



Re-Engineering for Equity

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MassDOT Secretary and CEO



Most engineers think this is transportation



Transportation is not important for what it *is*

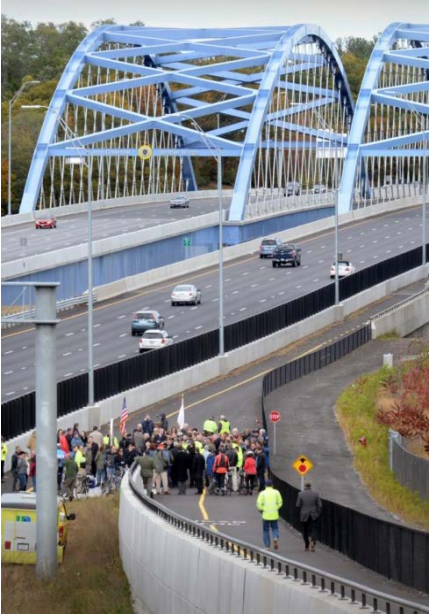
Roads and bridges, trains and tracks

Transportation is important for what it *does*

Gets people where they need to go and
connects them to opportunity

Shapes and supports the economy of
communities and regions

Transportation is about people



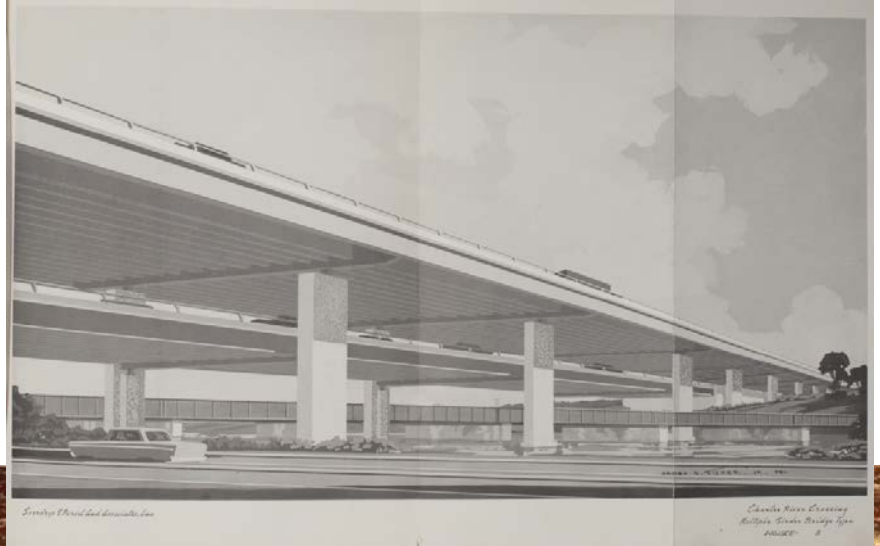
Solving the Right Problem, Optimizing for What's Important



The case of the Inner Belt

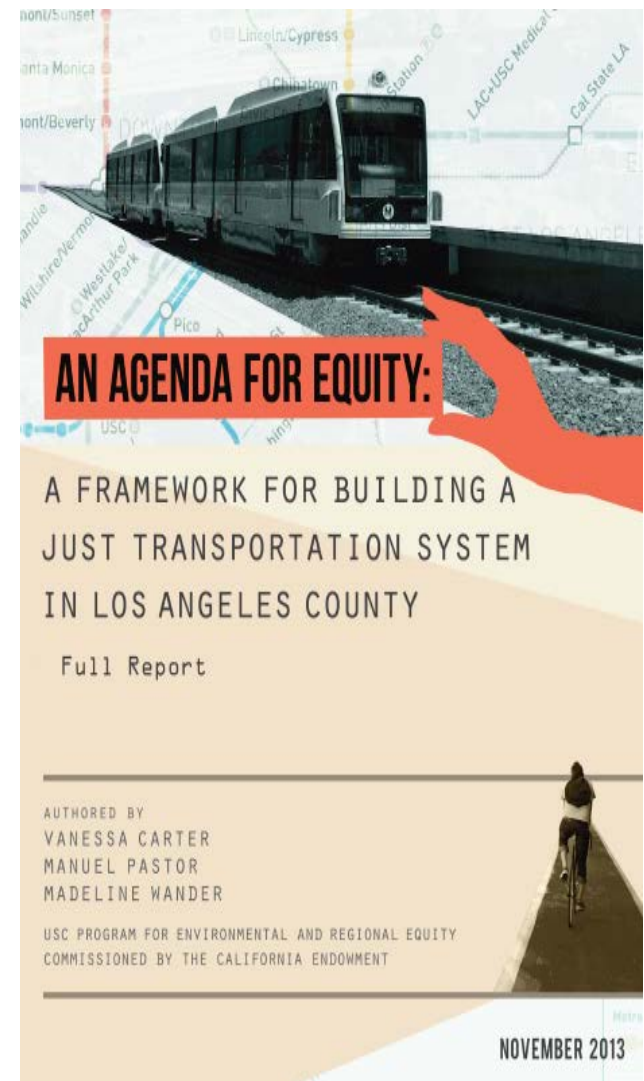


What problem was the road solving?



