

# BRT Standard 2016 Edition


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**ITDP**

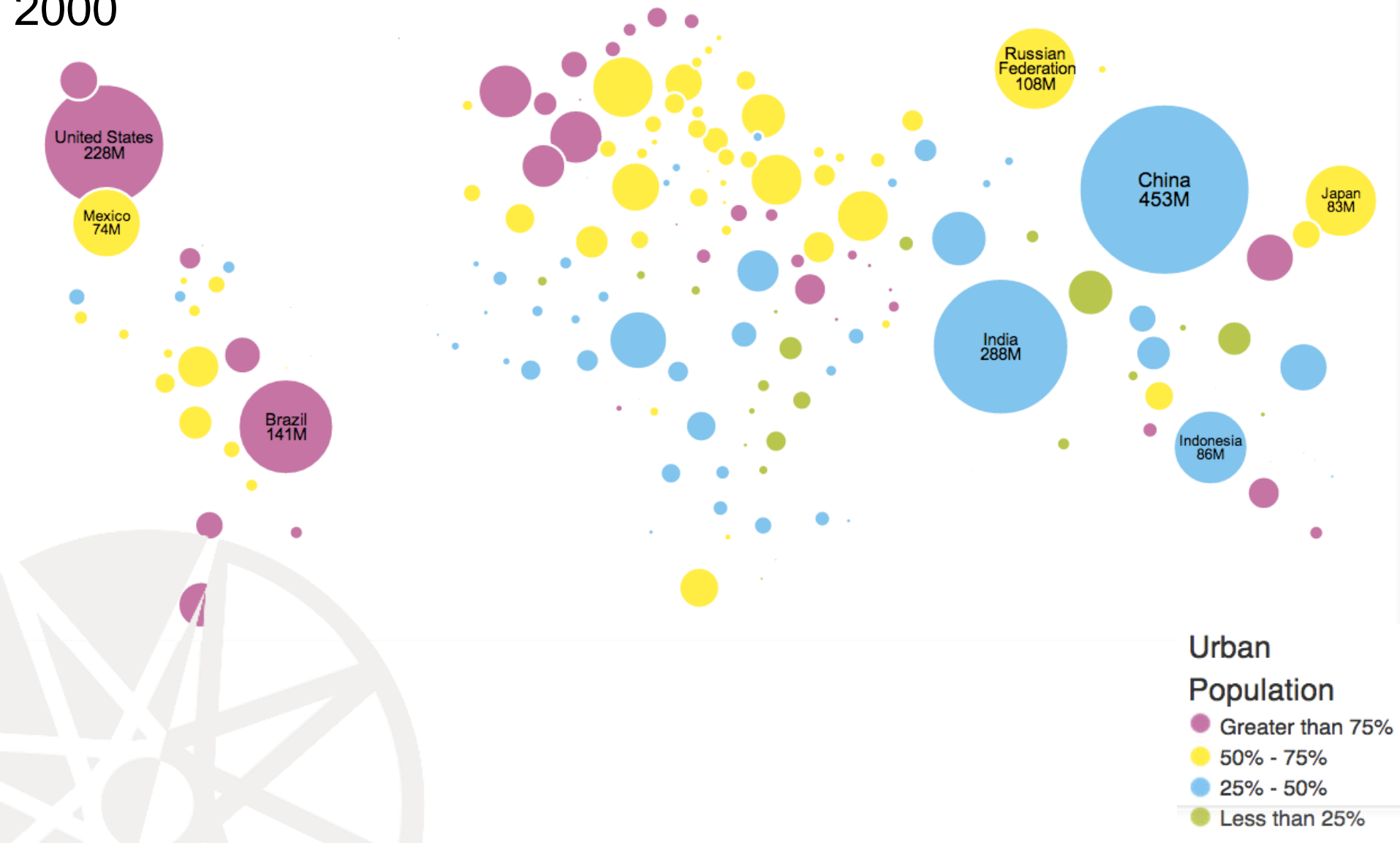
Institute for Transportation  
& Development Policy

