

Designing Streets for Cyclists



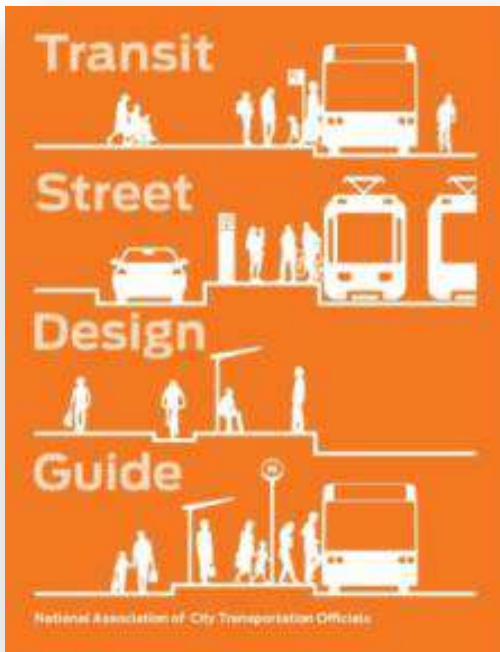
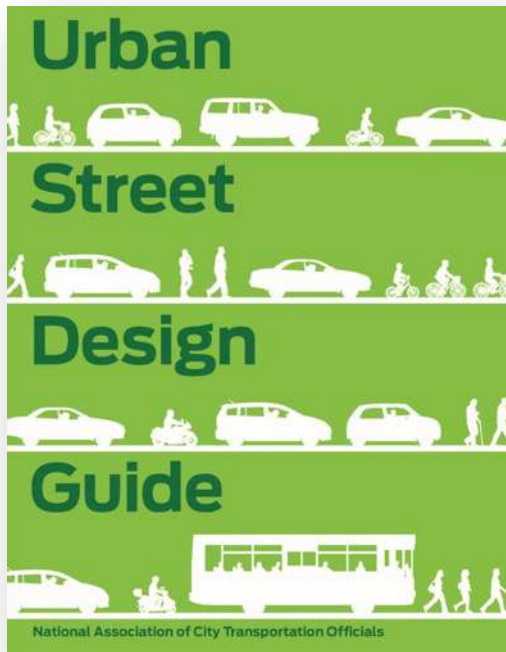
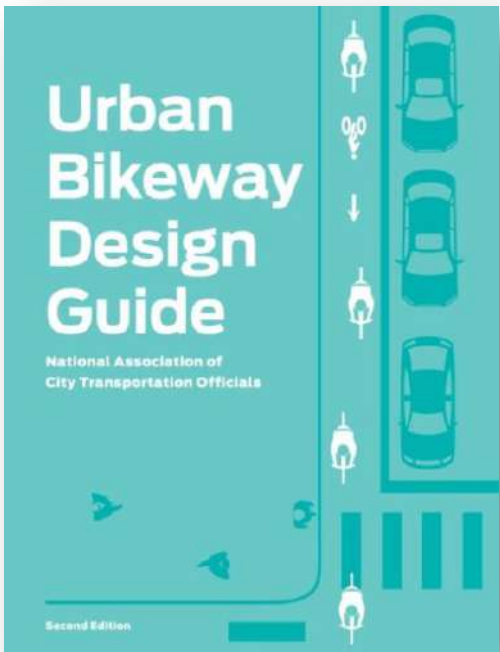
Taller CFF | Bogotá | 05.08.2019

Fabrizio Prati
fabrizio@nacto.org

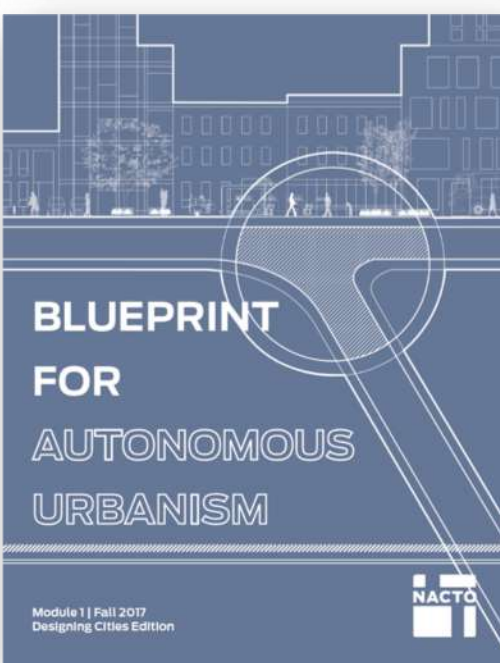
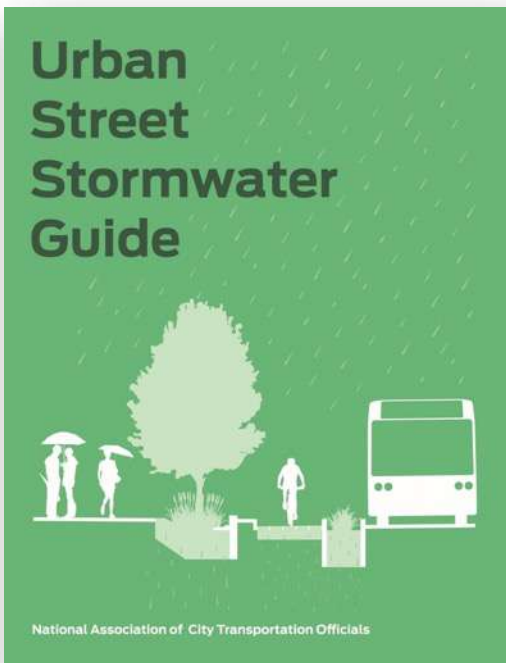
@GlobalStreet
www.globaldesigncities.org

NACTO National Association of City
Transportation Officials
GDCI Global Design Cities Initiative





National Association of City Transportation Officials



Guías de Diseño

Una autorización a innovar!



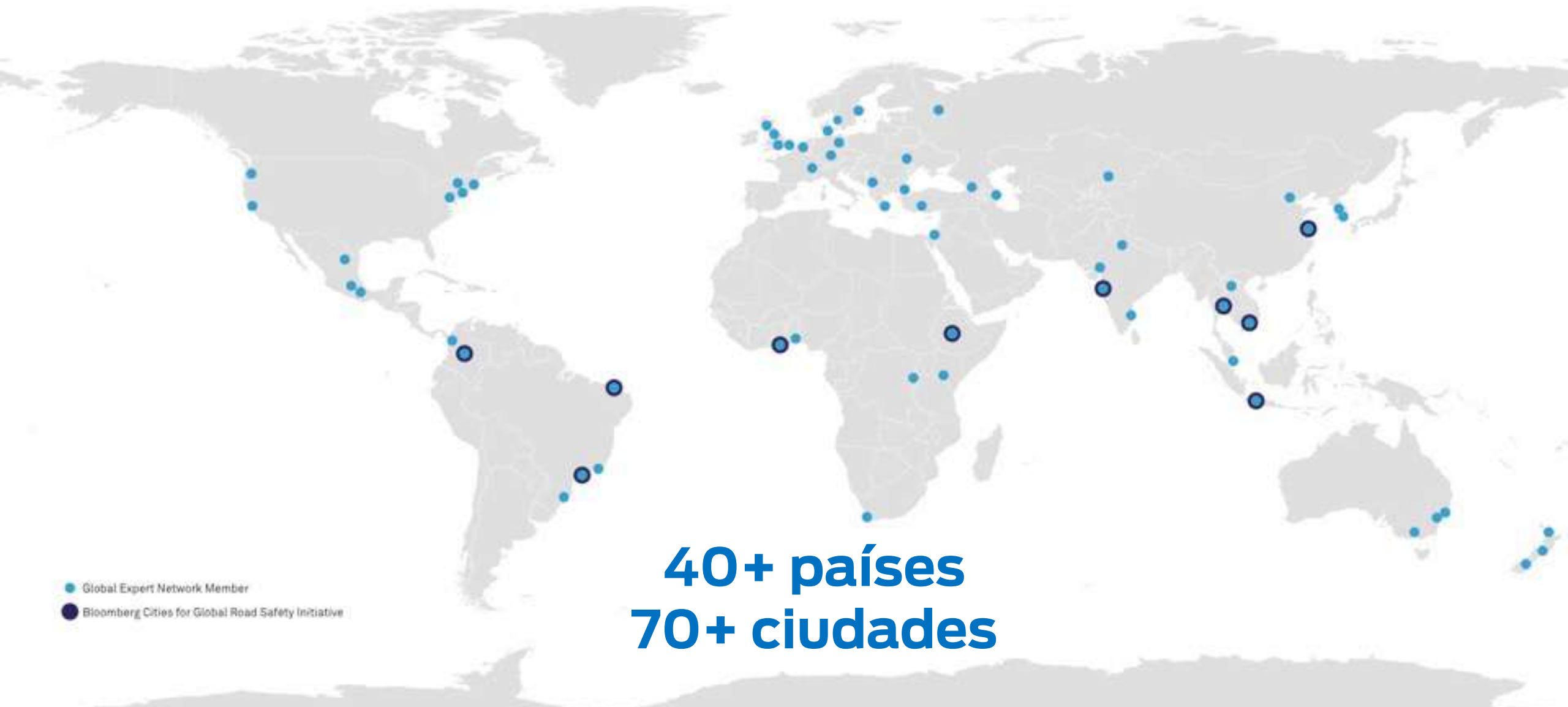
Janette Sadik-Khan

En 2014



**Iniciativa
Global de
Diseño de
Ciudades**

Una Red Global de Expertos



40+ países
70+ ciudades

-  Global Expert Network Member
-  Bloomberg Cities for Global Road Safety Initiative

Buenas Practicas Internacionales



47 casos de estudio en 25 países y 6 continentes

Ejemplos reales



Ejemplos reales



Refrendada por: 49+ gobiernos and 45+ organizaciones



São Paulo Brasil



Bogotá Colombia



Addis Ababa Ethiopia



Fortaleza Brazil



Mumbai India



Global
Designing
Cities
Initiative



Bloomberg
Philanthropies

INITIATIVE FOR GLOBAL ROAD SAFETY

Desarrollo de políticas y guías de diseños

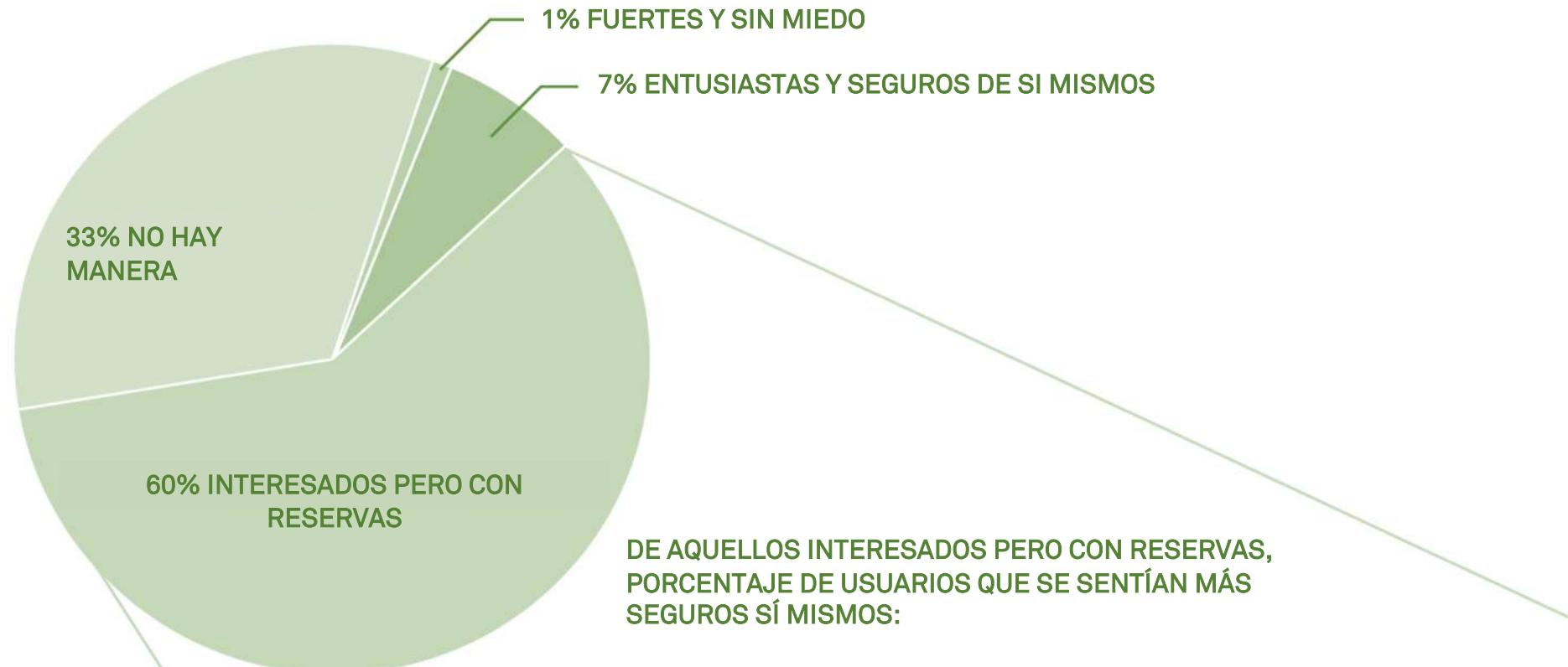
Capacitación y trabajo con la comunidad

Implementación de proyectos en vía

Recolección de datos y evaluación

¿Cómo diseñar calles amigables para ciclistas?

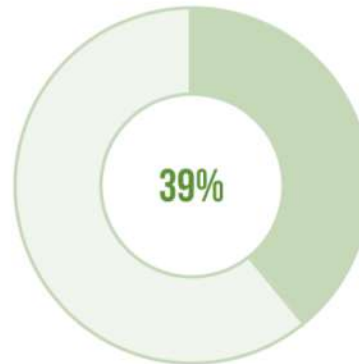
TIPOS DE CICLISTAS EN PORTLAND



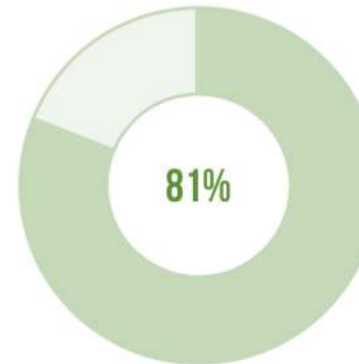
DE AQUELLOS INTERESADOS PERO CON RESERVAS, PORCENTAJE DE USUARIOS QUE SE SENTÍAN MÁS SEGUROS SÍ MISMOS:



8% SIN INFRAESTRUCTURA CICLISTA

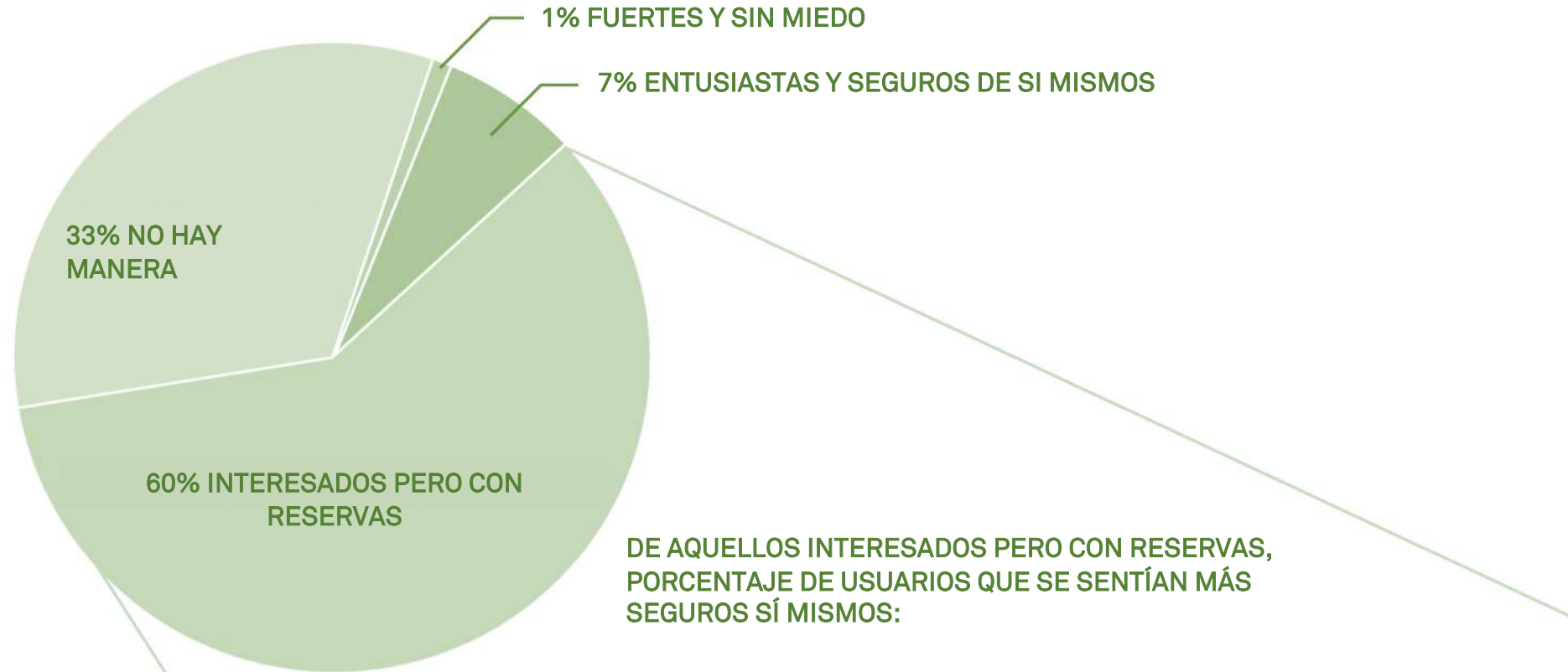


CON CARRIL CICLISTA



CON CARRIL CICLISTA PROTEGIDO

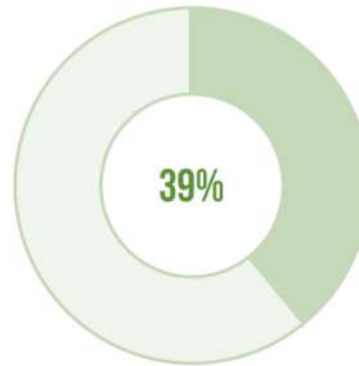
TIPOS DE CICLISTAS EN PORTLAND



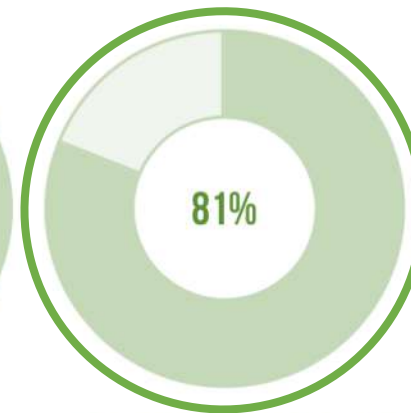
DE AQUELLOS INTERESADOS PERO CON RESERVAS, PORCENTAJE DE USUARIOS QUE SE SENTÍAN MÁS SEGUROS SÍ MISMOS:



