Protected Bikeway Design:

An ITE Practitioners Guide & Lecture Series

Institute of Transportation Engineers
Complete Streets Council

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May 23, 2017

Outline

1 Background + Objectives

2 Content

3 Approach

4 Lectures

Route 9A, New York City
Source: Stantec

1 Background + Objectives

- Most recent guidance for bicycle infrastructure includes substantially more information about protected bike lanes due to the strength of their demonstrated outcomes.
- With the additional guidance and approvals from authorizing agencies, growth in protected bike lane miles/kilometres has been significant.
- However, questions about the specific design and operational details that many of the guides do not address requires additional design guidance and research before these designs are widely adopted.

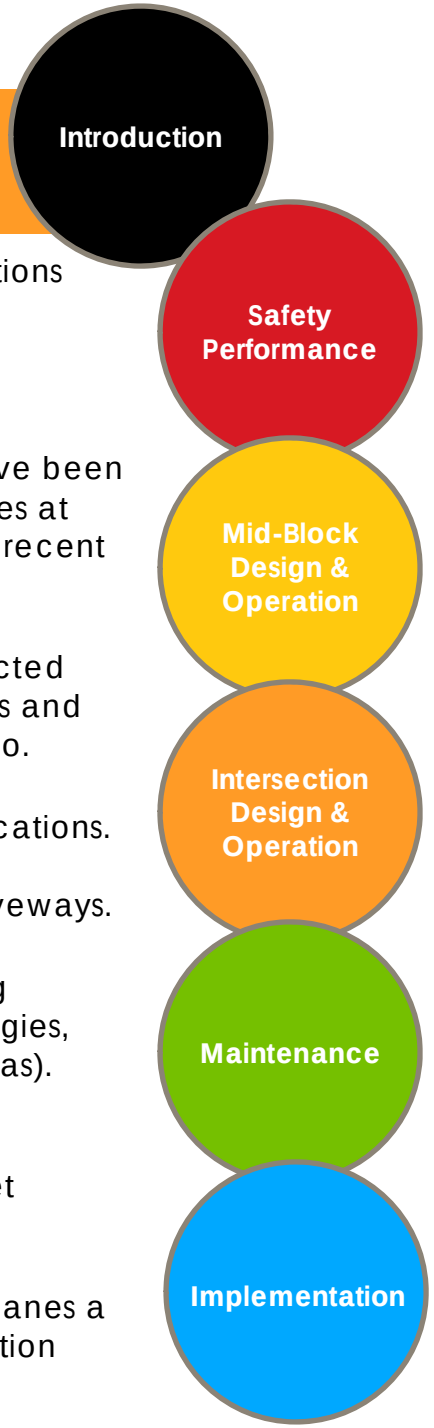
Sample of Available Design Guides
Source: Tyler Golly

The **ITE Protected Bike Lane Practitioners Guide & Lecture Series** will address these gaps related to 5 priority areas.

Protected Bike Lane Priority Areas

- Safety Performance
- Mid-Block Design & Operation
- Intersection Design & Operation
- Maintenance
- Implementation

2 Content



The ITE Protected Bike Lanes Practitioners Guide & Lecture Series will include 6 lectures/sections with an introduction and one section for each of the 5 priority areas. While much of the application of protected bike lanes has been in urban areas, we will include guidance for suburban contexts as well.

Introduction will include a summary of what protected bike lanes are, outcomes that have been achieved, and sources of guidance that exist and are emerging. The focus will be on guides at federal, state/provincial, and local levels within North America and note design issues that recent guides are working to address.

Safety Performance will focus on addressing the observed safety performance of protected bike lanes and associated intersection control approaches. This will include dispelling myths and highlighting critical aspects of design and operations to support safe systems and vision zero.