# Overview

1. Context
  2. What is Bus Rapid Transit (BRT)?
  3. What is the BRT Standard?
  4. Why Was It Created?
  5. How to Use the Standard
  6. What's New in 2016
  7. Questions/Discussion
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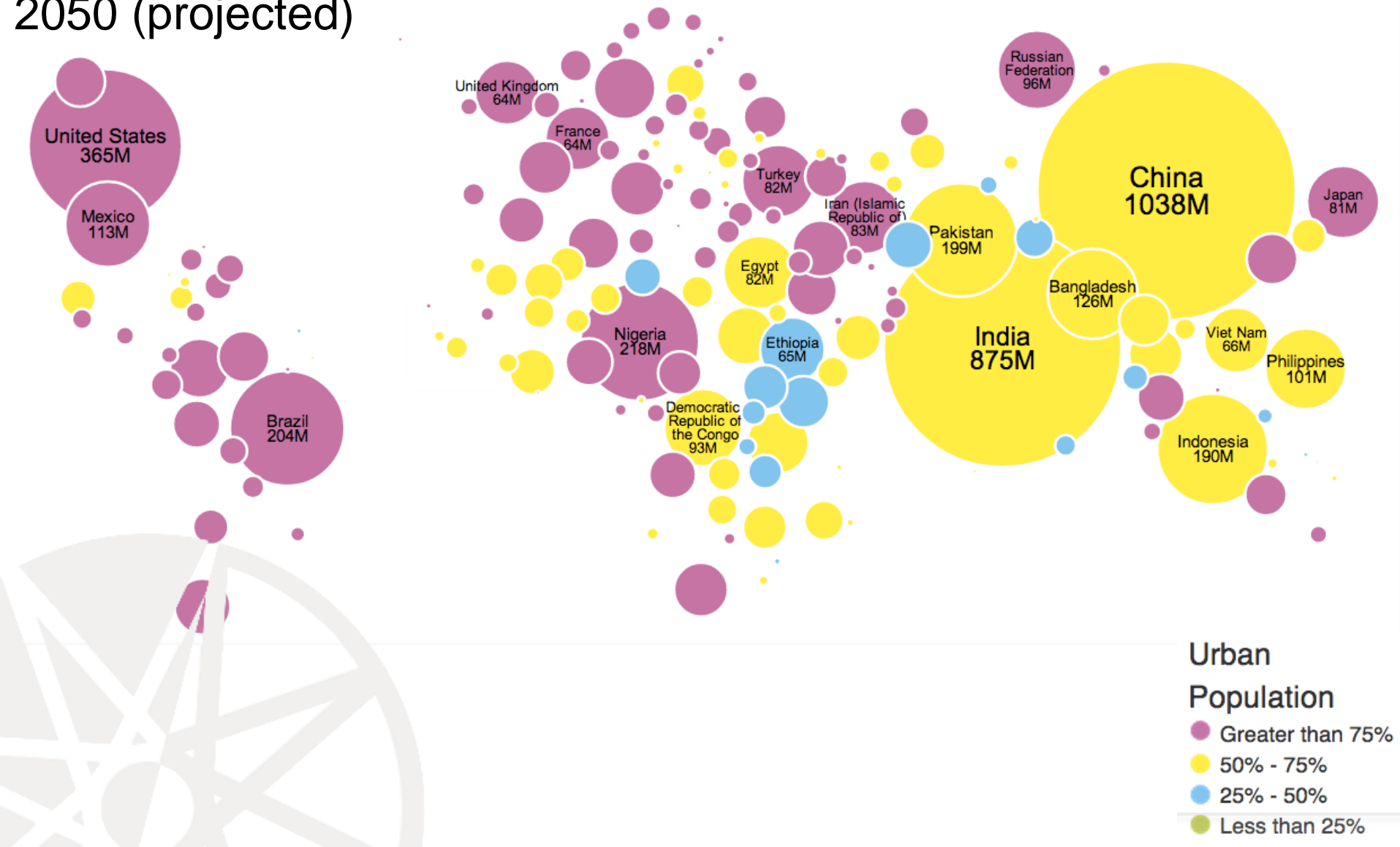
# 1) Context: Rapid Urbanization

