RE-IMAGINING OUR STREETS -SAFE by DESIGN
Tuesday, October 30, 2018
Paula C. Flores, FITE
Of Greenman-Pedersen, Inc.
Traffic violence is a public health crisis!
Motor vehicle deaths, United States, 1913-2016

Source: National Safety Council
Pedestrian fatalities increase from 2007-2016, while all other traffic deaths decrease by 14%.

Source: NHTSA Fatality Analysis Reporting System
2016 Motor Vehicle Crash Highlights

40,327 Fatalities

4.6 Million Injuries

$416.2 Billion in societal costs

the population of a small city — are needlessly killed on American streets every year!

Source: National Safety Council
HUMANIZE THESE DEATHS

Eugene Fischer, 65
Ernest Kelly, 12
Emily Lopez, 17
LaMour Welch, 29
Eugene Fischer, 65
Emily Lopez, 17
Florida - most dangerous state for pedestrians and bicyclists in recent history

Nations Top 10 metro areas with highest pedestrian fatalities

- Cape Coral
- Palm Bay
- Orlando
- Jacksonville
- Daytona Beach
- Lakeland
- Tampa/St. Petersburg
- Sarasota/Bradenton
FLORIDA’S TRANSPORTATION SYSTEM

Floridians’ driving habits

- **80%** Drive Alone
- **17%** of Floridians commute across county lines to work
- **10%** Carpool
- **5%** Work from Home
- **3%** Transit
- **2%** Walk

9 out of 10 Floridians live in urban areas

Source: U.S. Census Bureau (2014).

Licensed Drivers 65+

- Increased by 12.0% (2011-2015)

Licensed Teen Drivers

- Decreased by 4.6% (2011-2015)

FLORIDA’S KEY TRENDS

More aging road users on Florida’s roads:

25% of Florida’s population will be 65+ by 2040.

These users tend to have a harder time seeing, reacting to, and recovering from events that cause crashes.

Source: Bureau of Economic and Business Research (2016).

Growth in population:

- 2011: 18.8M
- 2015: 19.7M
- 2025: 22.6M

Growth in visitors:

- 2011: 87M
- 2015: 107M
- 2025: 159M

FLORIDA’S KEY TRENDS

Technology is changing how we move

28% of Americans age 18-29 have used on-demand ride sharing services.
Frequent users are less likely to own a car and more likely to take transit, walk, or ride a bike.

Floridians are choosing non-automobile modes more often

- **Transit Boardings**: +6% between 2011 and 2014
- **Motorcycle Endorsements**: +13% between 2011 and 2015
- **Walking to Work**: +2% between 2011 and 2014
  Source: Bureau of Economic and Business Research (2016).
- **Bicycling to Work**: +39% between 2011 and 2014
  Source: Bureau of Economic and Business Research (2016).

Google has autonomously driven more than 1.5 Million Miles Nationally
Source: Google Self-Driving Car Project (2016).

90% of the U.S. population owns a cellphone and 20% use their phone for real time traffic or transit information
ZERO IS THE RIGHT GOAL

Vision Zero Ethical Platform

System Designers
- Responsible for safety level in entire system

If road users fail to comply
- System designers take new steps

Road Users
- Responsible for following rules
ZERO IS THE RIGHT GOAL
If there is one thing for us to advocate for with the greatest benefit with the lowest cost, and easy to implement, what would that be?

*Sig Hutchinson, Wake County Commissioner*
VISION ZERO - LESSONS LEARNED

COMMIT TO SPEED MANAGEMENT

• not simply a strategy or an optional tool
• it is fundamental and critical
SPEED TAKES THE BACK SEAT

- Pedestrian fatality & serious injury risk

18%  50%  77%

- 20 MPH  30 MPH  40 MPH +

Source: FHWA Achieving Multimodal Networks
SPEED MATTERS MOST

As traffic deaths soar, #VisionZero cities pursue lower speed limits & new road design. Learn why Portland leads the movement in our upcoming webinar: bit.ly/2yNeq0B
SPEED LIMIT REDUCTION RESULTS