8% SIN INFRAESTRUCTURA CICLISTA



CON CARRIL CICLISTA



CON CARRIL CICLISTA PROTEGIDO

81%

Ciclistas

Tipos: Velocidad, Variaciones y Dimensiones

Niños y
Familias

Ciclismo como
necesidad

Ciclismo de
placer



Interesado pero con reserva

Interested but concerned

Seguro de si mismo

Confident

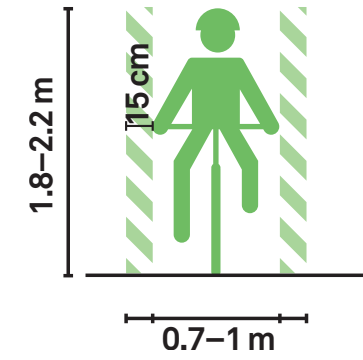
Sin miedo

Fearless

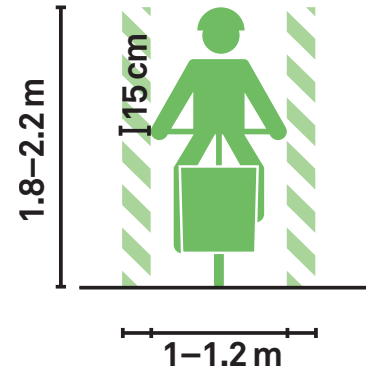
Ciclistas

Tipos: Velocidad, Variaciones y Dimensiones

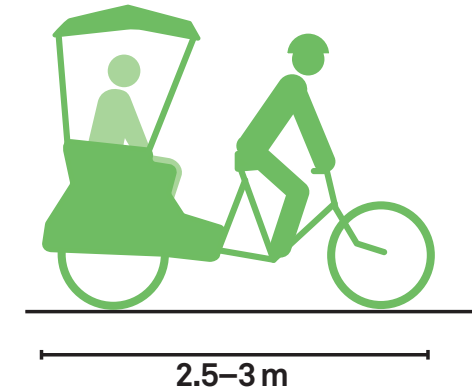
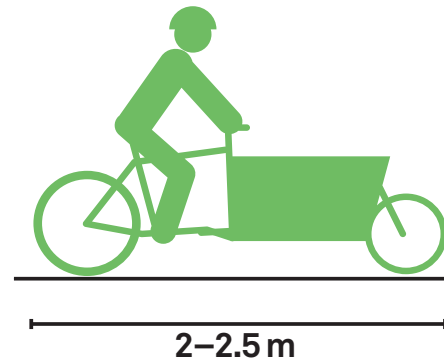
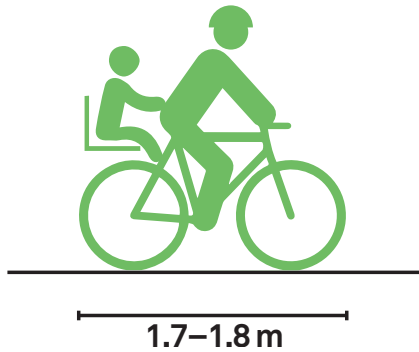
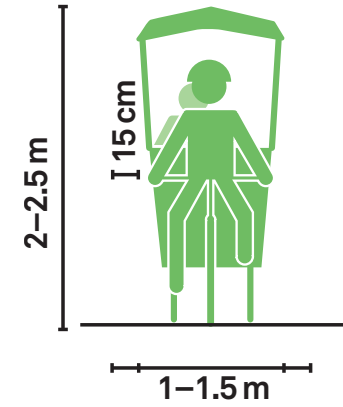
Bicicleta