2000

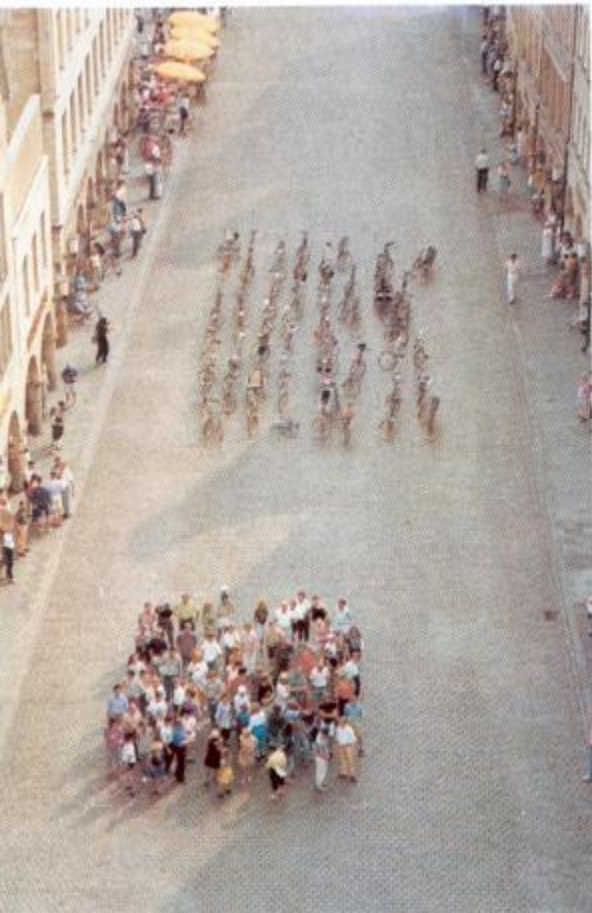


# 1) Context: Rapid Urbanization

2050 (projected)