NYC
- 14% in crashes
- 49% in pedestrian crashes
- 42% in bicyclist crashes

Seattle
- 40% in crashes
- 30% in injury crashes

Mexico City
- 18% in crashes
• Speeding kills more than 10,000/year
• 30% of all fatal crashes nationwide
• Societal cost = $40 Billion annually
• National problem, effective solutions must be applied locally

On par with drunk driving, but doesn’t carry the same social consequences
66% want more transportation options so they have the freedom to choose

73% currently feel they have no choice but to drive

Source: Future of Transportation National Survey (2010)
AMERICANS WANT CHOICES

57%
Want to spend less time in the car

33%
Don’t drive due to age, ability, or economic status

Source: Future of Transportation National Survey (2010)
STREETS ARE INADEQUATE

• No sidewalks
• Too dangerous to cross on foot

Source: Smart Growth America / National Complete Streets Coalition
STREETS ARE INADEQUATE

- Inaccessible for wheelchair users

Source: Smart Growth America / National Complete Streets Coalition
STREETS ARE INADEQUATE

- Uninviting for bus riders

Source: Smart Growth America / National Complete Streets Coalition
STREETS ARE INADEQUATE

- Unsafe for people on bicycles

Source: Smart Growth America / National Complete Streets Coalition
In fact... most of our streets were not built with people in mind!
In fact... most of our streets were built for cars.
Safe by Design

Note: All dimensions measured from curb.
1ST PRIORITY - PEOPLE
MODE PRIORITY - HIERARCHY

- Walking
- Cycling
- Public transit
- Carpooling (HOV)
- Automobiles (SOV)

DEGREE OF SUSTAINABILITY
WHAT ARE COMPLETE STREETS

Streets are for everyone, no matter who they are or how they travel!
FOR ALL USERS, OF ALL ABILITIES
WHAT ARE COMPLETE STREETS

SAFE                          COMFORTABLE                  CONVENIENT
"Capacity" of a Street

HOW DO WE TRANSFORM OUR STREETS?
PEOPLE - MOVING CAPACITY

- **PRIVATE MOTOR VEHICLE**: 700–1,000
- **REGULAR BUS**: 1,000–2,000
- **B-LINE**: 2,000–2,500
- **2-WAY PROTECTED BIKE LANE**: 2,000–3,000
- **B-LINE with DEDICATED LANE**: 3,000–4,000
- **WEST COAST EXPRESS**: 3,000–5,000
- **SIDEWALK**: 5,000–6,500
- **SKYTRAIN**: 16,000–26,000

Typical private motor vehicle capacity on Vancouver arterial streets and potential capacities for walk, bike and transit.

(persons per hour, per lane, per direction)
• Design Users
• Design Vehicle vs. Control Vehicle
• Design Speed vs. Posted Speed vs. Target Speed
• Traffic Characteristics

= Create self-enforcing streets through design

CONTEXT BASED DESIGN CONTROLS

AFFECTS:
• stopping sight distance
• passing sight distance
• median width
• radius/curves
• lateral clearances
• clear zones
• acceleration/deceleration lane need and length
DESIGN GUIDES

...to change the practice and agency norms
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ACTIVE SPEED MANAGEMENT TOOLS

- Roundabouts
- Road Diets
- Lateral shifts or narrowing
- Curb extensions
- Center islands
- Smaller curb radii
- Eliminate free-flow channelized right turn lanes
- On-street parking
DESIGN FLEXABILITY

- Lane widths
- Design vehicle
- Effective Curb Radii
- Speed of turning vehicle
- Pedestrian Crossing Distances
- Medians
- Channelized Right Turns
DESIGN GUIDES

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DESIGN GUIDES

...to change the practice and agency norms

NACTO – National Association City Transportation Officials

• New - NACTO Autonomous Urbanism
DESIGN GUIDES

...to change the practice and agency norms
Addressing the Public Health and Safety crisis is very impactful!

Transportation professionals have a vital role in the solutions!
THANK YOU!