Bicicleta de Carga



Triciclo / Rickshaw



Ciclistas

Tipos: Velocidad, Variaciones y Dimensiones



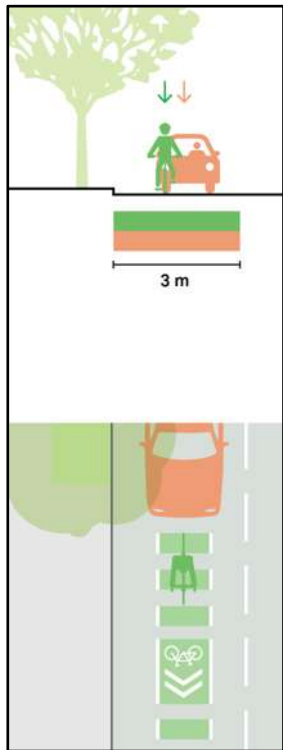
Ciclistas

Tipos: Velocidad, Variaciones y Dimensiones

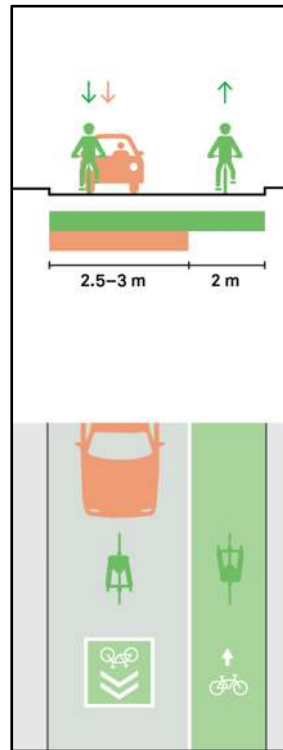


Infraestructura Ciclista

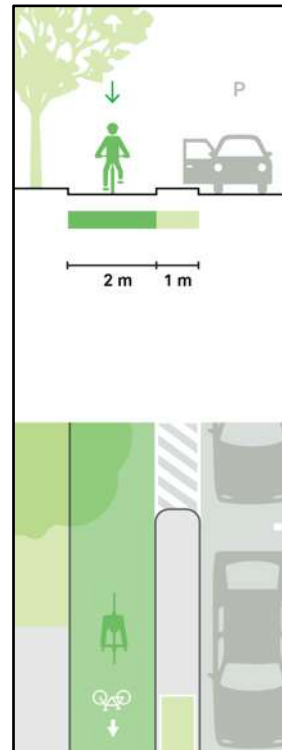
Geometría



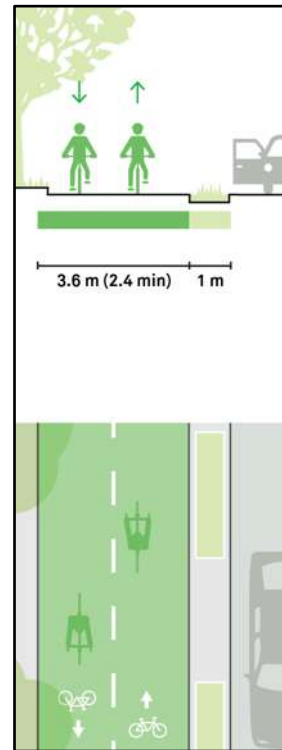
Ciclo-calle



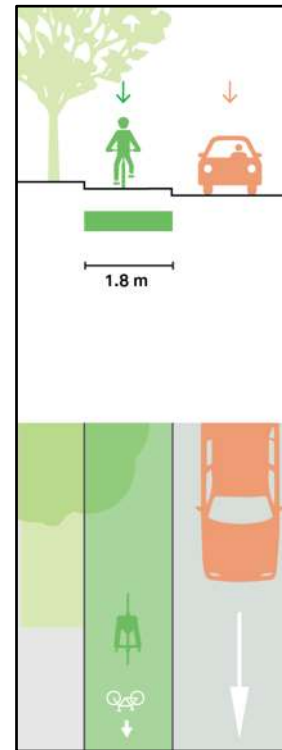
Ciclo-calle con Contraflujo



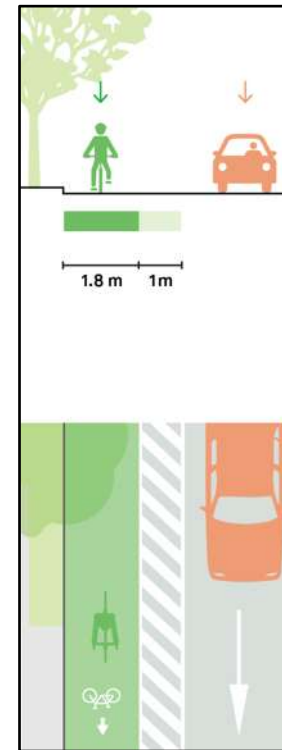
Ciclo-ruta Protegida



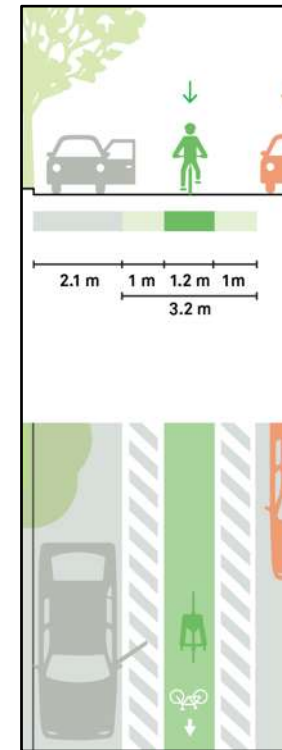
Ciclo-ruta Protegida Bidireccional



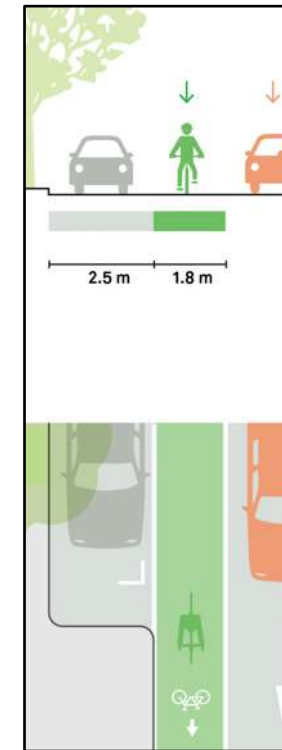
Ciclo-ruta Elevada



Ciclo-carril con separador adosada a la acera



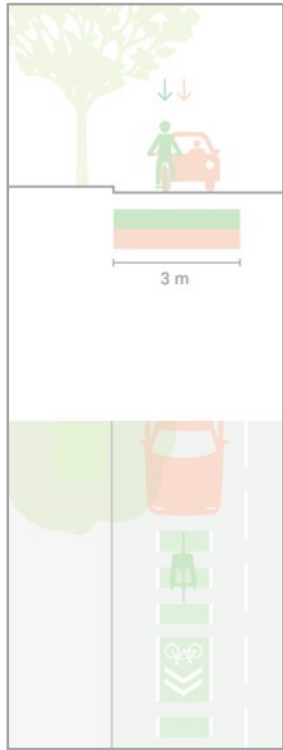
Ciclo-carril con separador



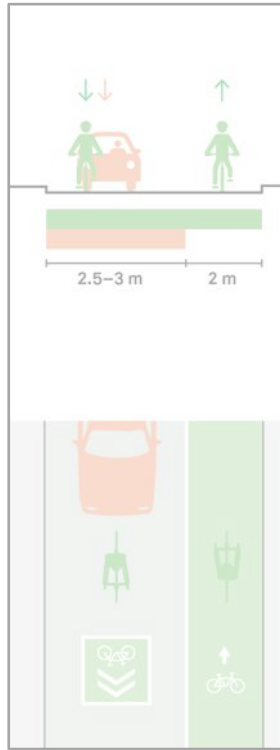
Ciclo-carril convencional

Infraestructura Ciclista

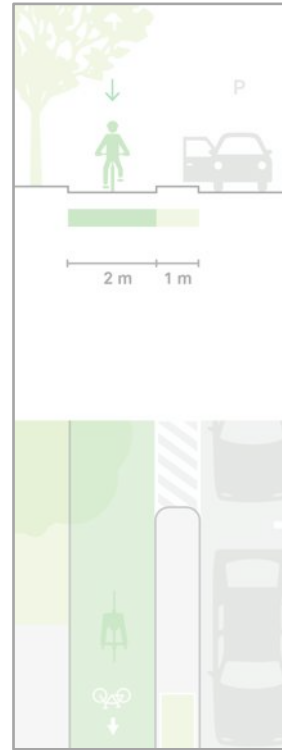
Geometría



Ciclo-calle



Calle Ciclable
con
Contraflujo



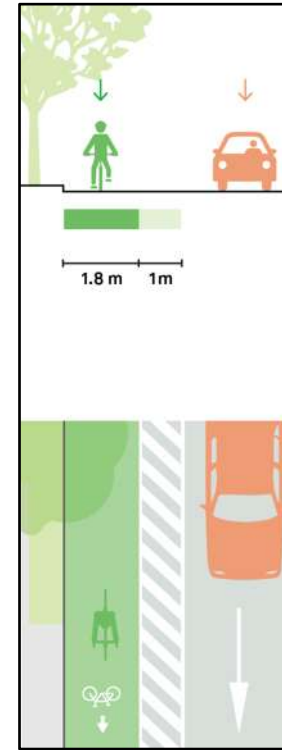
Ciclo-ruta
Protegida



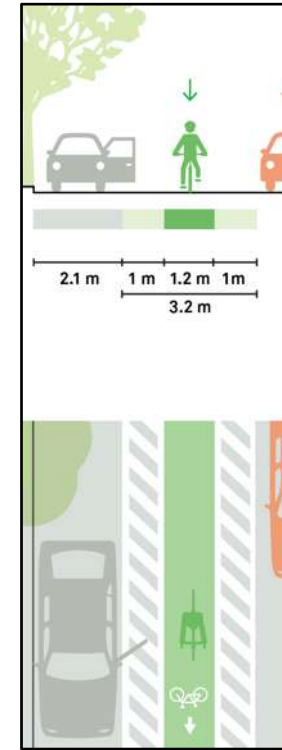
Ciclo-ruta
Protegida
Bidireccional



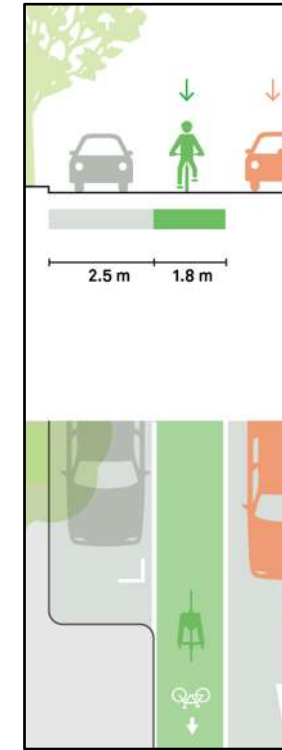
Ciclo-ruta
Elevada



Ciclo-carril con
separador
adosada a la
acera



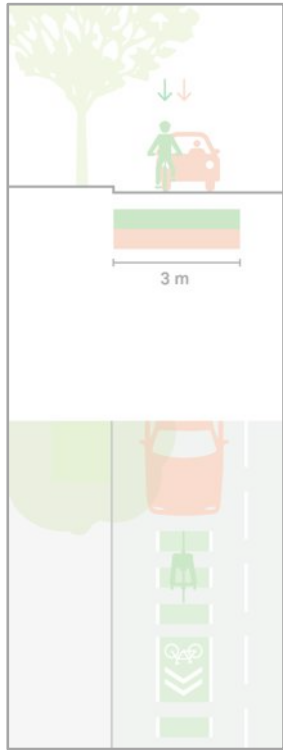
Ciclo-carril
con
separador



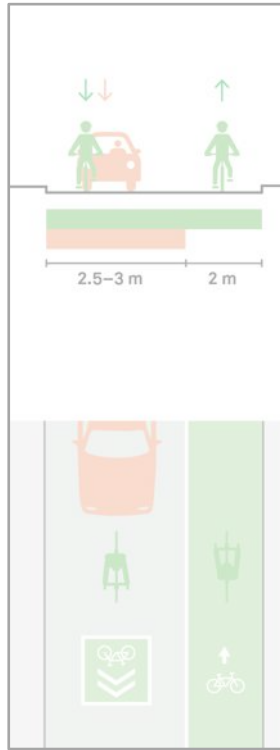
Ciclo-carril
convencional

Infraestructura Ciclista

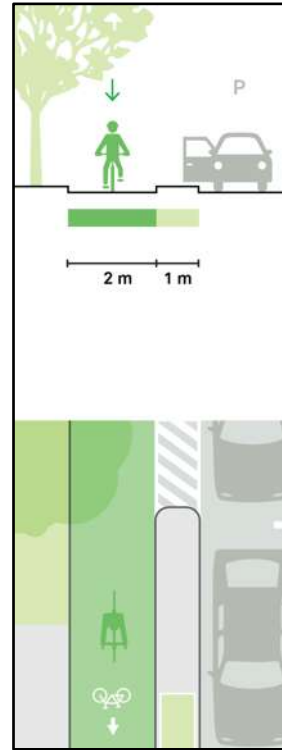
Geometría



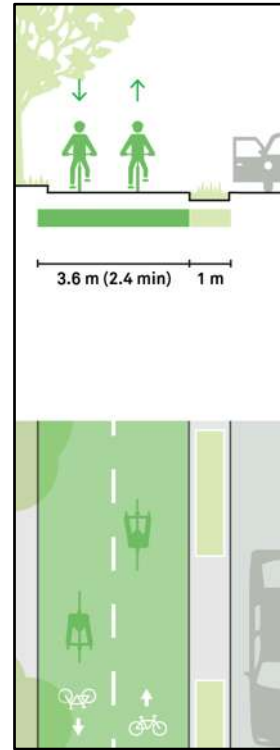
Ciclo-calle



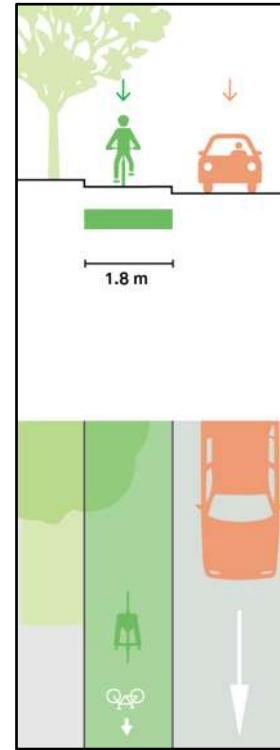
Calle Ciclable
con
Contraflujo



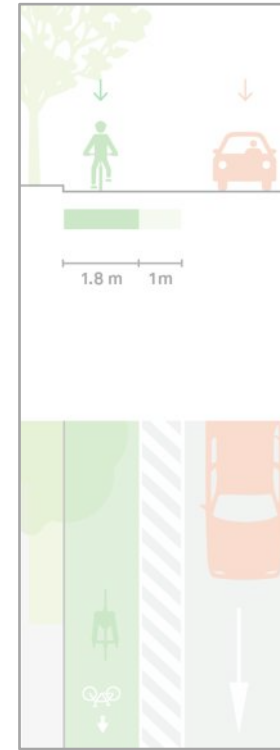
Ciclo-ruta
Protegida



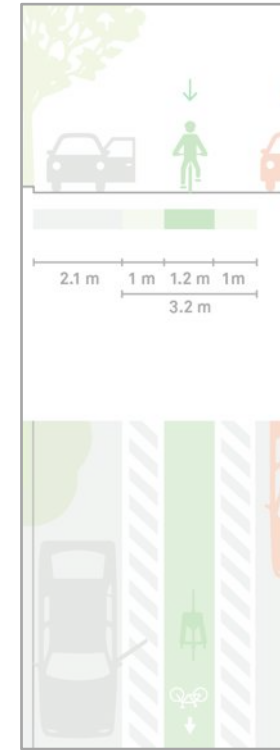
Ciclo-ruta
Protegida
Bidireccional



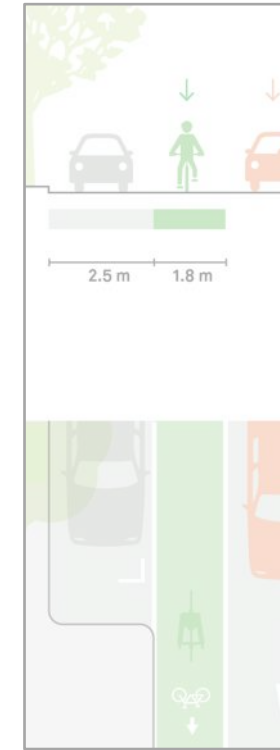
Ciclo-ruta
Elevada



Ciclo-carril con
separador
adosada a la
acera



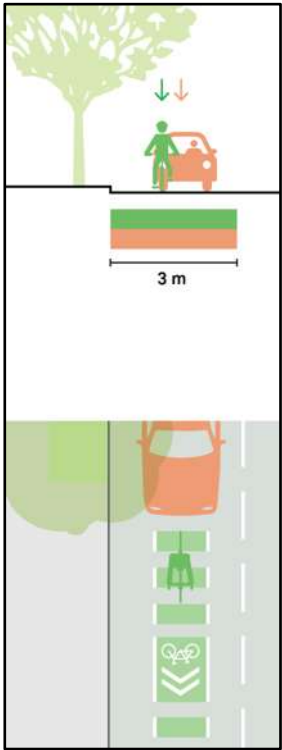
Ciclo-carril
con
separador



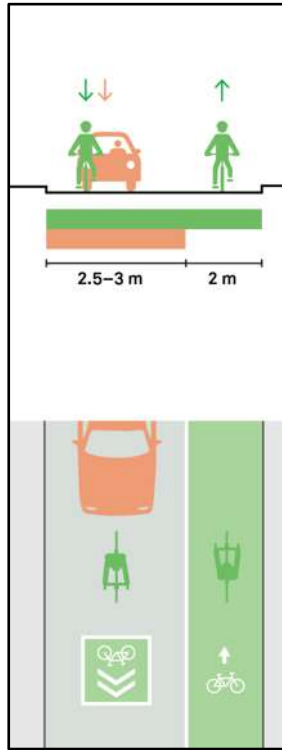
Ciclo-carril
convencional

Infraestructura Ciclista

Geometría



Ciclo-calle



Ciclo-calle con Contraflujo



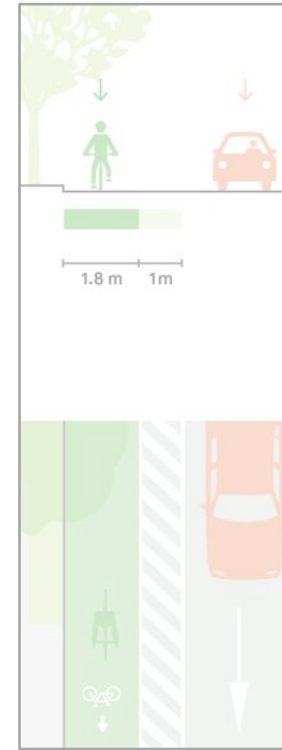
Ciclo-ruta Protegida



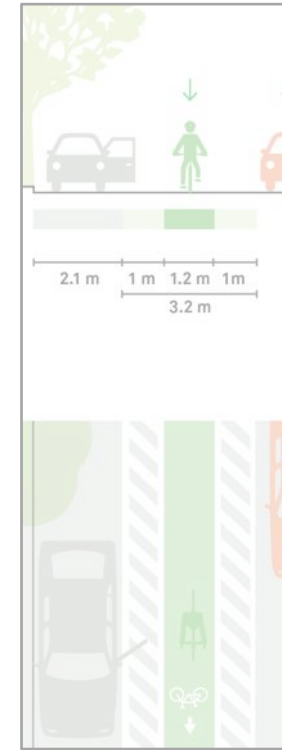
Ciclo-ruta Protegida Bidireccional



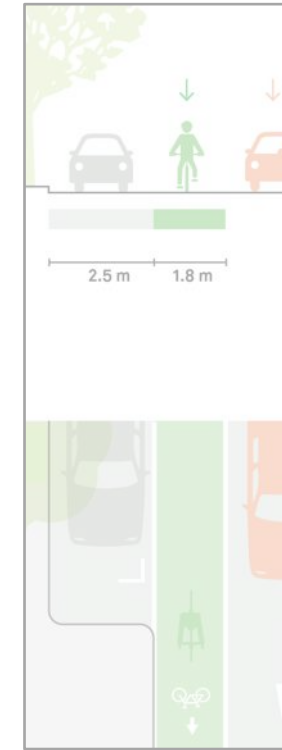
Ciclo-ruta Elevada



Ciclo-carril con separador adosada a la acera



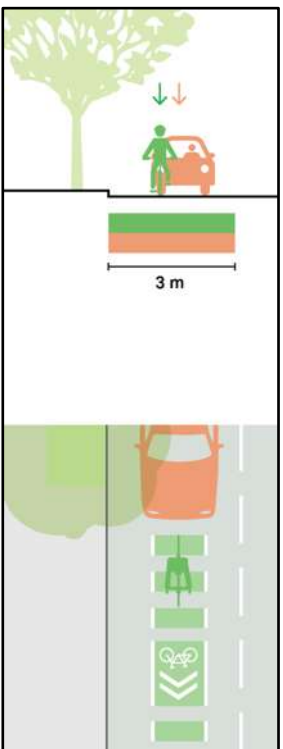
Ciclo-carril con separador



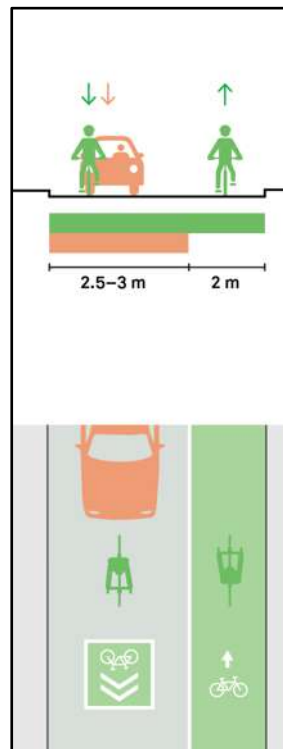
Ciclo-carril convencional

Infraestructura Ciclista

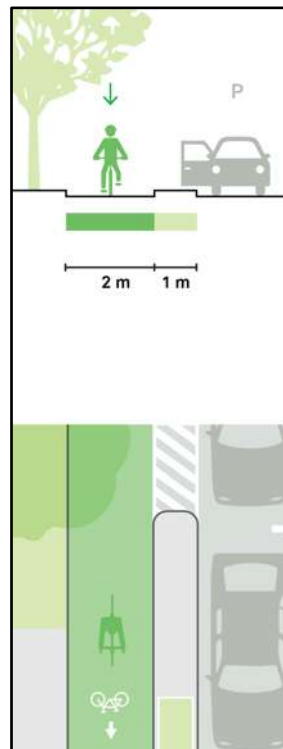
Geometría



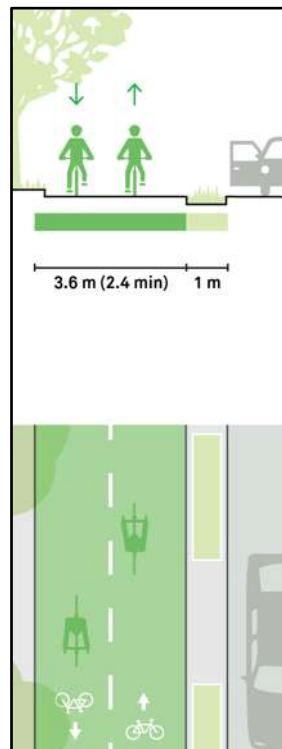
Ciclo-calle



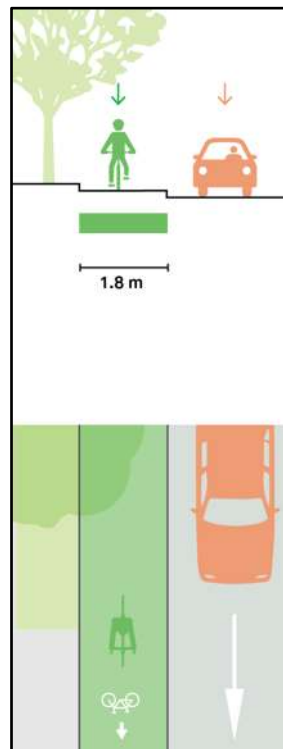
Ciclo-calle con Contraflujo



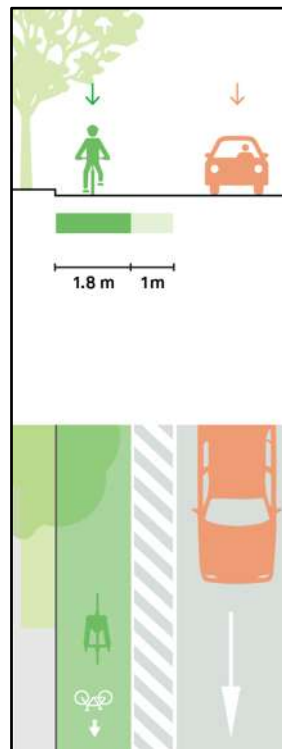
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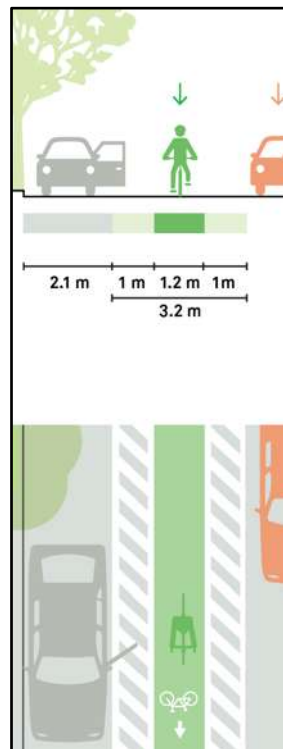
Ciclo-ruta Protegida Bidireccional