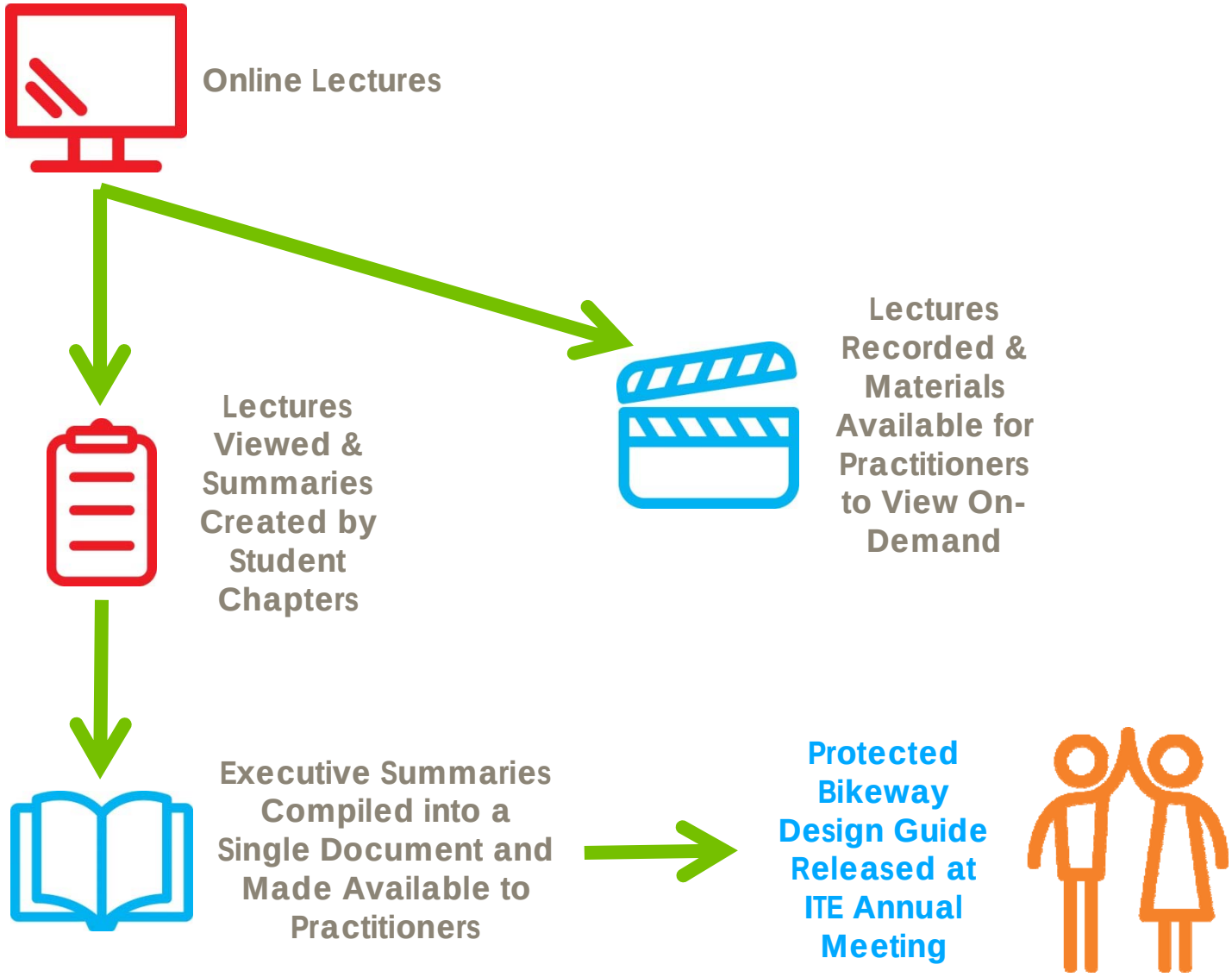
Mid-Block Design & Operation will focus on the design and operation at mid-block locations. Topics will include barrier types and their impact on safety and operations, transit-bicycle accommodations, parking/loading-bicycle accommodations, landscaping/trees, and driveways.