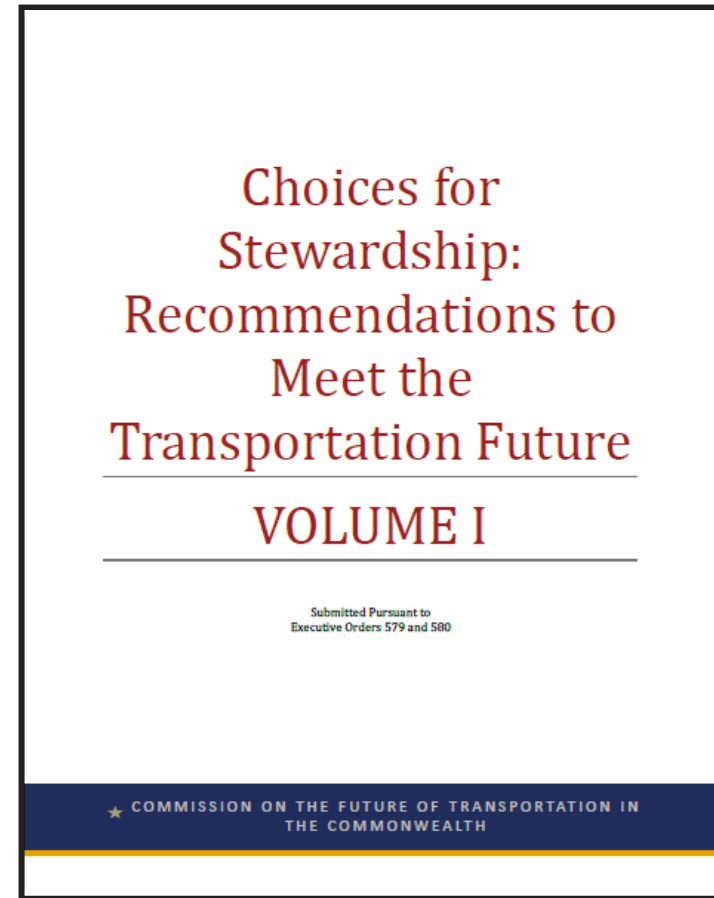
Definition: Transportation equity

1. Equitable access to quality, affordable transportation options and employment, services, amenities and cultural destinations;
2. Shared distribution of the benefits and burdens of transportation systems and investments, such as jobs and pollution, respectively; and
3. Partnership in the planning process that results in shared decision-making and more equitable outcomes for disadvantaged communities while strengthening the entire region



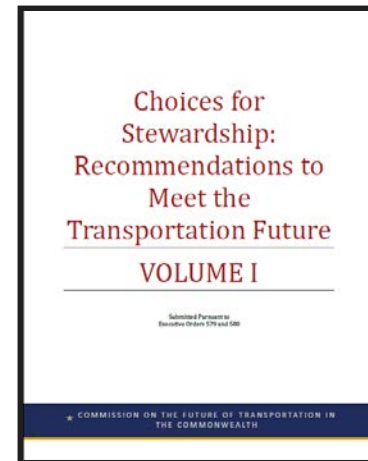
Key Challenges: Equity

“The existing transportation system is made up of transportation haves and have-nots: Today’s transportation system, not just in Massachusetts but nationwide, is inequitable. Those who do not or cannot own or drive a car – due to youth or age, physical or developmental disability, or financial realities – spend more time and money commuting and sometimes simply cannot get where they need to go, especially in rural and low-density areas.”



Recognizing the Impact on Low-Income Populations and Communities of Color

- While it is the Commission's hope that advancements in technology and strategic and thoughtful planning around the future of transportation will improve the quality of life of all residents in the Commonwealth, it was important to the Commission to think about the impact that its recommendations would have on people with low-incomes, disabilities, limited access to public transit and other transportation options, as well as communities of color.
- These individuals, families, and communities are disproportionately affected by many of the challenges currently facing our transportation system and related systemic issues, such as pollution, congestion, long commute times, rising housing costs, and unreliable public transportation.
- The Commission believes it is important for decision-makers to consider the impact of their choices when they shape and implement transportation policy. To help guide decision-makers, the Commission suggests that the best way to learn about the impact of decisions on disadvantaged communities is to invite them to have a seat at the table. We need greater representation from these communities to help shape decisions around investments, policies, and service delivery and not simply assume that advancements in technology will improve social equity issues in the transportation without smart and proactive public policy interventions. By thinking critically about the impact of our decisions and inviting disadvantaged populations to help shape those decisions, the state is better positioned to see real benefits for those with limited transportation options.



Re-Engineering Transportation Departments

DOTs need to continue evolving



HIGHWAY

Build and maintain the roadway network

TRANSPORTATION

Build, operate and maintain the multimodal transportation network

MOBILITY

Collaborate to help people get where they need to go

ACCESSIBILITY

Collaborate to help people get what they need to thrive

Re-Engineering Pedestrian and Bicycle Safety

We don't treat pedestrians and cyclists equitably



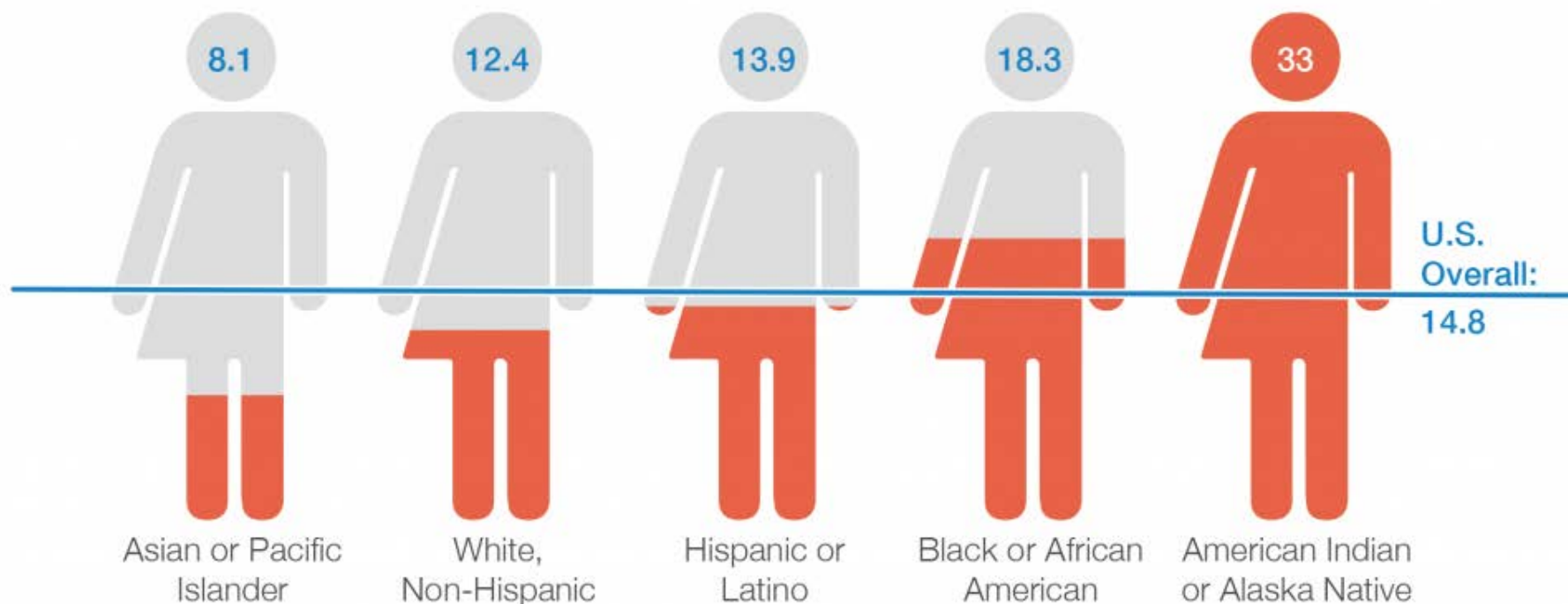
Can you imagine a road that just . . . ends?