# 1) Context





## *Unmanaged Roads are Inefficient*



# 1) Context



**How most traffic engineers see your city**

# 1) Context

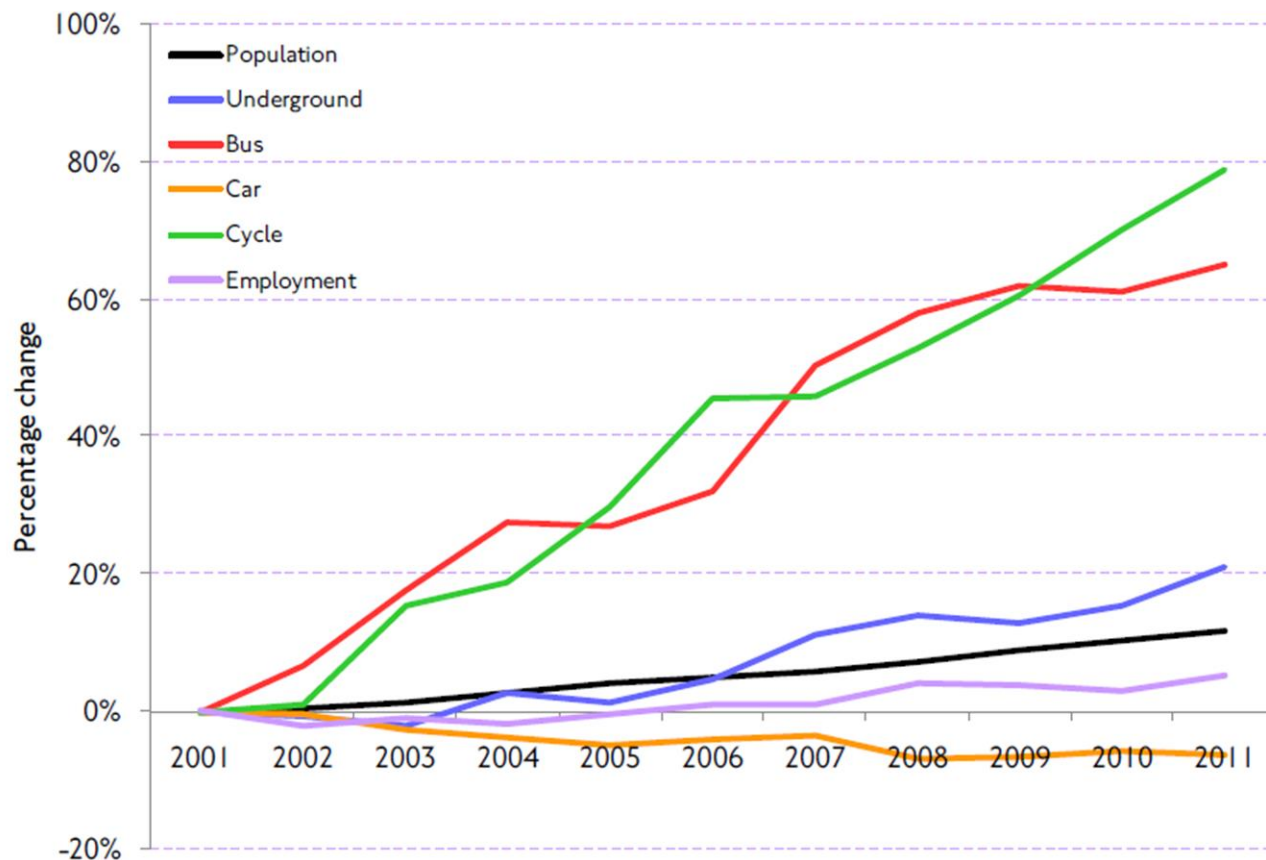


**How cities should be designed**



# GROWTH WITHOUT TRAFFIC (London 2001-2011)

Figure 3.12 Relationship of travel demand trends to population change.



Source: TfL Group Planning, Strategic Analysis.

*Can't we just build metro?*



## *Yes, but*

- Time consuming to plan & design
- Very expensive to build
- Expensive to maintain





## 2) What is Bus Rapid Transit (BRT)?



Priority at  
Intersections

Enclosed and  
secure stations

Dedicated  
bus lanes

Rapid, platform-  
level boarding

Pedestrian and  
cycle access

Off-board  
payment with  
smart cards

New, clean, high-  
capacity buses

Center  
Alignment



# BUS RAPID TRANSIT

=

HIGH-QUALITY  
HIGH-CAPACITY

HIGH-SPEED  
CUSTOMER-ORIENTED  
PUBLIC TRANSPORT

...not an old bus running in a bus-lane!

# Mexico City





# Pune / Pimpri-Chinchwad, India





# Belo Horizonte, Brazil





# Ahmedabad, India





# Yichang, China





### 3) What Is the BRT Standard?

- Defines BRT
- Recognizes Best Practice
- Common standard allows quick comparison across corridors around the world



Silver: 70–84 points



Gold: 85 points or above



Bronze: 50–69 points



### 3) What Is the BRT Standard?

#### METHODOLOGY

- Good data is rare and expensive
- Assess Design & Operations NOT performance
- Created via General Agreement Among Experts





### 3) What Is the BRT Standard?

## **Minimum Requirements for a Corridor to Be Considered BRT**

- 1. At least 3 kilometers (1.9 miles) in length with dedicated lanes**
- 2. Score 4 or more points in dedicated right-of-way element**
- 3. Score 4 or more points in busway alignment element**
- 4. Score 20 or more total points across all five BRT basics elements**

### 3) What Is the BRT Standard?

<b>1 BRT Basics</b>			<b>38</b>
	<b>A</b>	Dedicated right-of-way	8
	<b>B</b>	Busway alignment	8
	<b>C</b>	Off-board fare collection	8
	<b>D</b>	Intersection treatments	7
	<b>E</b>	Platform-level boarding	7

### 3) What Is the BRT Standard?

1	BRT Basics	38
2	Service planning	19
3	Infrastructure	13
4	Stations	10
5	Communications	5
6	Access and Integration	15
	<b>DESIGN SCORE</b>	<b>100</b>
7	Operations deductions	- 63
	<b>TOTAL SCORE (DESIGN SCORE - OPERATIONS DEDUCTIONS)</b>	<b>0-100</b>

## 4) Why Was BRT Standard Created?

- Wide variety what was called BRT - no common definition
- BRT Standard helps ensure that BRT corridors more uniformly deliver:
  - world-class passenger experiences,
  - significant economic benefits, and
  - positive environmental impacts
- Support & reward difficult political decisions supporting transit










## 5) How to use the BRT Standard

- Planning & Design (Checklist of elements)
- Advocacy
- Assessment



## 5) How to use the BRT Standard

- Full Score = Design Score (100 points) - Operations deductions (63 points)
  - Official Scoring by BRT Standard Technical Committee
  - Corridors rescored only after significant changes to design or operations
  - Corridors NOT rescored due to changes to the Standard
- 