Intersection Design & Operation will likely be the largest section with content including intersection controls and signals, protected intersections, geometry, conflict marking strategies, sight lines, signal detection, minor and major intersections (e.g., suburban or residential areas).

Maintenance will include maintenance strategies and design considerations to support operation and use in winter, acknowledgement of local conditions and laws/policies, street sweeping, and asset management.

Implementation will provide examples of rapid implementation, making protected bike lanes a reality within the regulatory frameworks of the US and Canada (MUTCD/MUTCD-C), education initiatives, and data collection and performance reporting.

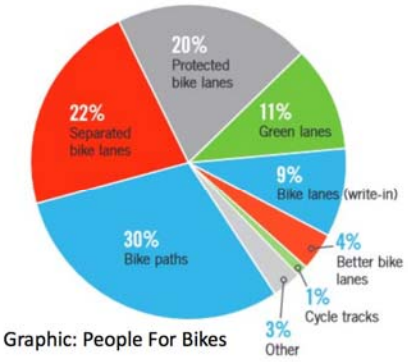
3 Approach


Online Lectures
Lectures Viewed & Summaries Created by Student Chapters
Lectures Recorded & Materials Available for Practitioners to View On-Demand
Executive Summaries Compiled into a Single Document and Made Available to Practitioners
Protected Bikeway Design Guide Released at ITE Annual Meeting

4 The Lectures - INTRODUCTION

What is this thing?

- Protected Bike Lane
- Cycle Track
- Separated Bike Lane
- Bike Path
- Bike Lane



Graphic: People For Bikes

http://www.peopleforbikes.org/blog/entry/selling-biking-better-language-for-better-bike-lanes

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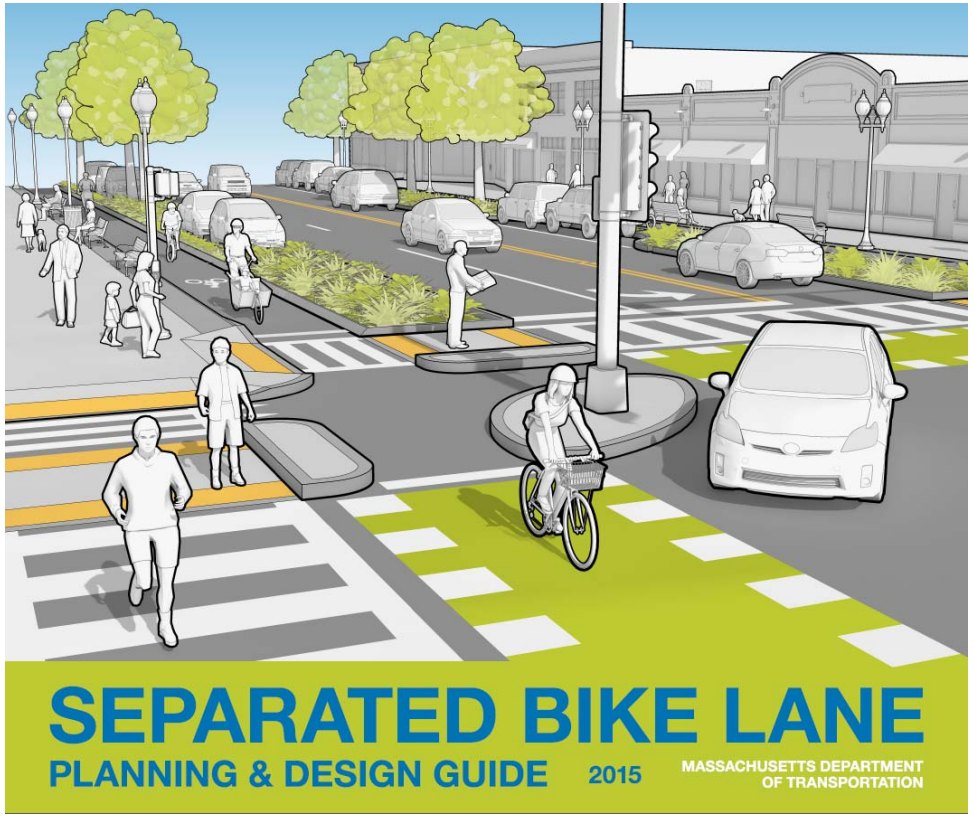
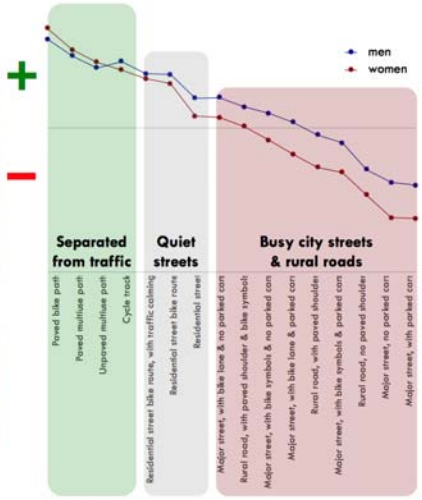
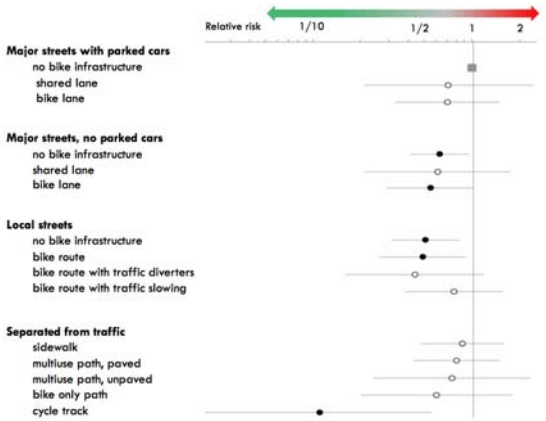
Where Transportation and Education Intersect