Engineering wrong has real consequences

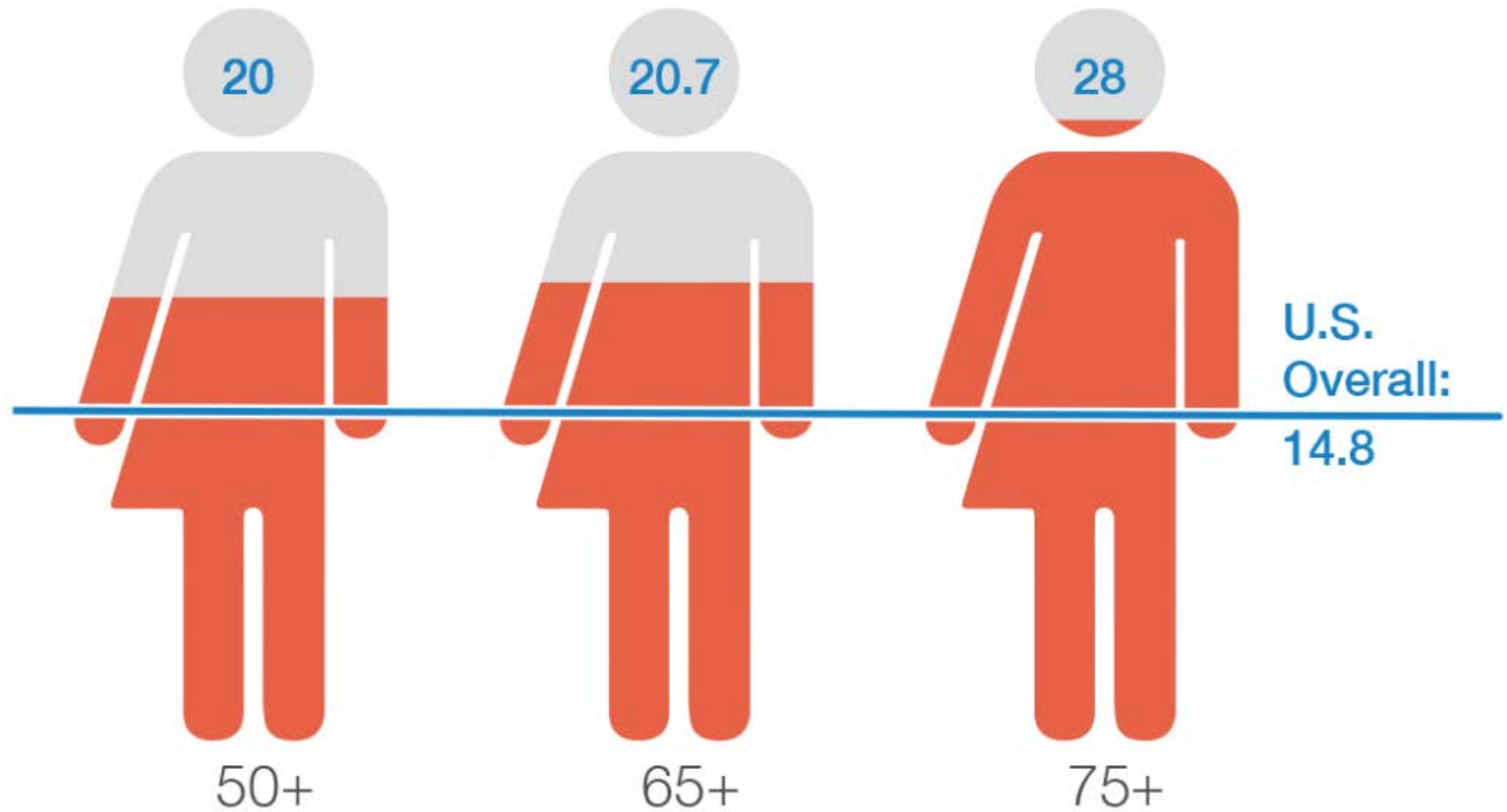
People of color are disproportionately represented in fatal crashes involving people walking.

