming
<del>Failure of Security</del>	Stop signs cause Speeding	Too many Driveways	<del>Current says ...</del>	Will Damage Vehicles
<del>Poor level of Service (LOS)</del>	But the General Plan says	Standard design or Lawsuit	Too Costly	<del>Inconsistent driving are dangerous</del>

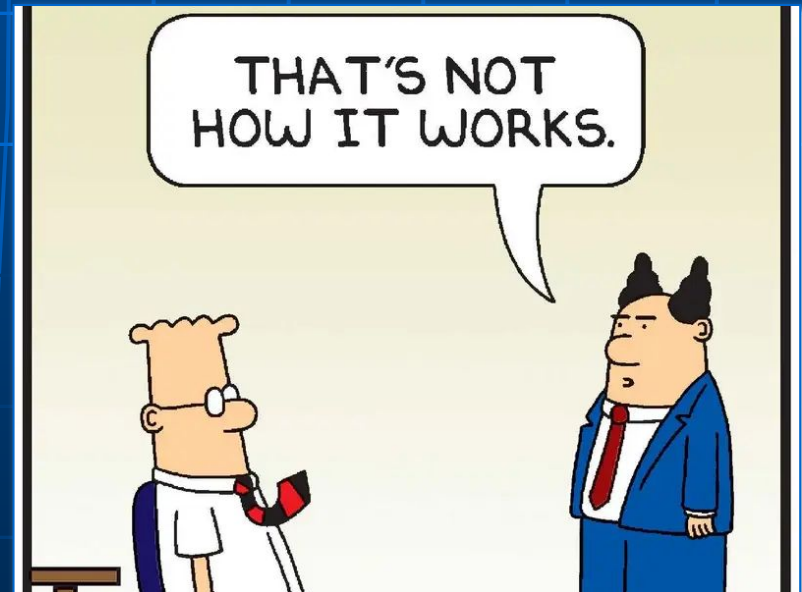




\*work to only  
 \*\*walk and bike combined for Spain  
 Source: Sallis et al., "Walking, Cycling, and Obesity Rates in Europe, North America, and Australia," 2008.



# USA











A photograph of a busy city street intersection. In the foreground, a large group of pedestrians is crossing the street. A woman is pushing a stroller with a child inside. A man in a white shirt and shorts is walking towards the camera. Other pedestrians are in various stages of crossing. In the background, there are cars, including a white van and a yellow car. Buildings with shops like 'LOUISE'S' and 'LOUISE'S VOGUE' are visible. An American flag is on a pole in the upper left. The sky is clear and blue.

# The Barrier of the City Engineer

Buff Brown  
April 19, 2024

California Bike Summit

[www.transportationjusticeblog.com](http://www.transportationjusticeblog.com)

[buff.brown11@gmail.com](mailto:buff.brown11@gmail.com)