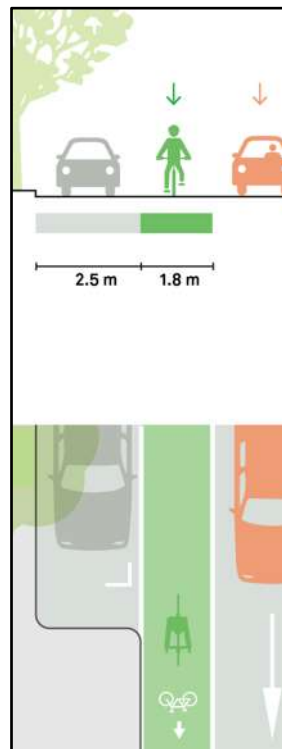
Ciclo-ruta Elevada



Ciclo-carril con separador adosada a la acera



Ciclo-carril con separador



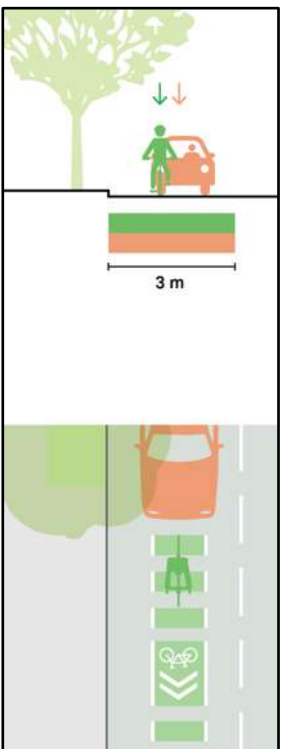
Ciclo-carril convencional

< 30 km/h

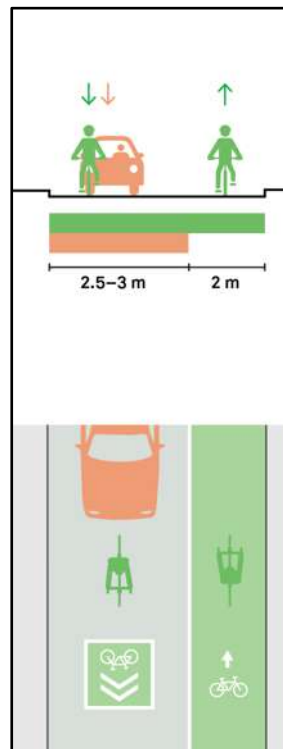
Compartir

Infraestructura Ciclista

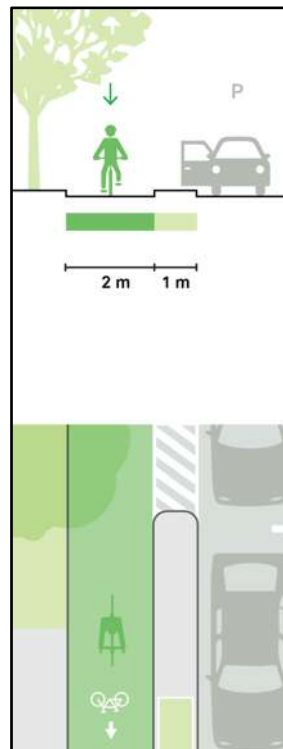
Geometría



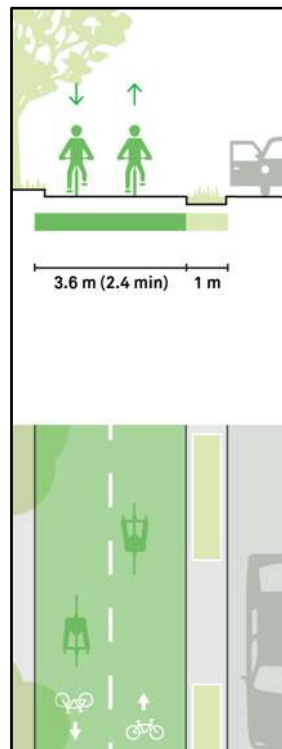
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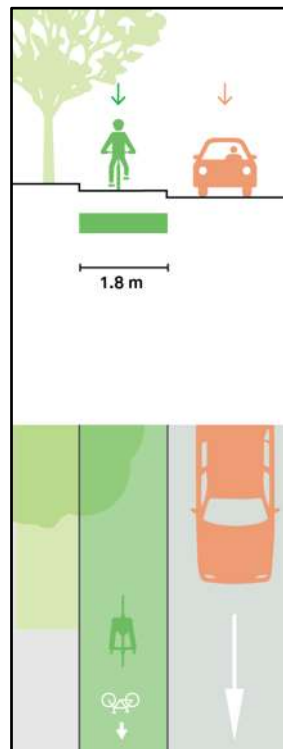
Ciclo-calle con
Contraflujo



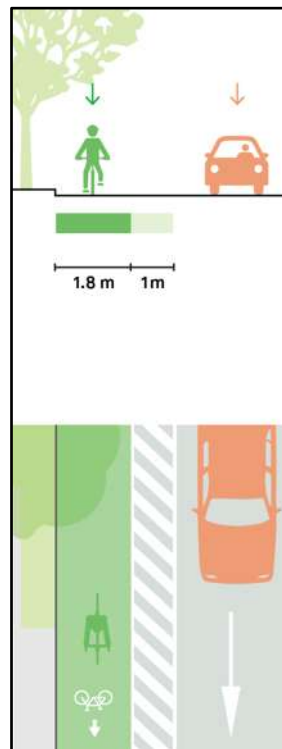
Ciclo-ruta
Protegida



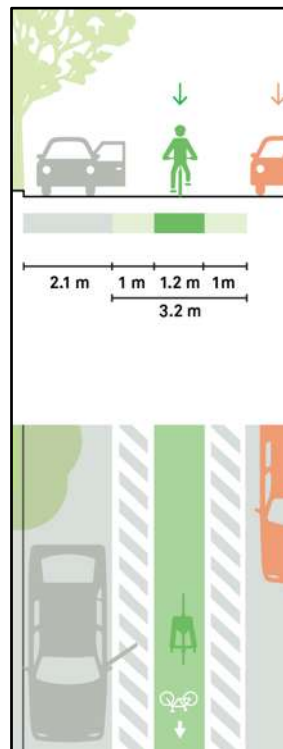
Ciclo-ruta
Protegida
Bidireccional



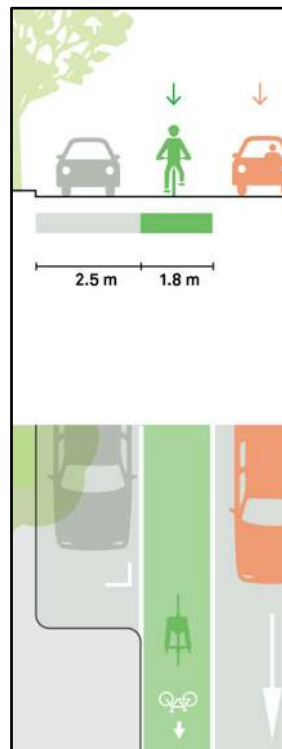
Ciclo-ruta
Elevada



Ciclo-carril con
separador
adosada a la
acera



Ciclo-carril
con
separador



Ciclo-carril
convencional

< 30 km/h

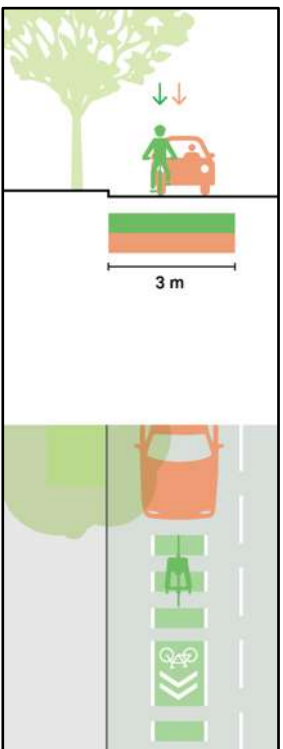
Compartir

> 30 km/h

Proteger

Infraestructura Ciclista

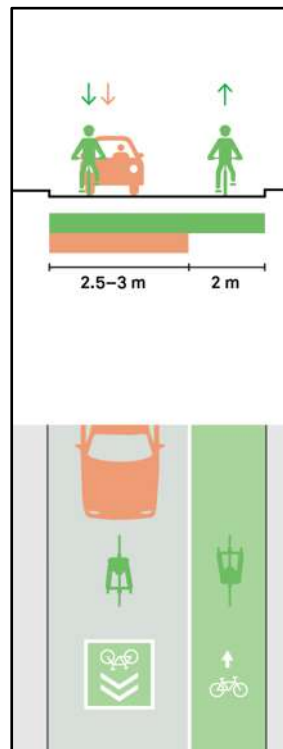
Geometría



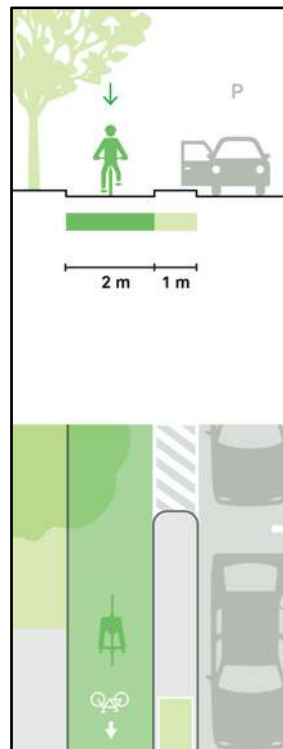
Calle Ciclista

< 30 km/h

Compartir



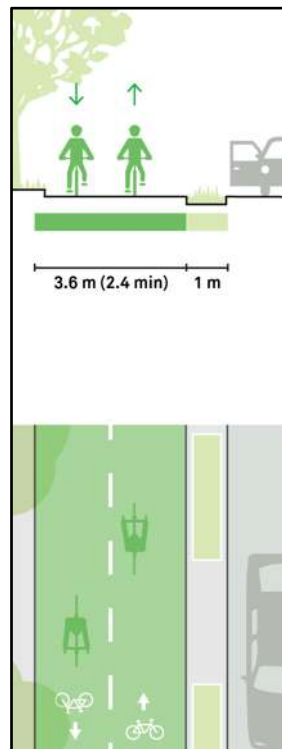
Ciclo-calle con Contraflujo



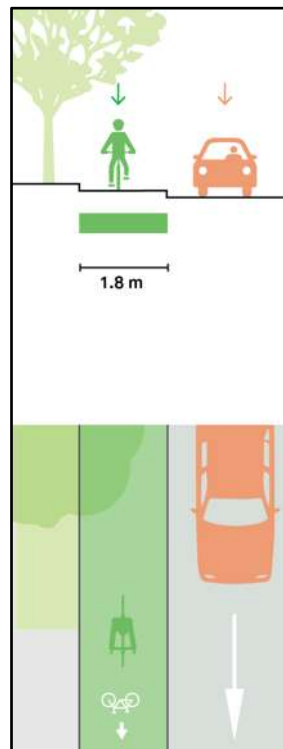
Ciclo-ruta Protegida

> 30 km/h

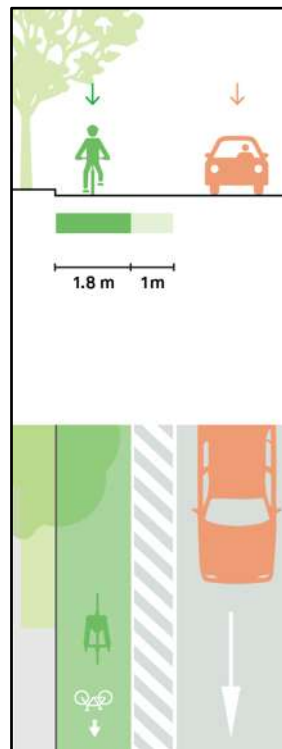
Proteger



Ciclo-ruta Protegida Bidireccional



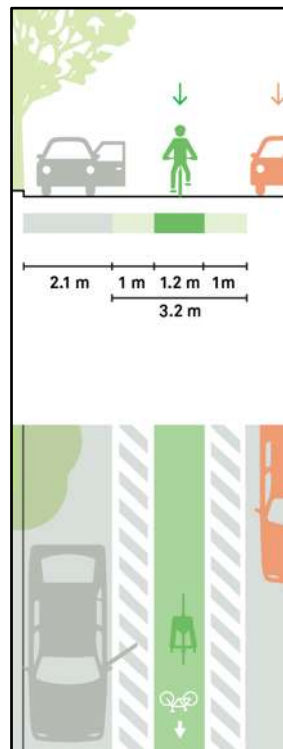
Ciclo-ruta Elevada



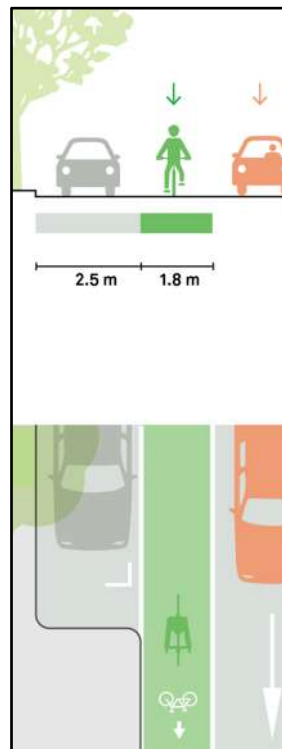
Ciclo-carril con separador adosada a la acera

30-40 km/h

Contextualizar



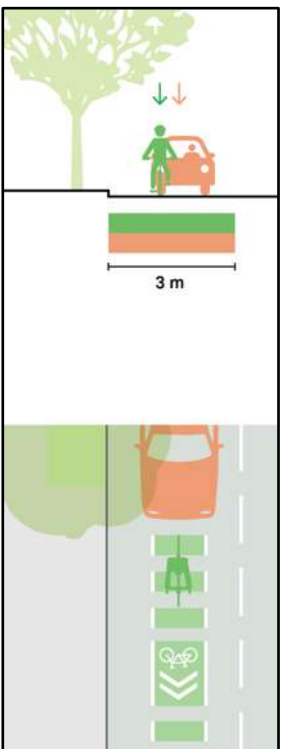
Ciclo-carril con separador



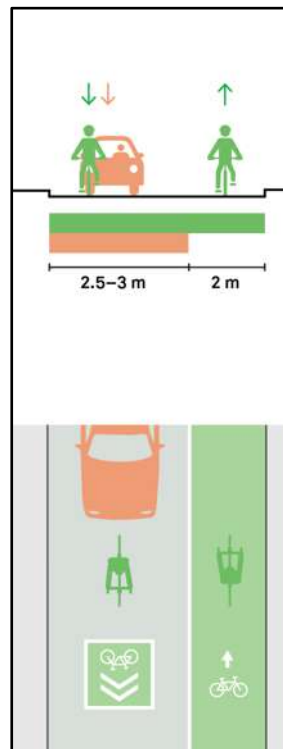
Ciclo-carril convencional

Infraestructura Ciclista

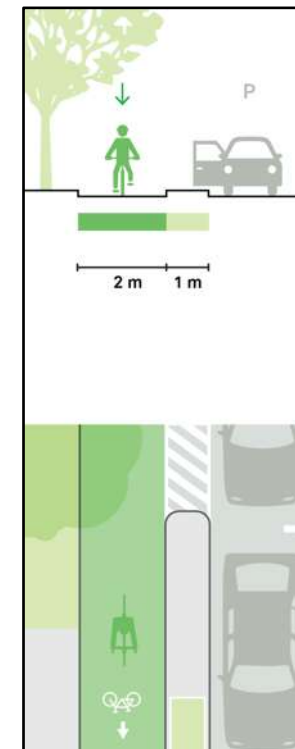
Geometría



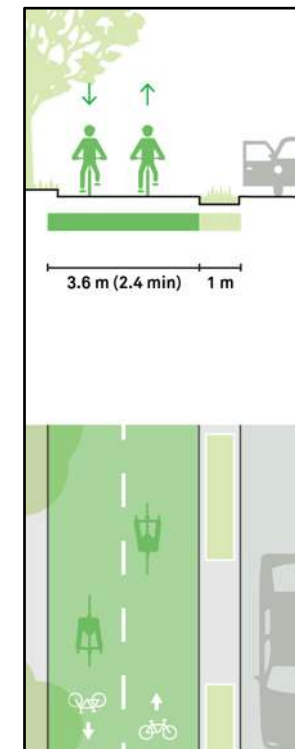
Calle Ciclista



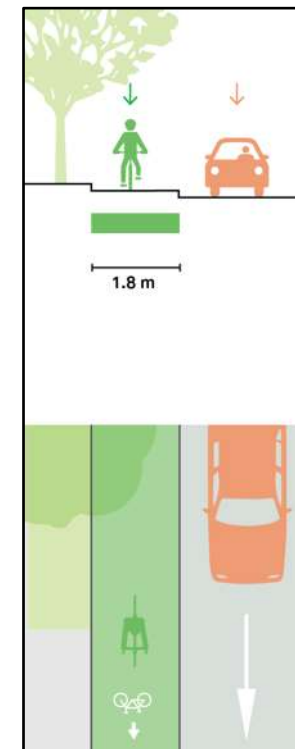
Ciclo-calle con Contraflujo



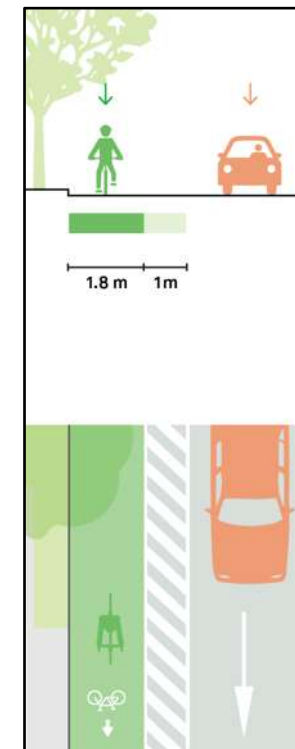
Ciclo-ruta Protegida



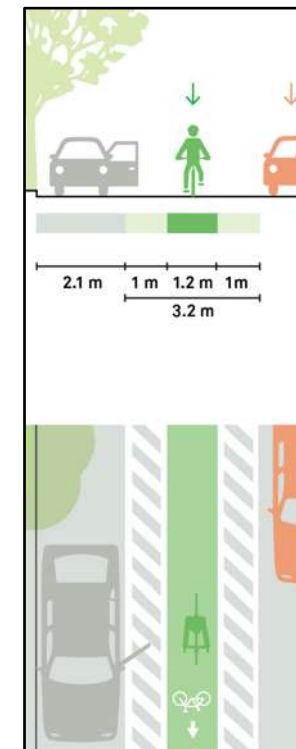
Ciclo-ruta Protegida Bidireccional



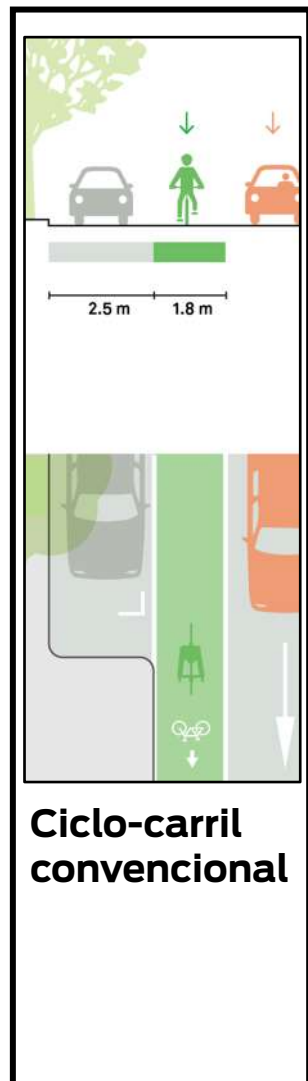
Ciclo-ruta Elevada



Ciclo-carril con separador adosada a la acera



Ciclo-carril con separador

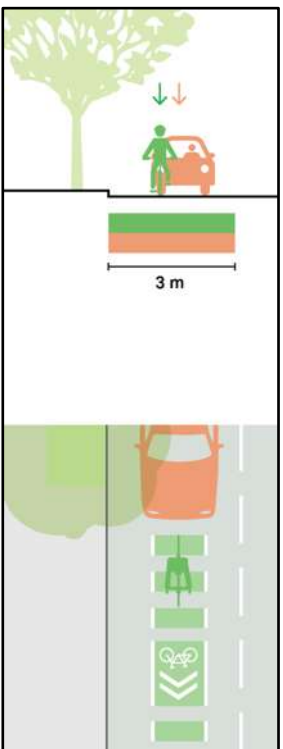


Ciclo-carril convencional

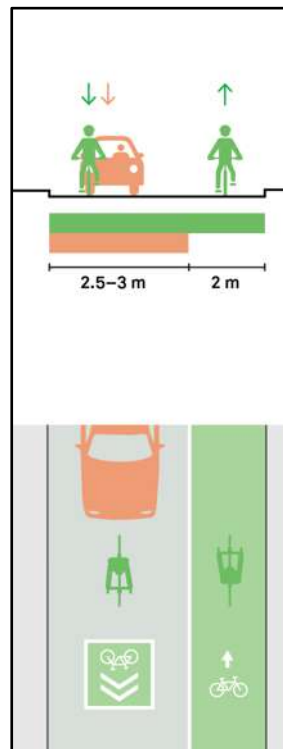
¿Segura?