Relative pedestrian danger by race and ethnicity, 2008-2017



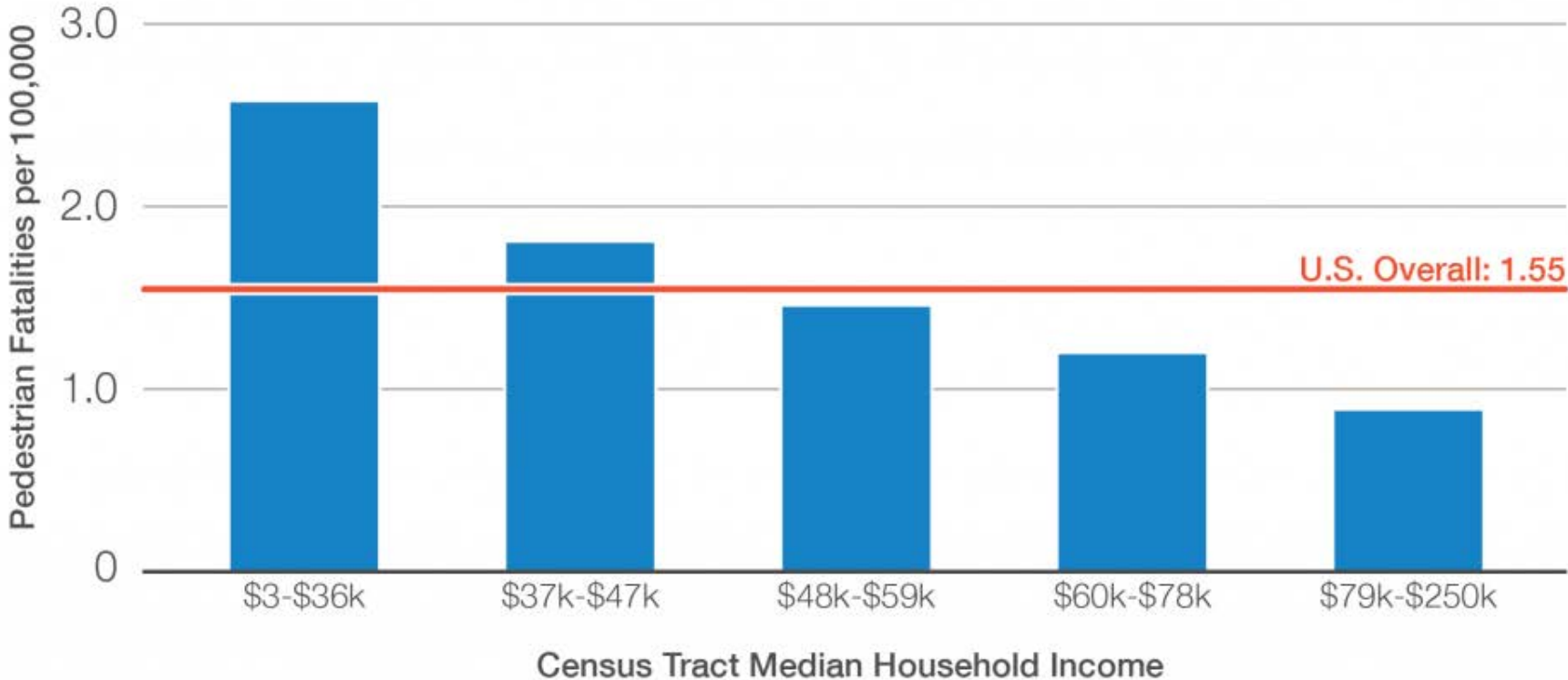
Older adults are disproportionately represented in deaths of people walking

Relative pedestrian danger by age



People die while walking at much higher rates in lower-income communities.

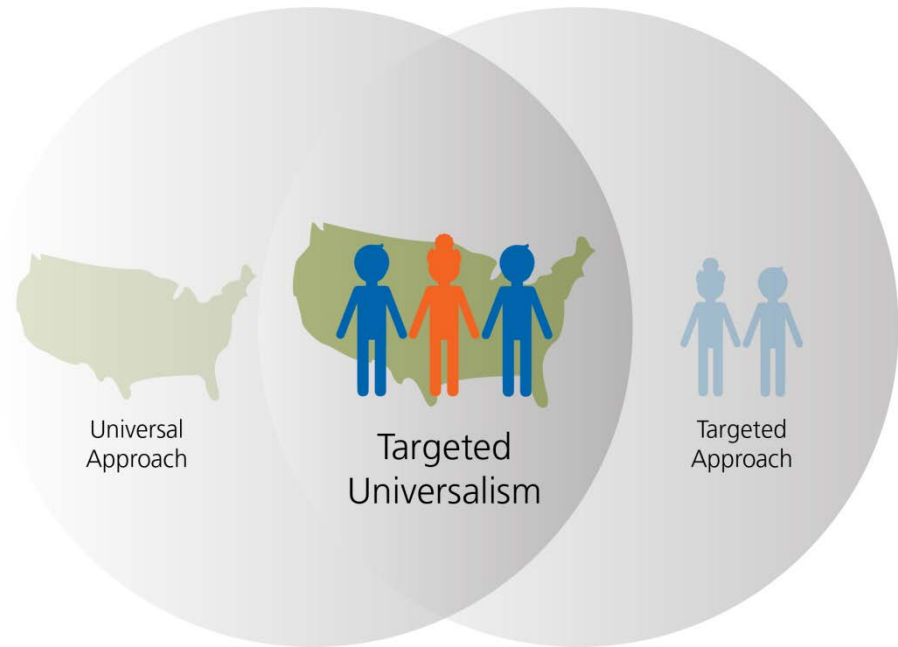
Based on income of census tracts where fatalities occur.



Thinking about equity: Targeted universalism

- Targeted universalism is an approach to social change developed by professor and critical race scholar John A. Powell
- Targeted universalism simultaneously aims for a universal goal while also addressing disparities in opportunities among different groups
- According to Powell, this approach “supports needs of the particular while reminding us we are all part of the same social fabric”
 - Universal, yet captures how people are differently situated
 - Inclusive, yet targets those who are most marginalized

“Targeted universalism recognizes that problems faced by particular segments of American society are not isolated circumstances, but problems that could spill over into the lives of everyone.”



Graphic from FSG/Collective Impact Forum

Applying targeted universalism to pedestrians

Treat people walking the same way we treat people driving

Principle 1

Vision

All people in Massachusetts have a **safe and comfortable** option to walk for short trips.