## 6) What's New in 2016



2012



2013



2014



2016



## 6) What's New in 2016

### FOCUS ON SAFETY

- New Pedestrian Access and Safety requirements:
  - safe and frequent pedestrian crossings in built-up areas
  - Reasonable ped wait times at signals
  - Safety-minded speed limits in dense areas (<30kph)
- New operations deductions:
  - excessive pedestrian wait times
  - poor maintenance of ped and bicycle facilities



## 6) What's New in 2016

### INCREASED FOCUS ON OPERATIONS

- Operational issues have degraded service, even on BRT corridors with excellent design
- New operations deduction elements:
  - bus bunching
  - permitting unsafe bicycle use
  - lack of traffic safety data, and
  - buses running parallel to the BRT corridor













## 6) What's New in 2016

### ALLOW SEPARATE DESIGN SCORE

- Full Score = Design Score - Operations Deductions
- Score corridors as soon as they open
- Better distinguish between design potential and operations



## 6) What's New in 2016

### IMPROVED DEDICATED RIGHT-OF-WAY DEFINITION

- Simpler and more effective
- More emphasis on physical separation, reduces the need for enforcement

Type of Dedicated Right-of-Way	POINTS
Dedicated lanes and full enforcement or physical segregation applied to over 90% of the busway corridor length	8
Dedicated lanes and full enforcement or physical segregation applied to over 75% of the busway corridor length	7
Delineators only or colorized pavement only without other enforcement measures applied to over 75% of the busway corridor length	5
Delineators only or colorized pavement only without other enforcement measures applied to over 40% of the busway corridor length	3
Delineators only or colorized pavement only without other enforcement measures applied to over 20% of the busway corridor length	2
Camera-enforcement with signs only	1

2014



## 6) What's New in 2016

### IMPROVED DEDICATED RIGHT-OF-WAY DEFINITION

- Simpler and more effective
- More emphasis on physical separation, reduces the need for enforcement

2016

Type of Dedicated Right-of-Way	POINTS	WEIGHTED BY
Physically separated, dedicated lanes	8	% of corridor with type of dedicated right-of-way
Color-differentiated, dedicated lanes with no physical separation	6	
Dedicated lanes separated by a painted line	4	
No dedicated lanes	0	

## 6) What's New in 2016

### NEW BUSWAY ALIGNMENTS

- Increasingly common alignments now included
- Better visual explanation of other common alignments