4 The Lectures - SAFETY

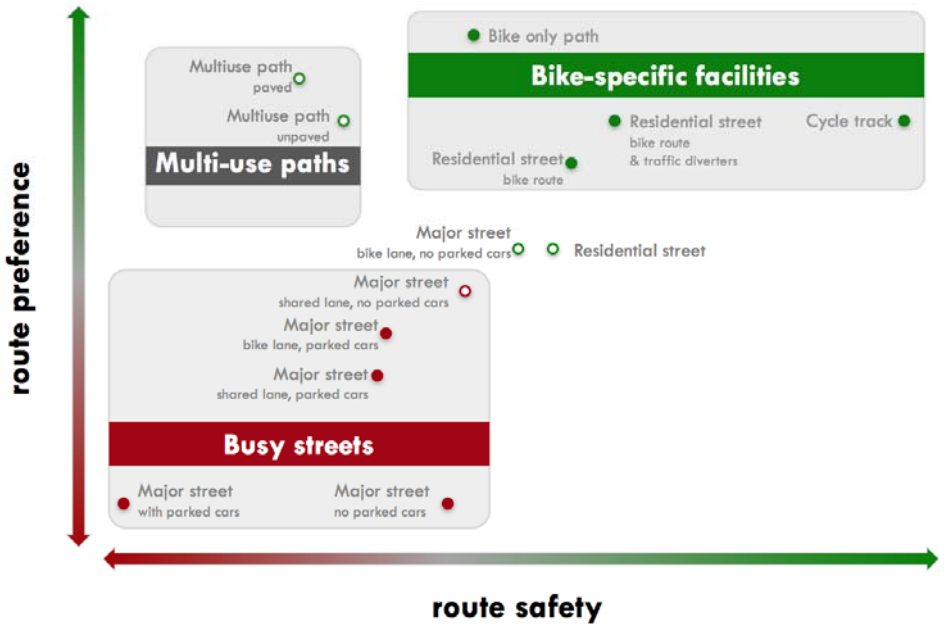


Injury risk ... route type matters



Route types matter for both preferences & safety

Do they agree? (solid dots = yes)