Goal 1

Eliminate

pedestrian fatalities and serious injuries.

Increase

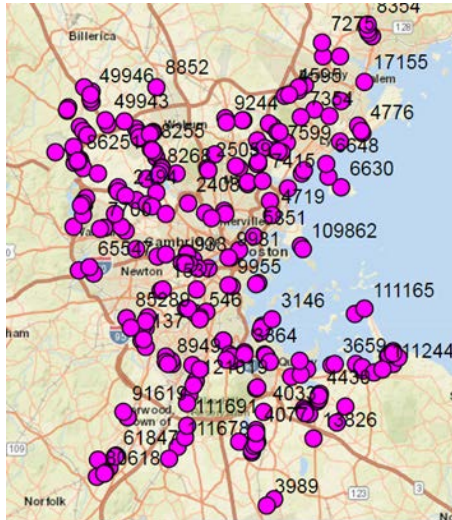
the percentage of short trips made by walking.

Goal 2

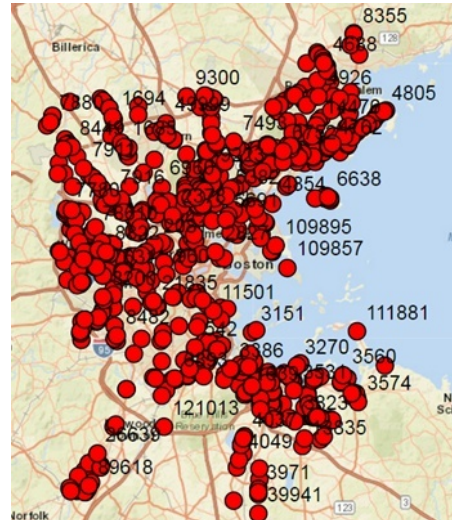


Re-Engineering Transit

Making bus stops safe & accessible



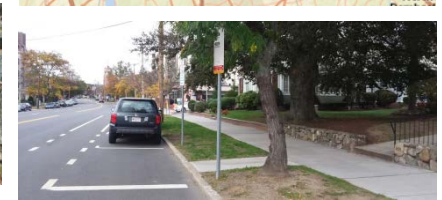
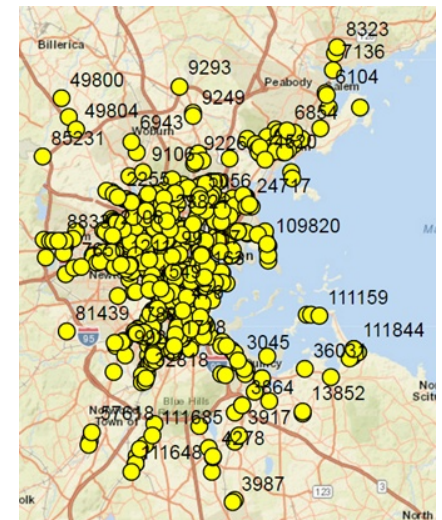
Critical (272)
Barriers so significant that boarding/exiting from street is required
*determined in field



High (844)
Multiple barriers noted within key elements



Medium (5891)
At least one significant barrier noted within key elements



Low (892)
Negligible barriers noted within key elements
Compliant (58)*
No barriers noted



MBTA bus service is unreliable

Municipality	No. of Routes	Weekdays Trips	Routes that Fail the Service Delivery Policy Standard (2017 Data)		
			Reliability	Comfort	Frequency
Boston	99	252,749	92% (91)	41% (41)	78% (77)
Cambridge	29	36,031	93% (27)	59% (17)	79% (23)
Somerville	16	15,618	94% (15)	63% (10)	63% (10)
Malden	20	12,501	100% (20)	40% (8)	80% (16)
Chelsea	5	11,854	100% (5)	60% (3)	80% (4)
Quincy	18	11,546	89% (16)	6% (1)	67% (12)



Improving MBTA bus service is an equity issue

MBTA Mode	Low Income Riders	Minority Riders
Bus	42%	48%
Rail Rapid Transit and Silver Line	26%	31%
Commuter Rail and Ferry	7%	15%