Infraestructura Ciclista

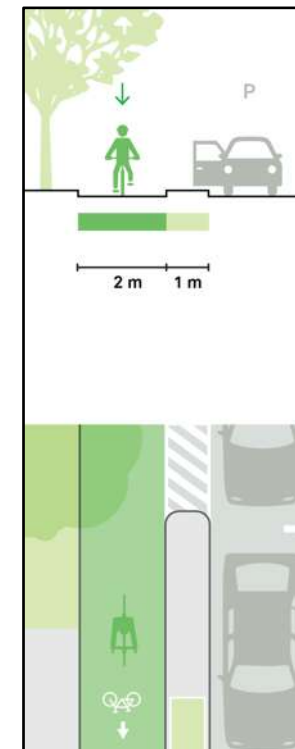
Geometría



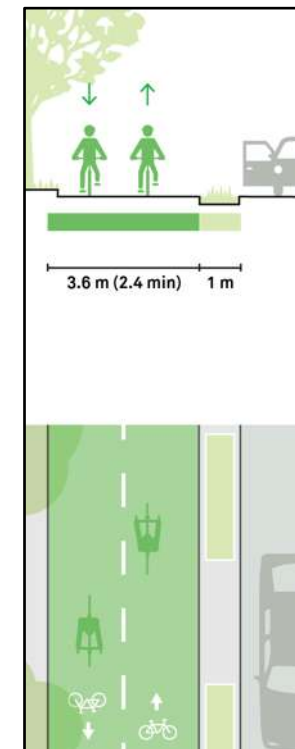
Calle Ciclista



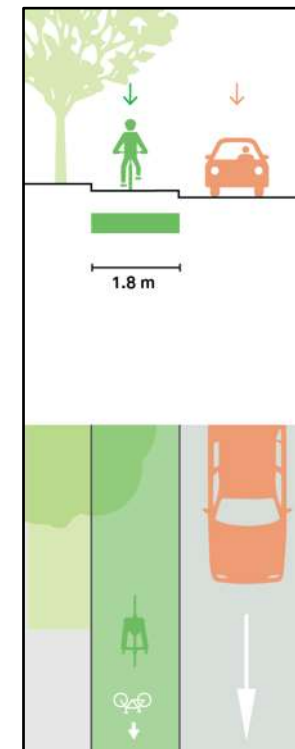
Ciclo-calle con Contraflujo



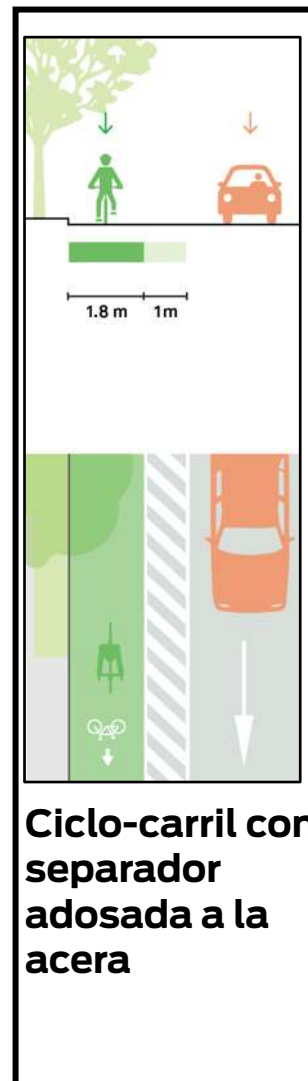
Ciclo-ruta Protegida



Ciclo-ruta Protegida Bidireccional

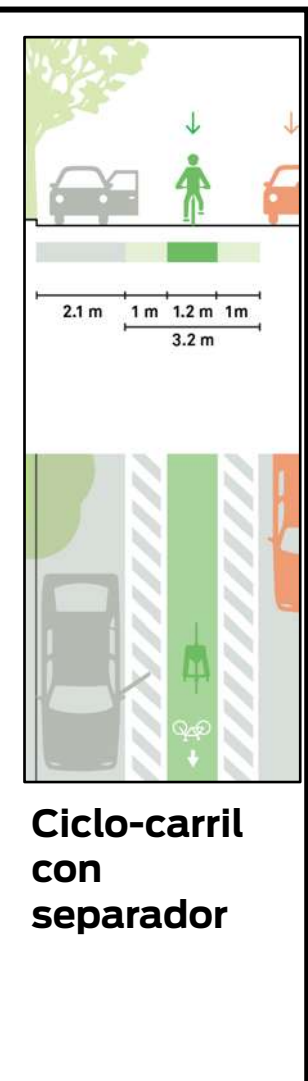


Ciclo-ruta Elevada

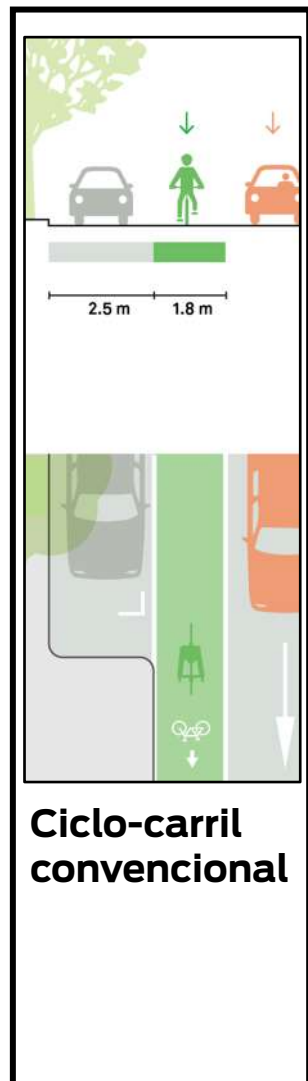


Ciclo-carril con separador adosada a la acera

Un poco más segura



Ciclo-carril con separador

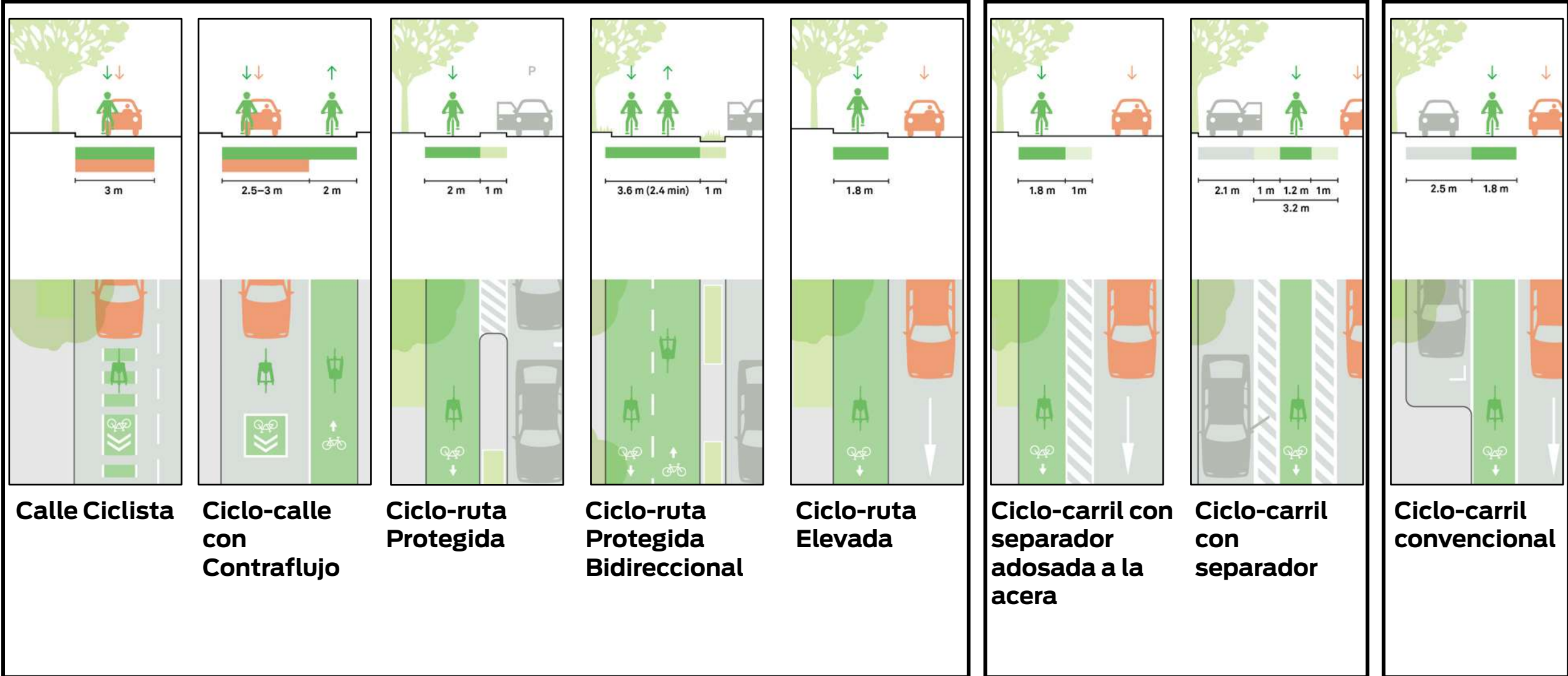


Ciclo-carril convencional

¿Segura?

Infraestructura Ciclista

Geometría



Calle Ciclista

Ciclo-calle con Contraflujo

Ciclo-ruta Protegida

Ciclo-ruta Protegida Bidireccional

Ciclo-ruta Elevada

Ciclo-carril con separador adosada a la acera

Ciclo-carril con separador

Ciclo-carril convencional

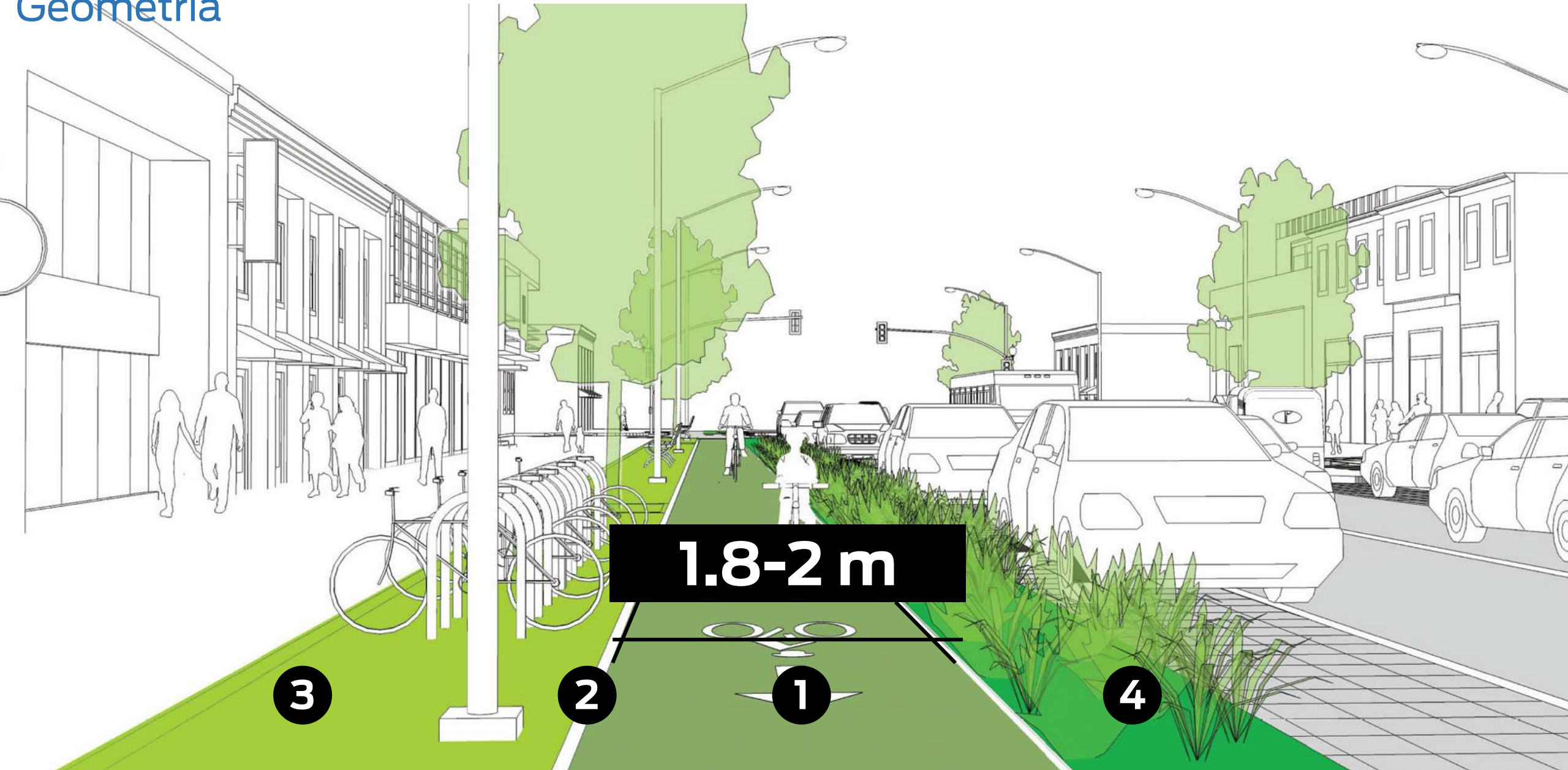
Más segura

Un poco más segura

¿Segura?