4 The Lectures – MID-BLOCK

Parking

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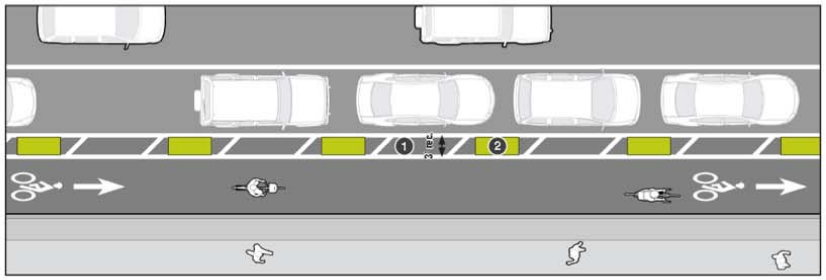
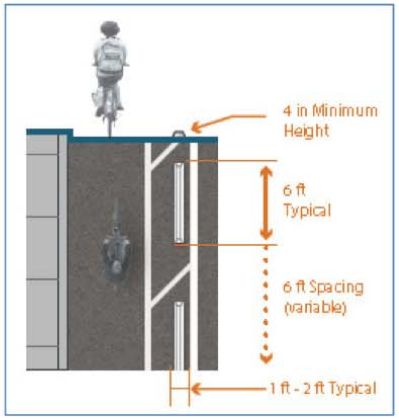
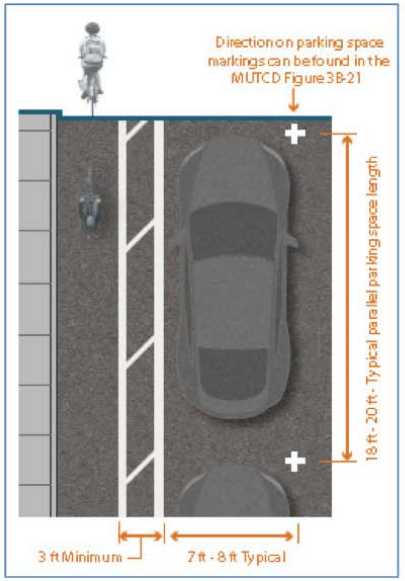


MassDOT Separated Bike Lane Planning & Design Guide: Exhibit 5A





FHWA Separated Bike Lane Planning and Design Guide

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Where Transportation and Education Intersect

4 The Lectures - INTERSECTIONS

Green Surface Treatment

Vancouver approach: Use to mark conflict zones

On bike facility crossings where the bicycle facility sometimes has the right of way.		✓
On bike facility crossings where there are turn conflicts or poor compliance of regulations		✓
Major driveway crossings		✓
High volume shared lanes to highlight conflicts & transition points (greenback sharrows)		✓
Bike turn boxes which motor vehicles can physically stop on		✓

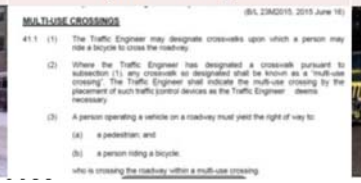
Comox & Burrard Intersection

4 The Lectures – MAINTENANCE AND OPERATION

Plow and rock salt

Sweeper and brine

4 The Lectures - IMPLEMENTATION

Signage	Road marking	Concrete Construction
		
Signal Construction	**Signal Timings**	**Barriers**
		
Maintenance	**Bylaw Changes**	**Detours**
		

Providing information

Over

84,000

Tips Guides distributed

Weekday bicycle trips at the three middle count locations:

The percentage of women riding on the corridors increased.

SEPTEMBER 2014 — **22%**

SEPTEMBER 2016 — **30%**

The percentage of children riding on the corridors increased.

SEPTEMBER 2014 — **0.1%**

SEPTEMBER 2016 — **1.3%**

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