Source: 2015-2017 MBTA Systemwide Passenger Survey

<http://ctps.org/apps/mbtasurvey2018/#>



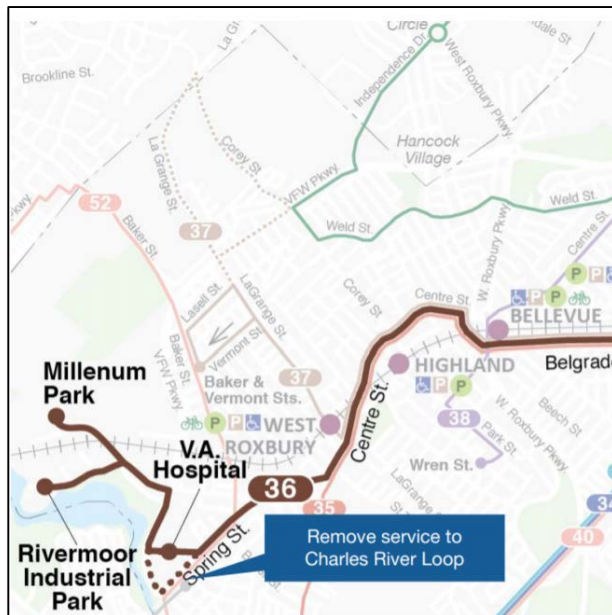


Re-engineering bus routes

**More Consistent Travel
Pattern: Route 36**

**Faster & More Reliable:
Routes 448 & 449**

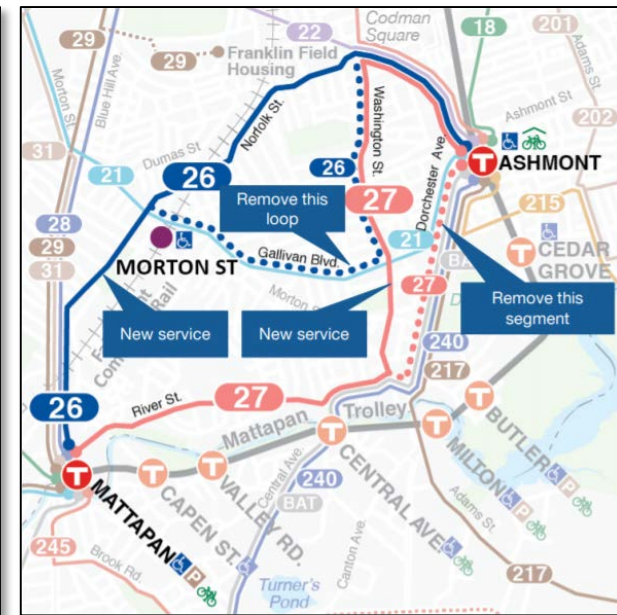
**Better Connections:
Routes 26 & 27**



- Provide a **more consistent travel pattern** by reducing the number of route variations
- **More frequent service** to VA Medical Center/Hospital



- **Faster, more reliable service** between Boston and the North Shore with all service starting/ending at Wonderland



- Improve **neighborhood connectivity** between Ashmont, Codman Square and Mattapan

All proposals available online on at: [mbta.com/betterbus](https://www.mbta.com/betterbus)

But what problem is being solved?

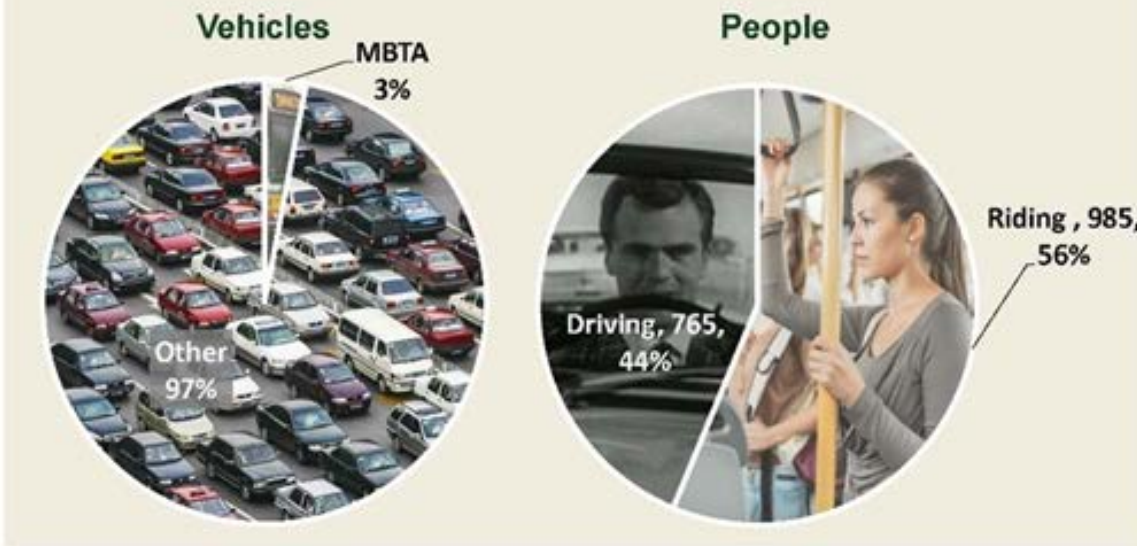


“Too many of our bus routes still fail to live up to our own standards. Through the Better Bus Project, we are changing that. Every day we’re finding new ways to improve the experiences of the people who use and ride our buses.”



Prioritizing people, not vehicles

Brattle St. to Coolidge Ave. (AM Peak)



Vehicle Volumes vs. People Volumes on Mount Auburn Street Between Brattle Street and Coolidge Avenue (Source: DCR Public Presentation, January 10, 2016, Slide 70)

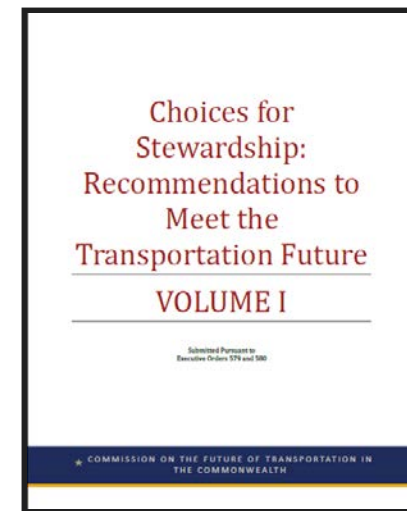
<http://www.mass.gov/eea/agencies/dcr/conservation/planning-and-resource-protection/projects/mount-auburn-street-corridor-study.html>