Infraestructura Ciclista

Geometría



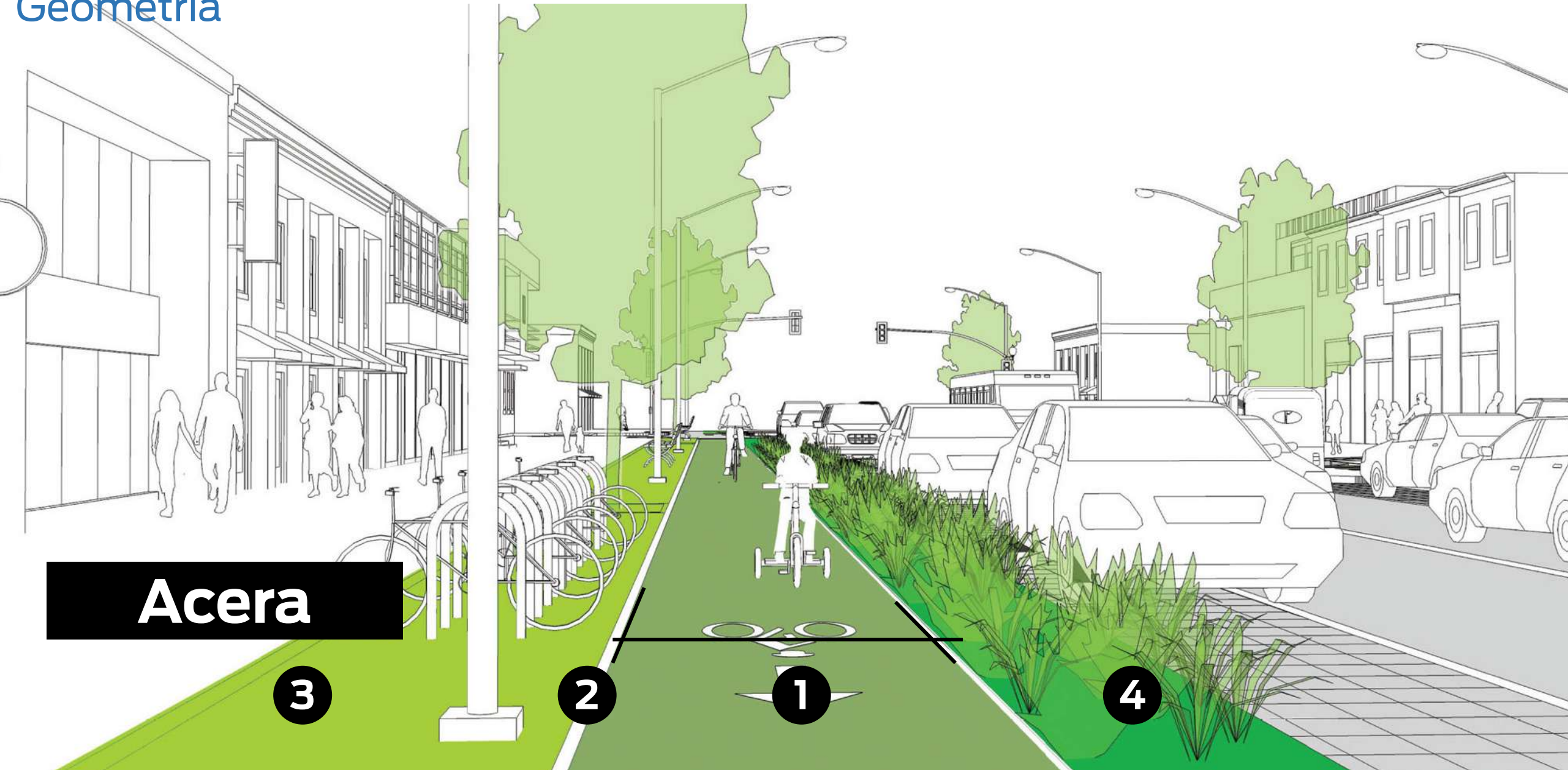
Infraestructura Ciclista

Geometría



Infraestructura Ciclista

Geometría



Acera

3

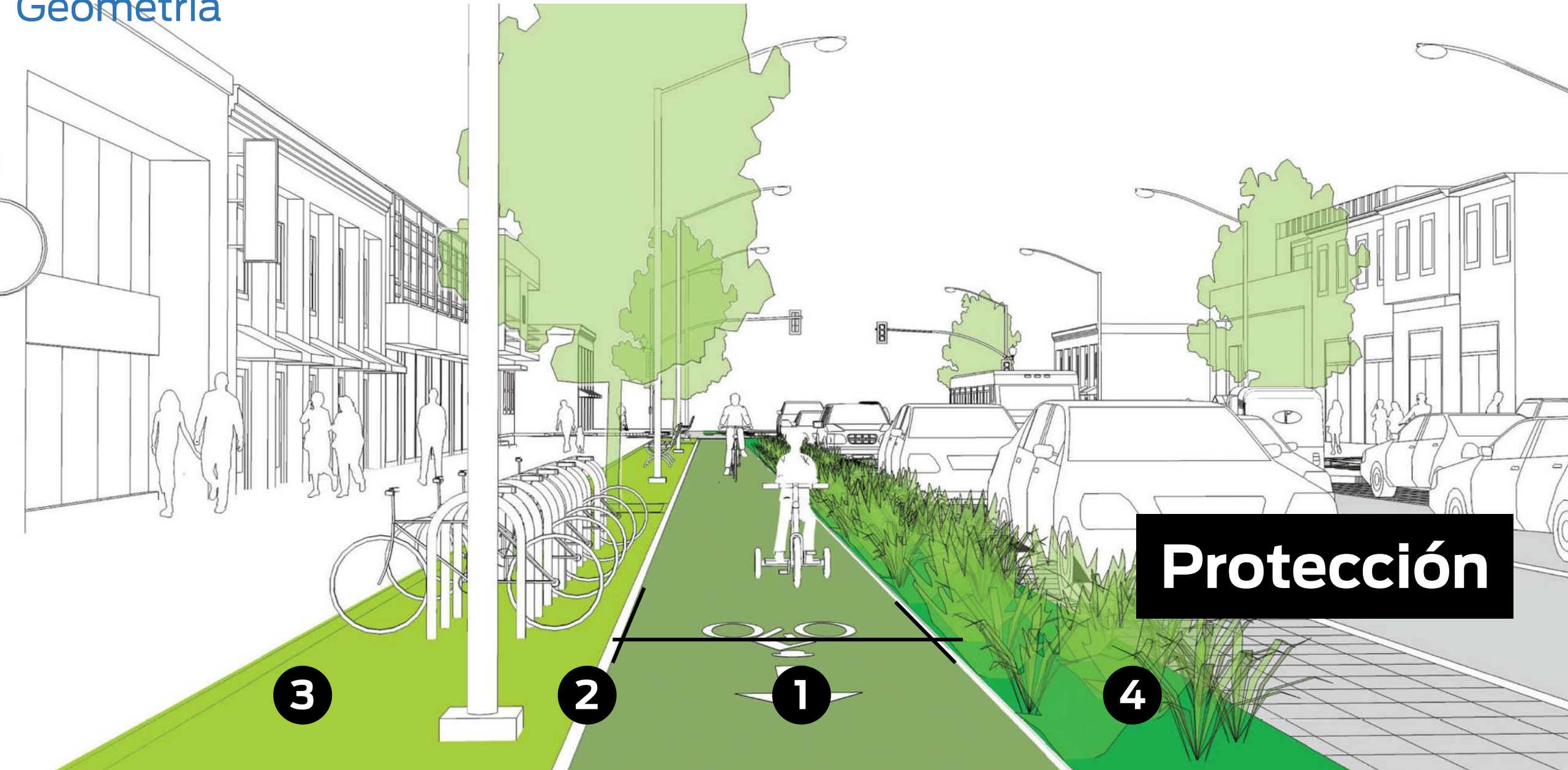
2

1

4

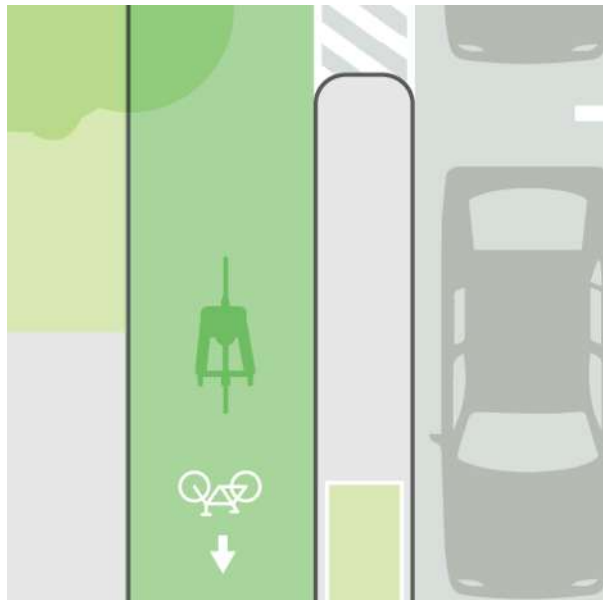
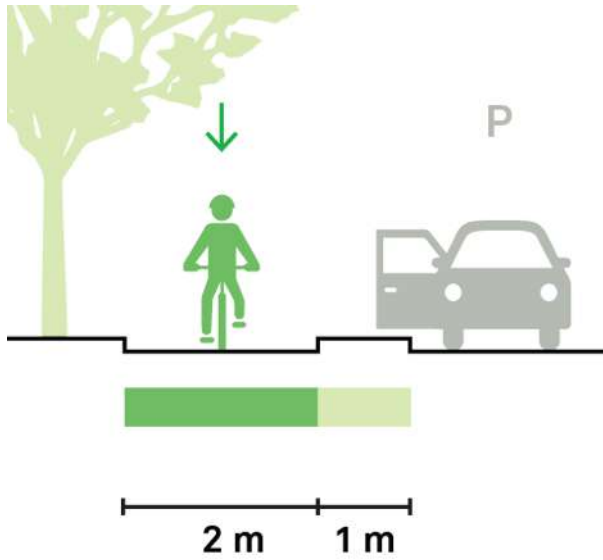
Infraestructura Ciclista

Geometría



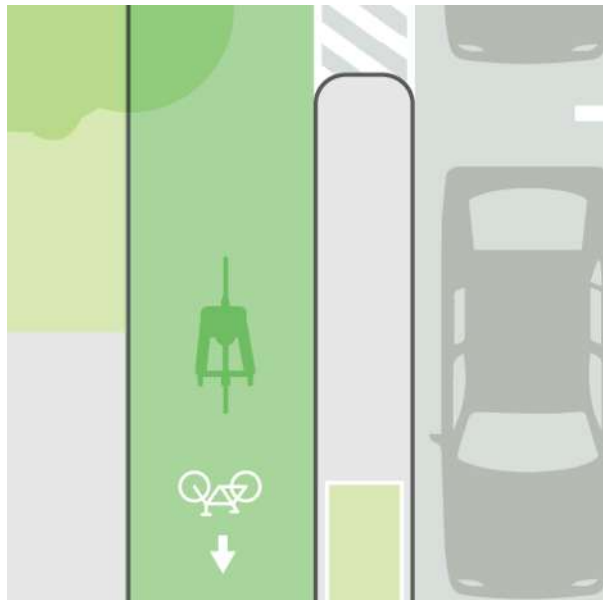
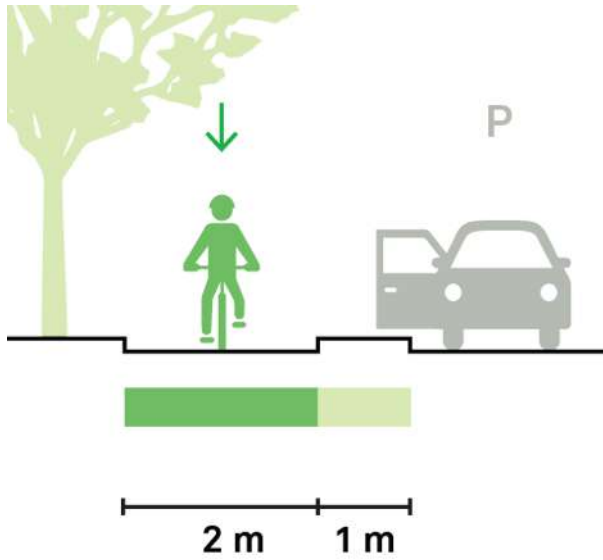
Infraestructura Ciclista

Ciclo-ruta Protegida



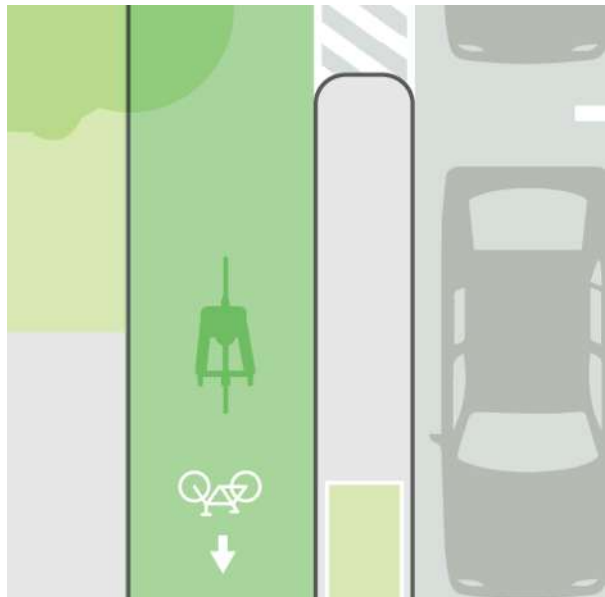
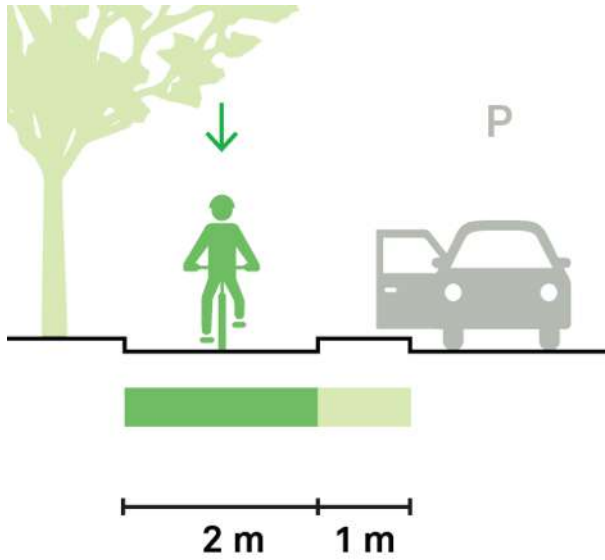
Infraestructura Ciclista

Ciclo-ruta Protegida



Infraestructura Ciclista

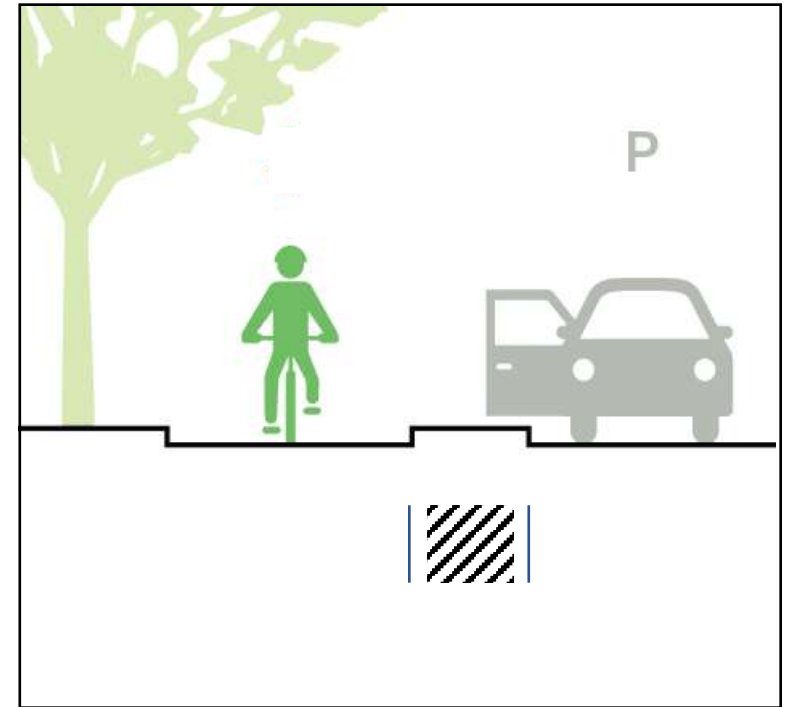
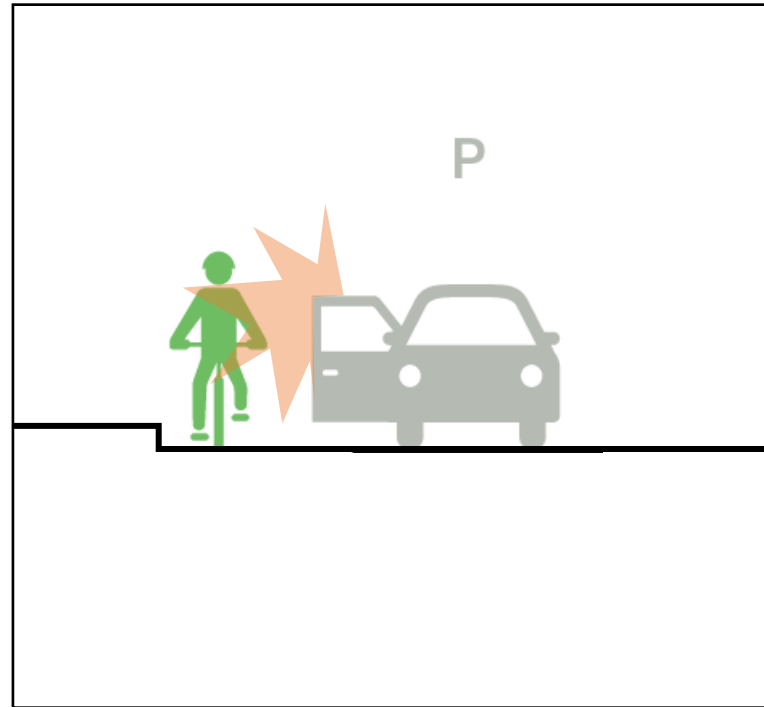
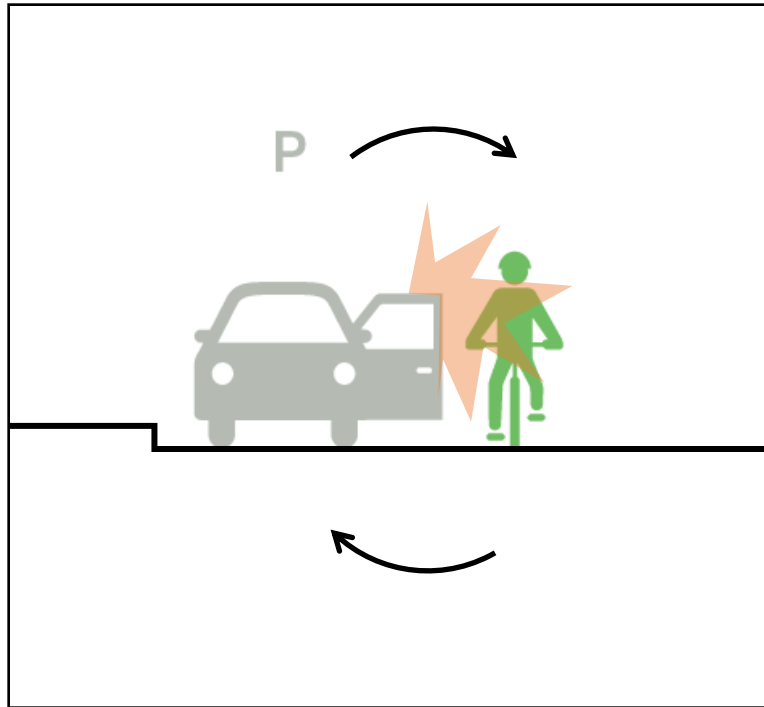
Ciclo-ruta Protegida