## 6) What's New in 2016



- Boulevard-Style alignment - Inner roadway
- 4/8 points
- Can meet BRT Basics



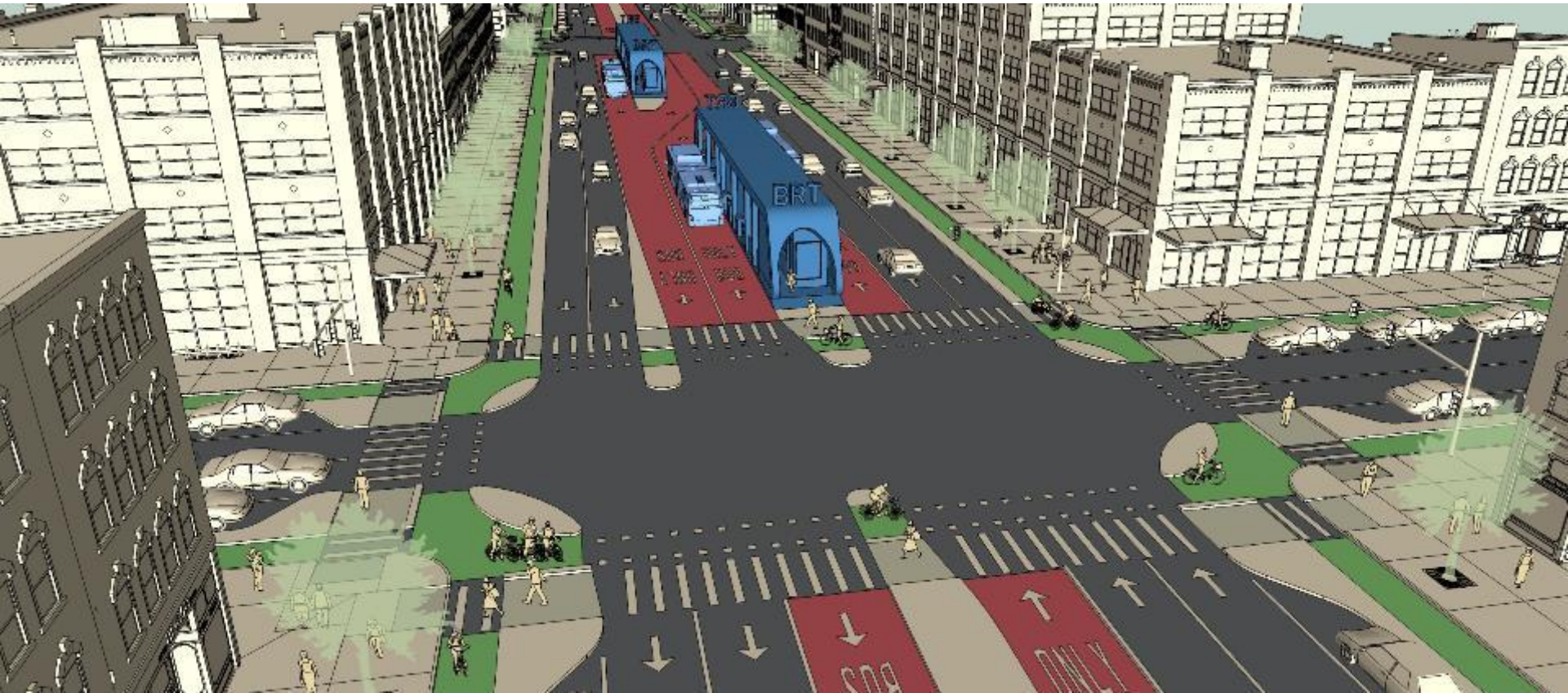
## 6) What's New in 2016



- Boulevard-Style alignment - Outer roadway
- 4/8 points if physically separated
- Can meet BRT Basics



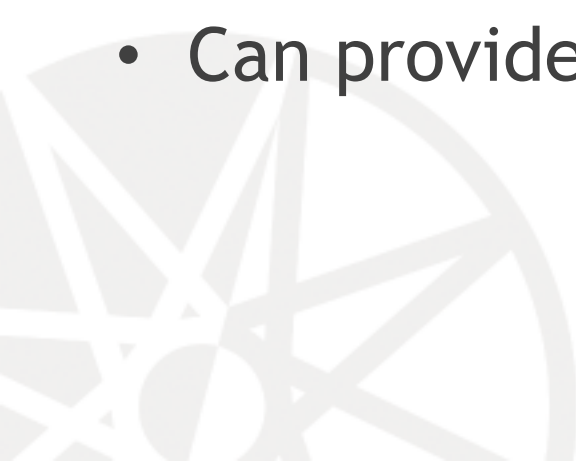
## 6) What's New in 2016



- Median alignment with staggered stations
- Allows passing lanes in reduced ROW
- 8/8 points

## 6) What's New in 2016

### ONBOARD FARE VALIDATION

- New points for onboard fare validation of tickets purchased off-board when combined with all-door boarding
  - Common in Europe and growing in lower-demand corridors in North America
  - Can provide significant time savings
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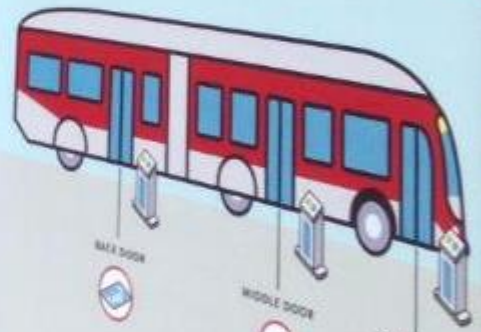




Metro Rapid

720 METRO RAPID

TAP and board  
at any door.



Metro is testing All-Door Boarding  
on Wilshire Rapid Line 720.  
Monday-Friday, May 18-July 10, 2015



## 7) Questions / Discussion



# Thank you!



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