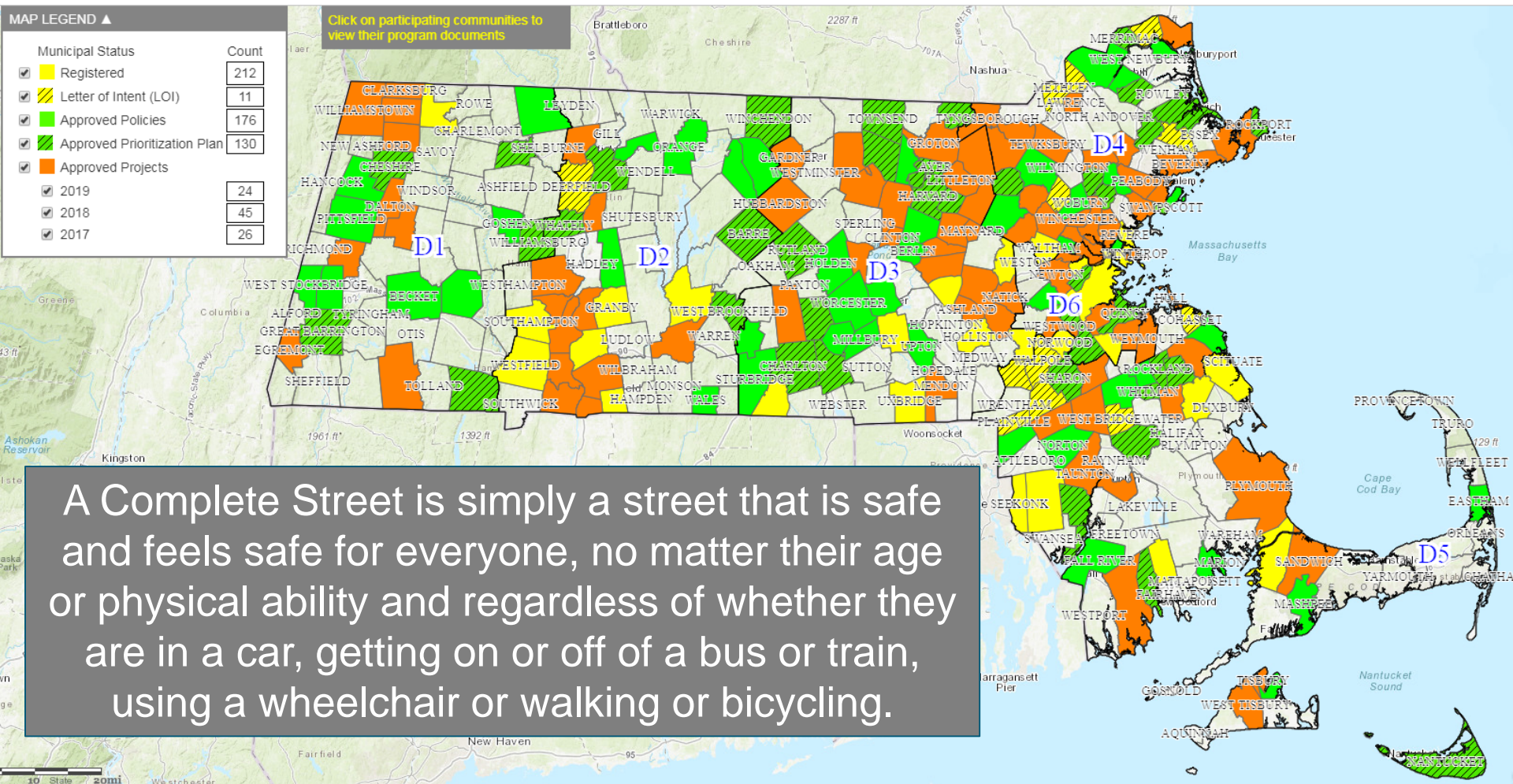
Re-Engineering Streets

Commission Recommendation: Transform roadways and travel corridors to move more people and support changing travel modes and technologies.

State and municipal roadway design and operation should prioritize person throughput, rather than vehicle throughput, so that limited corridor capacity is allocated to moving as many people as possible. Transportation agencies too often prioritize the movement of vehicles over the mobility of the people. Going forward, roadway owners must prioritize the movement of the maximum number of people, regardless of mode, in the design of transportation projects both for new facilities and the retrofitting of existing corridors in order to accommodate additional modes. In some cases, this will mean allocating travel lanes and/or curb space for transit and other multi-passenger vehicles. Transportation corridors are a limited resource, and the Commonwealth has a responsibility to ensure that they are well-maintained, used as fully and fairly as possible, and further the achievement of other goals such as reduced congestion, reduced greenhouse gas emissions, and shorter commutes.