NYC, USA

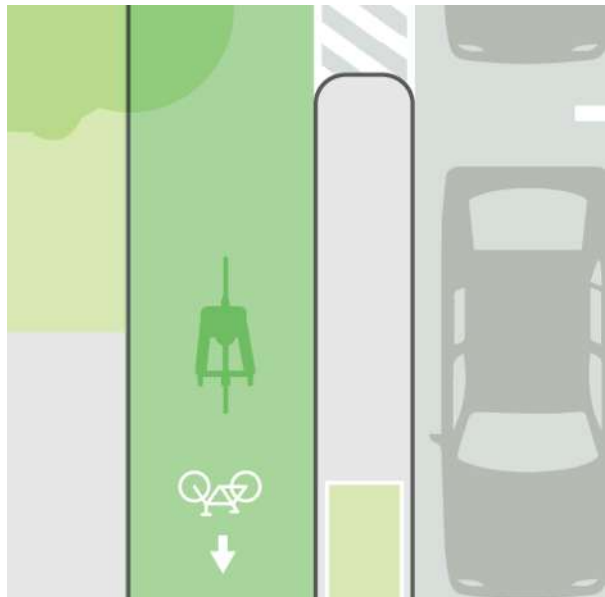
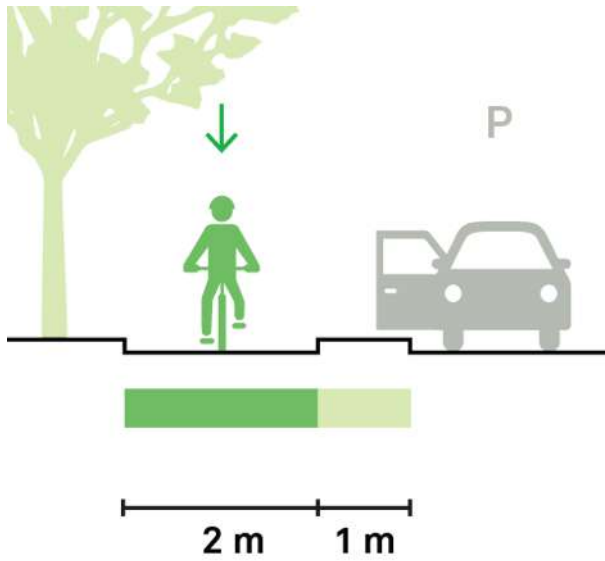
Infraestructura Ciclista

Ciclo-ruta Protegida



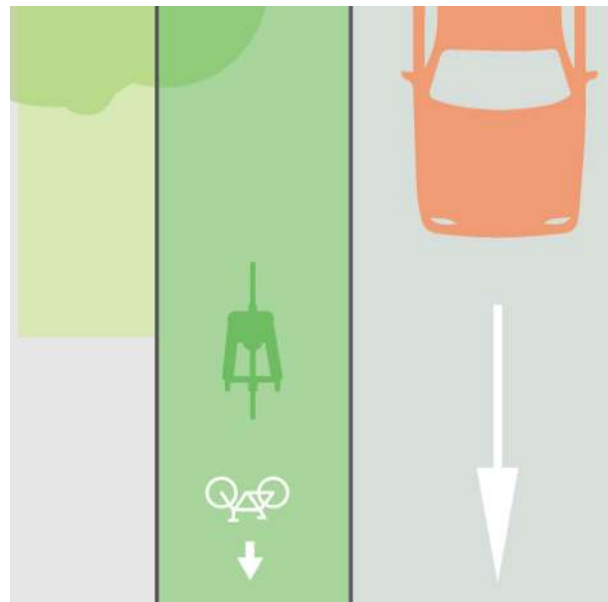
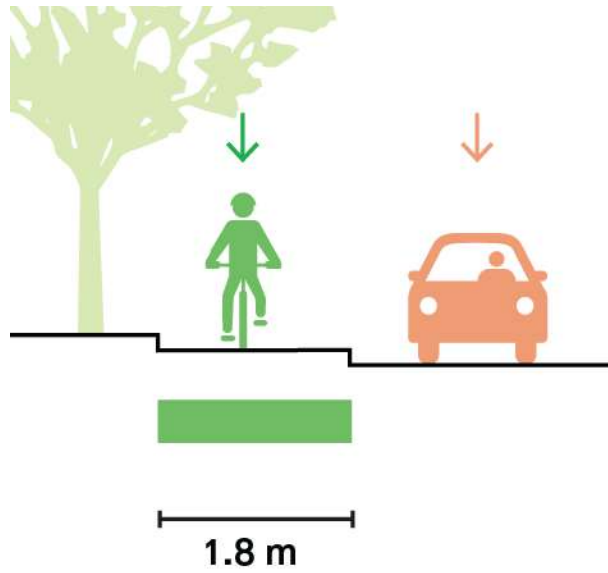
Infraestructura Ciclista

Ciclo-ruta Protegida



Infraestructura Ciclista

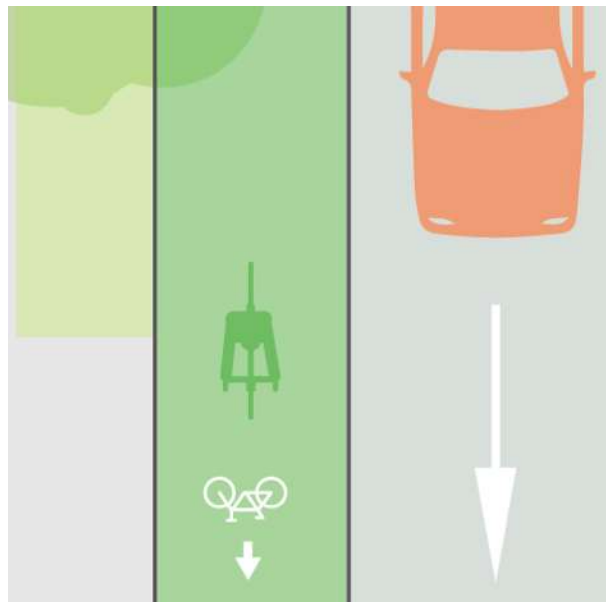
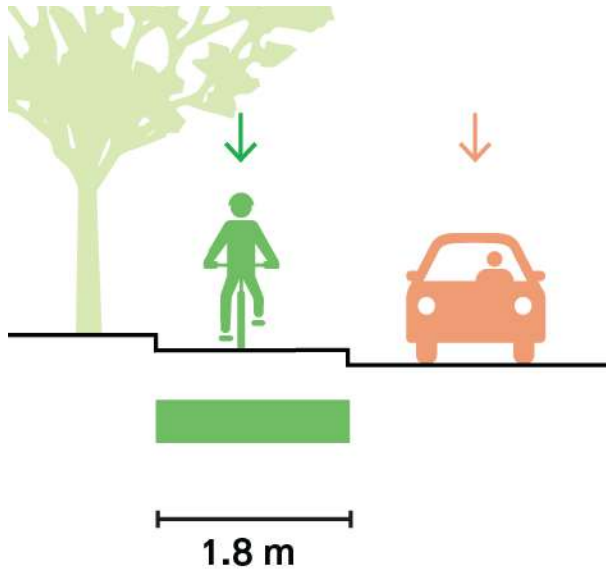
Ciclo-ruta Elevada



París, Francia

Infraestructura Ciclista

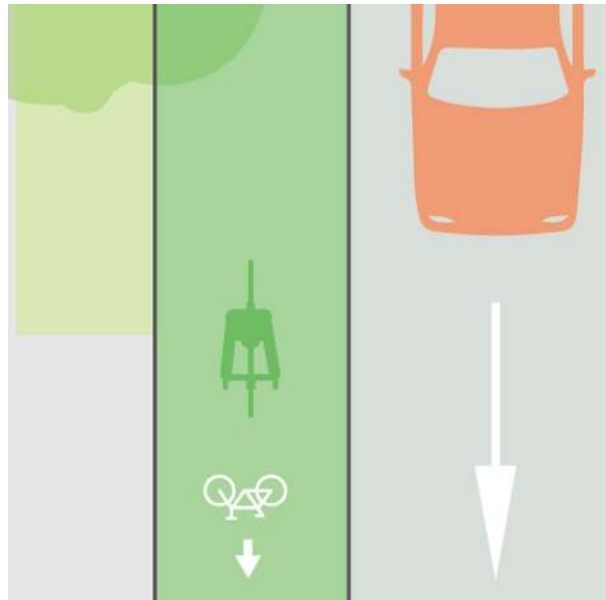
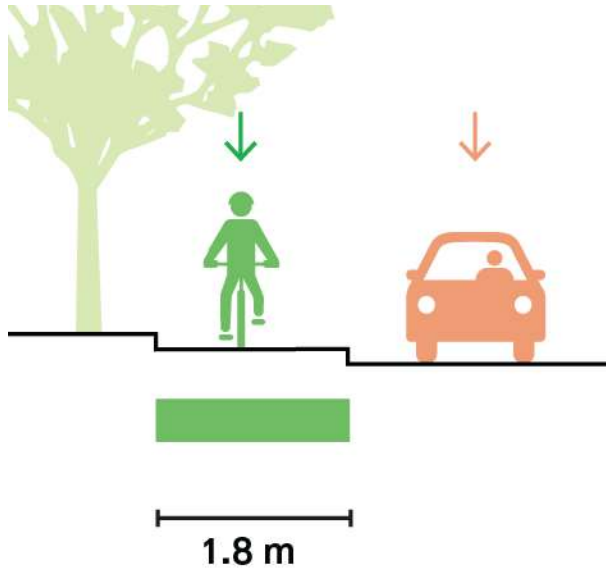
Ciclo-ruta Elevada



París, Francia

Infraestructura Ciclista

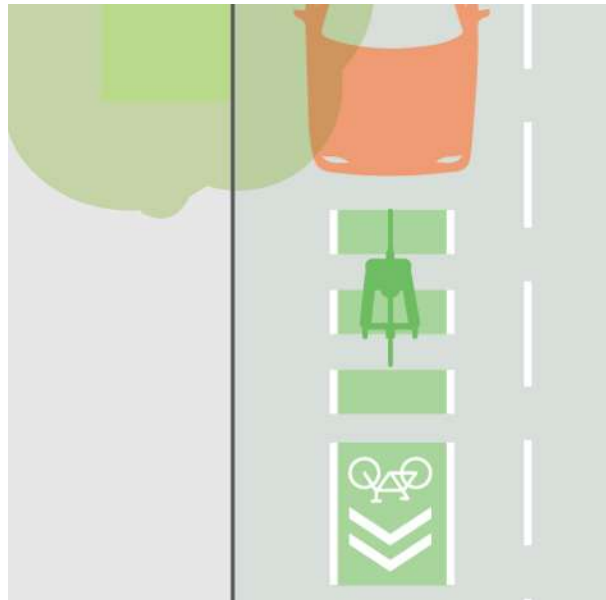
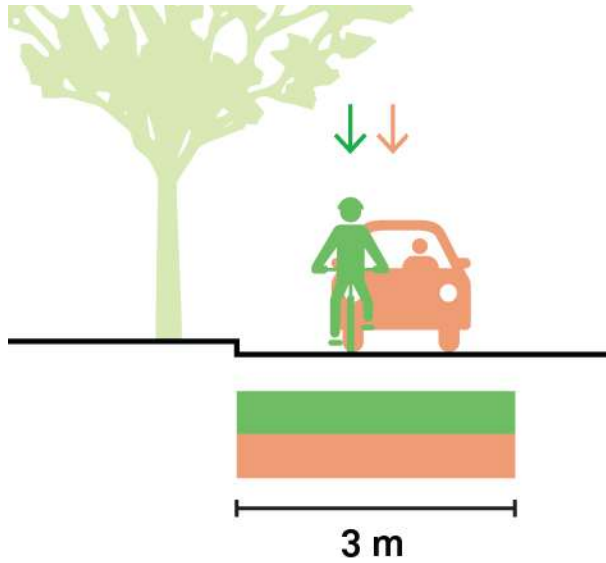
Ciclo-ruta Elevada



París, Francia

Infraestructura Ciclista

Ciclo-calle



London, UK
Credit: TfL



Credit: *People for Bikes*

Vehículos grandes



Credit: *City of Boston*

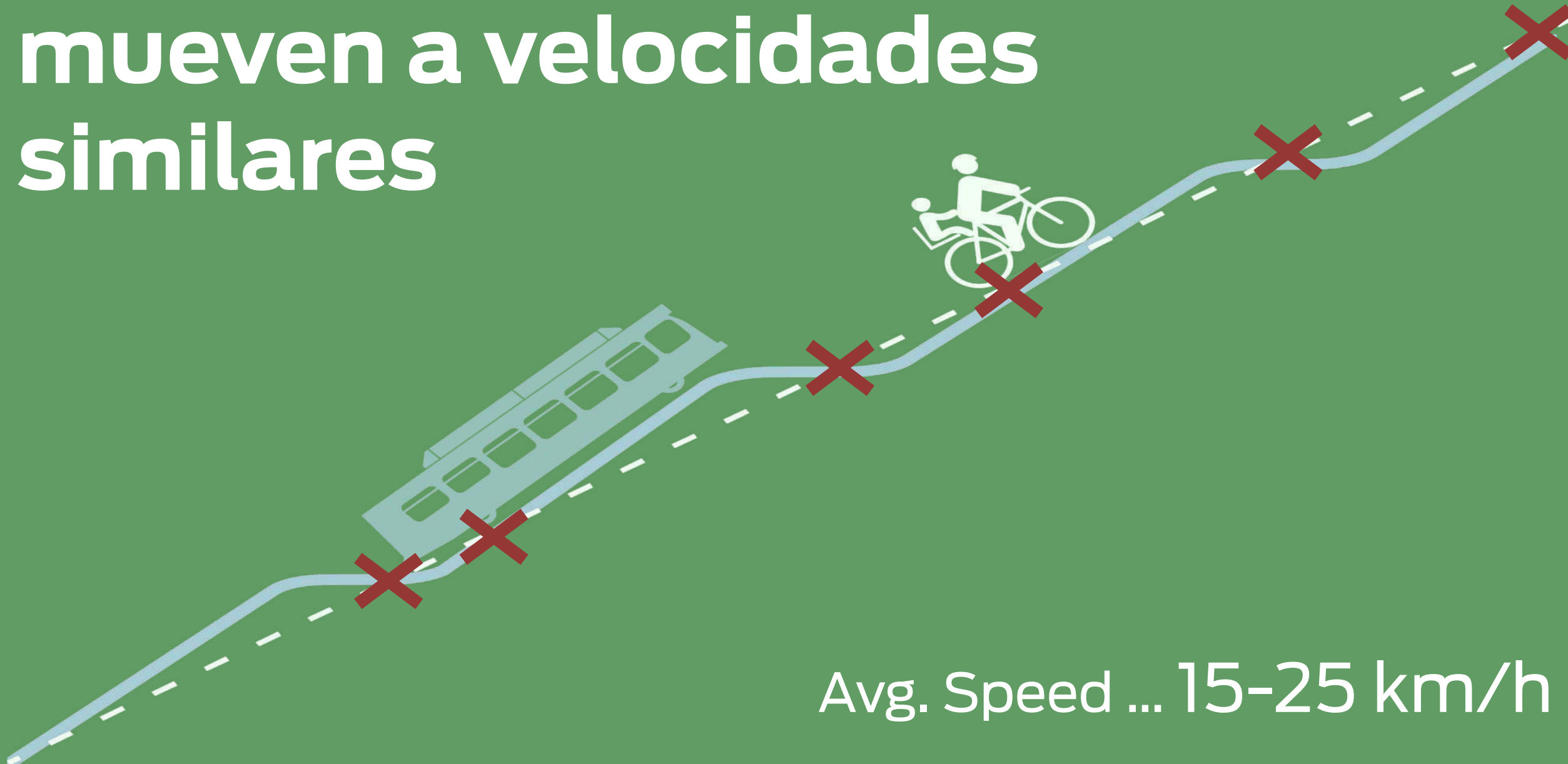
Sobrepasos frecuentes



Credit: *truewheelers.org*

Conflictos en la 'zona del bordillo'