Re-defining the “problem” of street design: Complete Streets



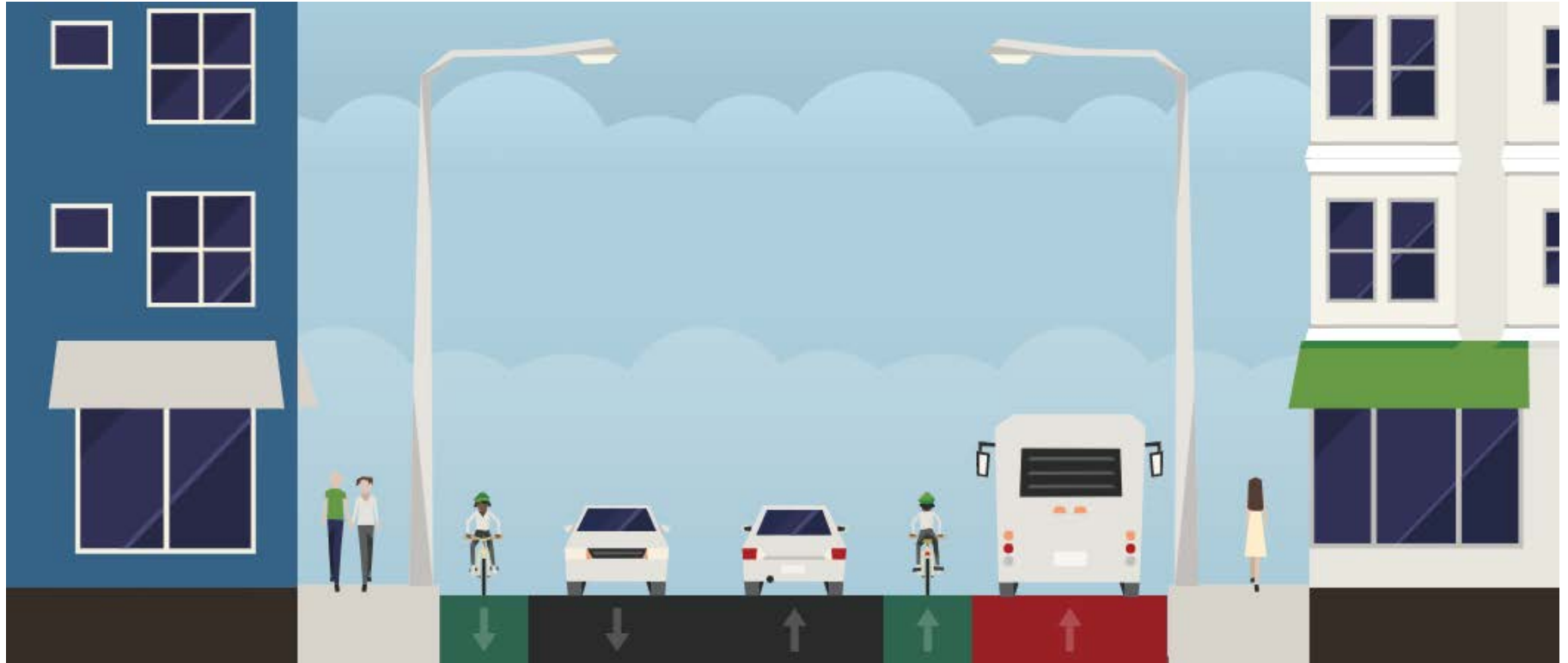
Street Design Evolution



Street Design Evolution



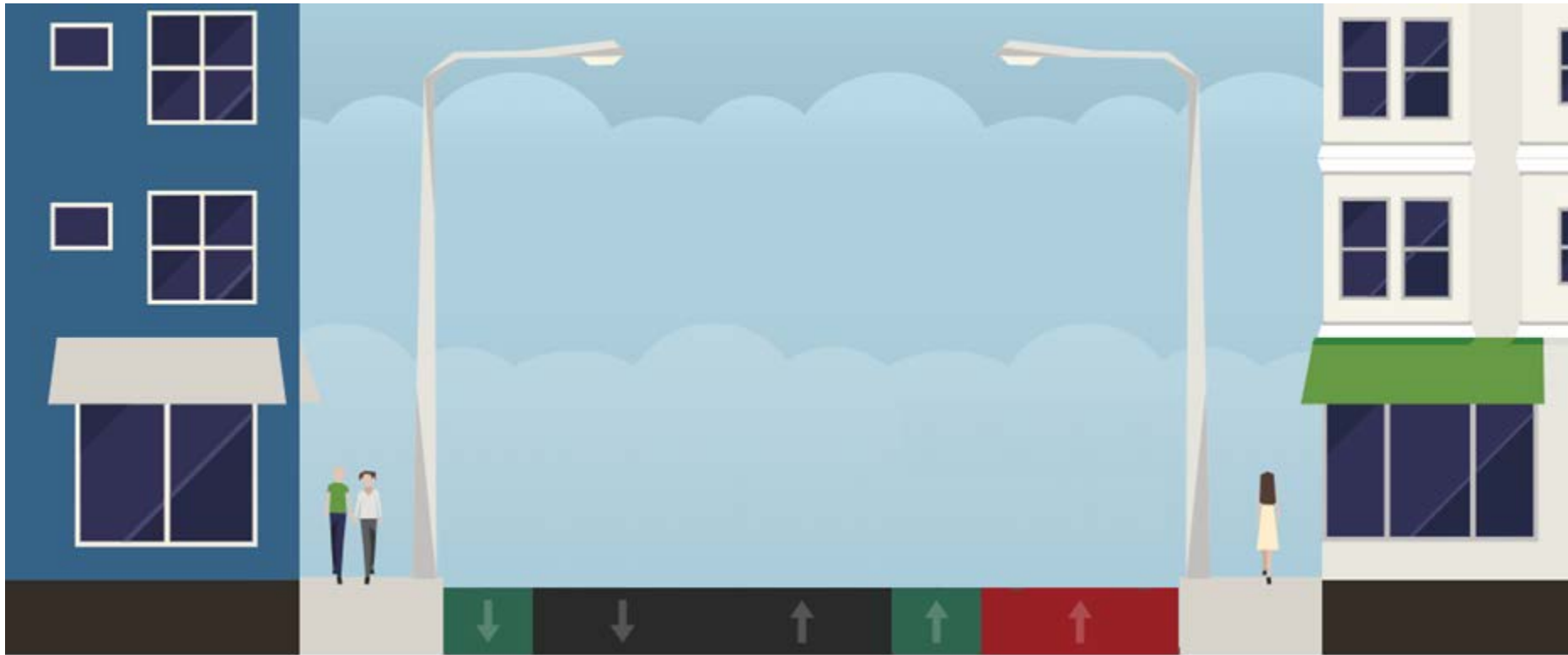
Street Design Evolution



Re-engineering streets for new vehicles and users



Street Evolution



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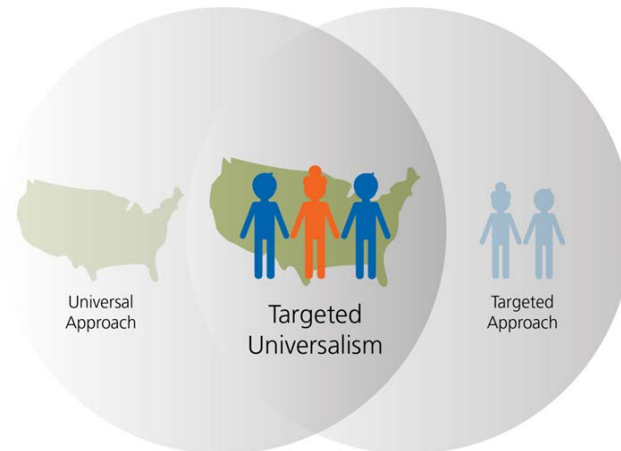
Conclusion: As engineers who care about equity we can . . .

- Remember that the task of transportation professionals is to improve access to opportunity, collaborating to help people get what they need to thrive
- Define the problems we are trying to solve carefully and correctly, with equity in mind
- Ensure that we optimize for equity as one of the factors that goes into engineering for transit, roads and bicycle/pedestrian facilities

MOBILITY
Collaborate to help people get where they need to go



ACCESSIBILITY
Collaborate to help people get what they need to thrive





Thank you for listening.
Questions?