Bicis and buses se mueven a velocidades similares



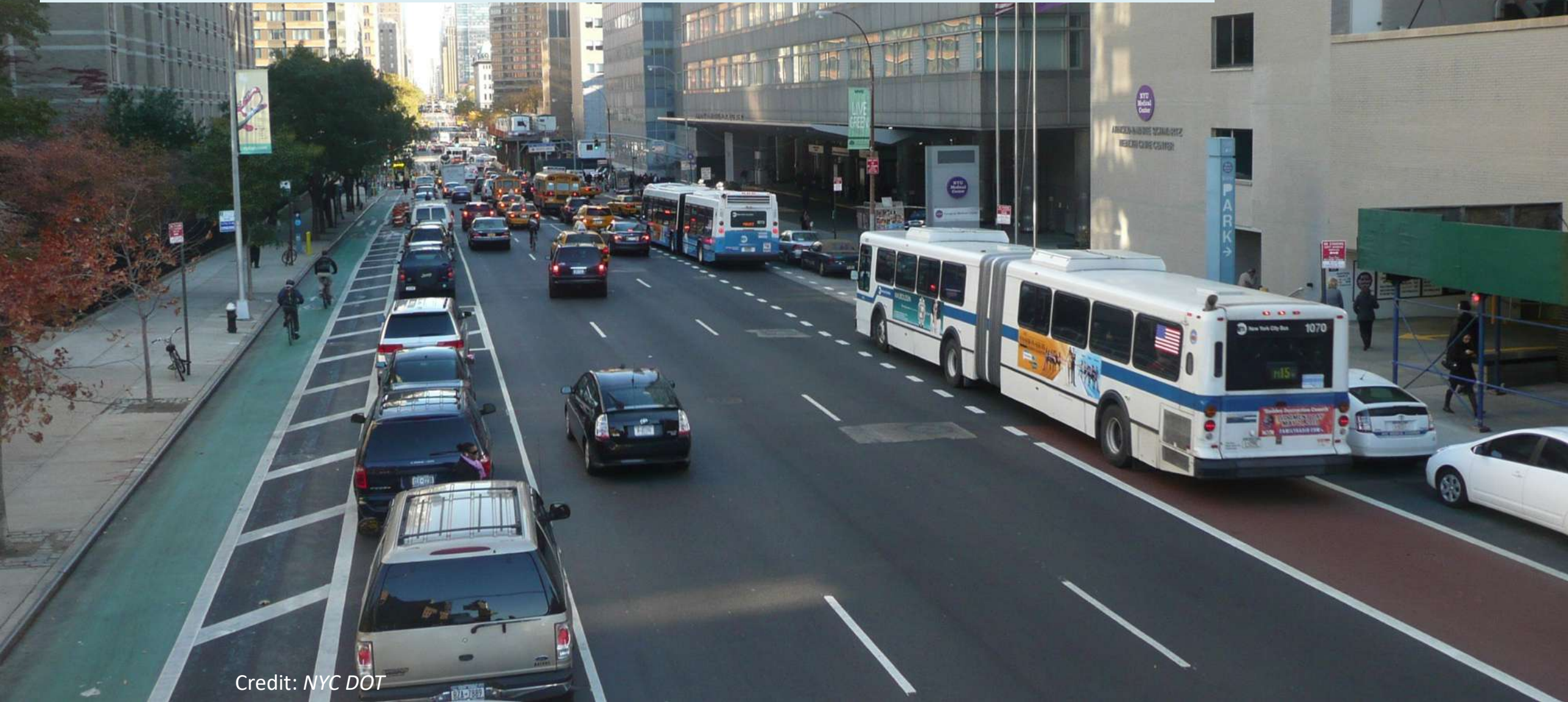
Avg. Speed ... 15-25 km/h

Separar bicis y buses



Credit: Adam Coppola for People for Bikes

Poner bicis en el costado opuesto



Credit: NYC DOT

Gestionar las paradas



Infraestructura Ciclista

En Paradas de Transporte Público



Fortaleza, Brazil

Infraestructura Ciclista

En Paradas de Transporte Público



Infraestructura Ciclista

En Paradas de Transporte Público



Chicago, USA

Infraestructura Ciclista

En Paradas de Transporte Público



Infraestructura Ciclista

En Paradas de Transporte Público



Calles Amigables con ciclistas

Buenas practicas

Calles

Calles de Doble Sentido



Calles

Ciclo-calle con Contraflujo

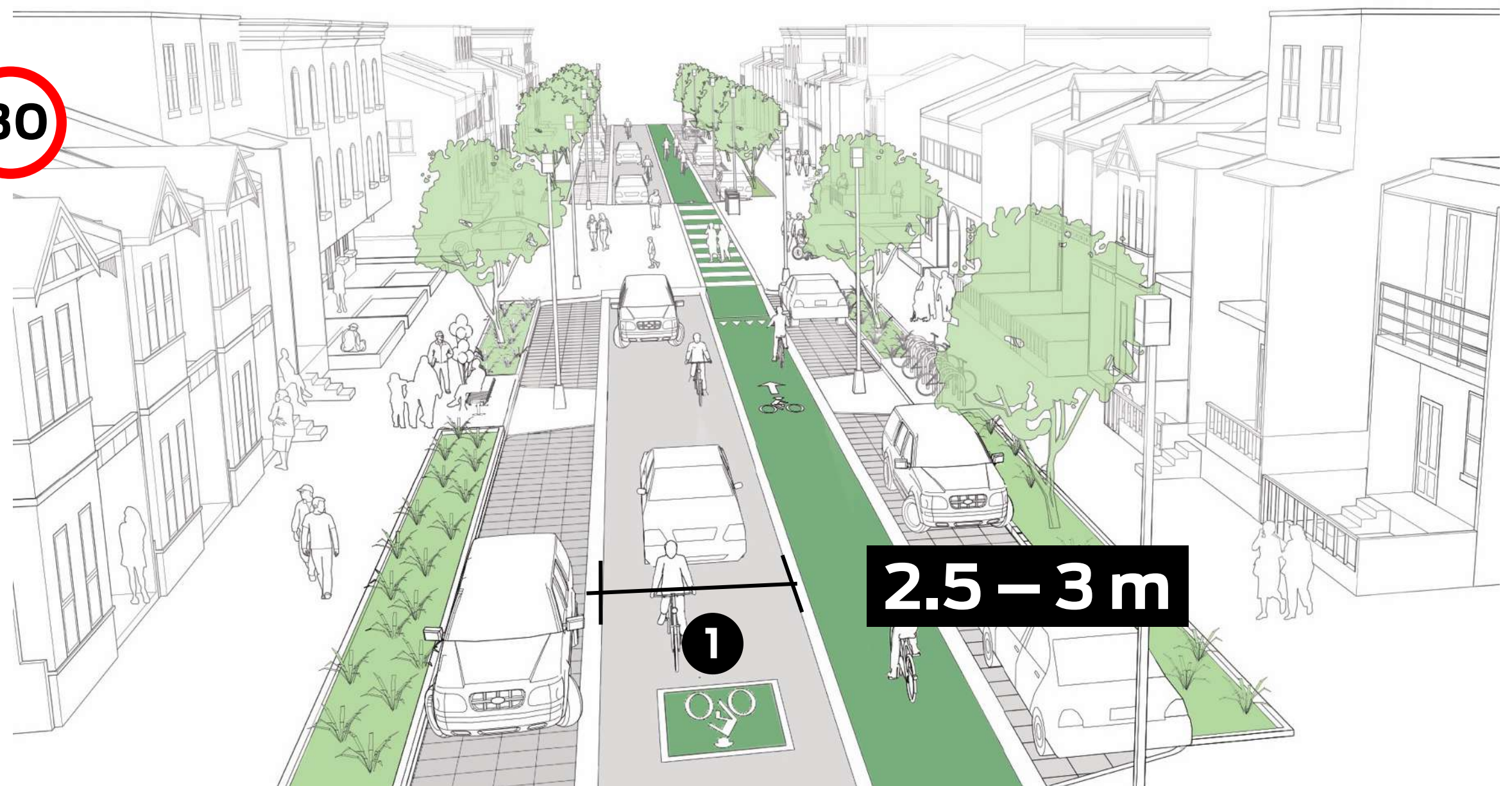
30



Calles

Ciclo-calle con Contraflujo

30



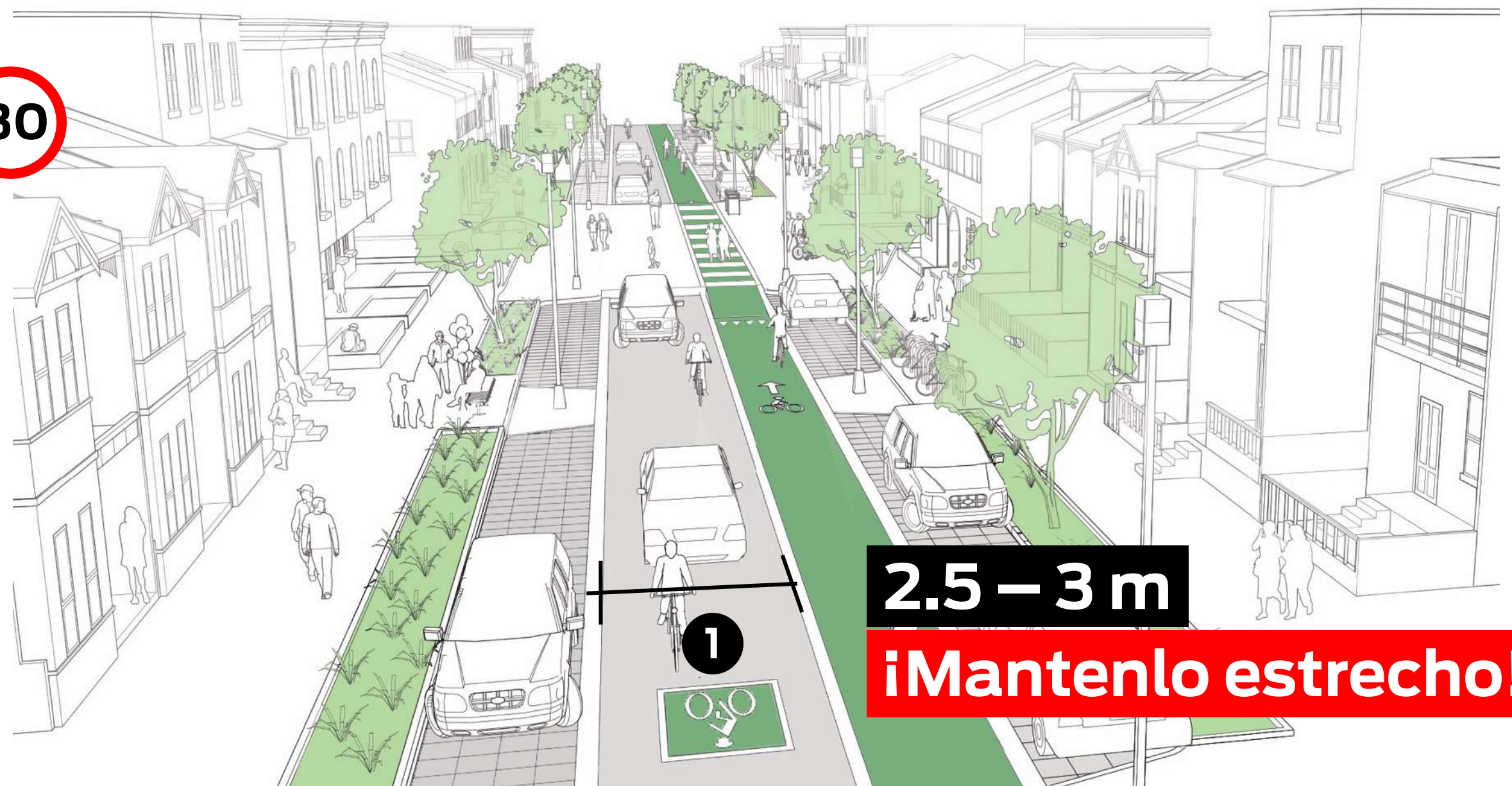
2.5 - 3 m

1

Calles

Ciclo-calle con Contraflujo

30



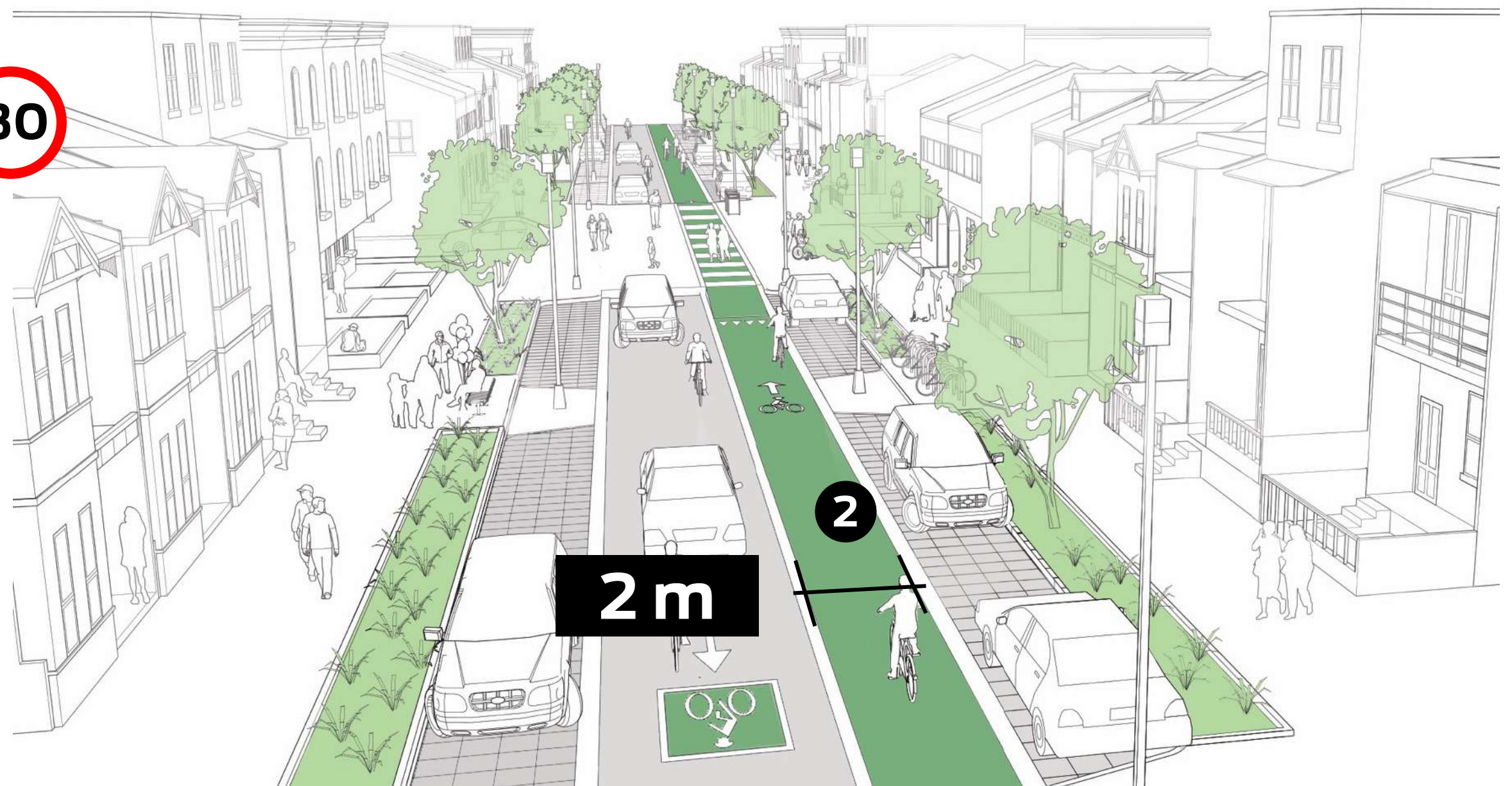
2.5 – 3 m

¡Mantenlo estrecho!

Calles

Ciclo-calle con Contraflujo

30



2m

2

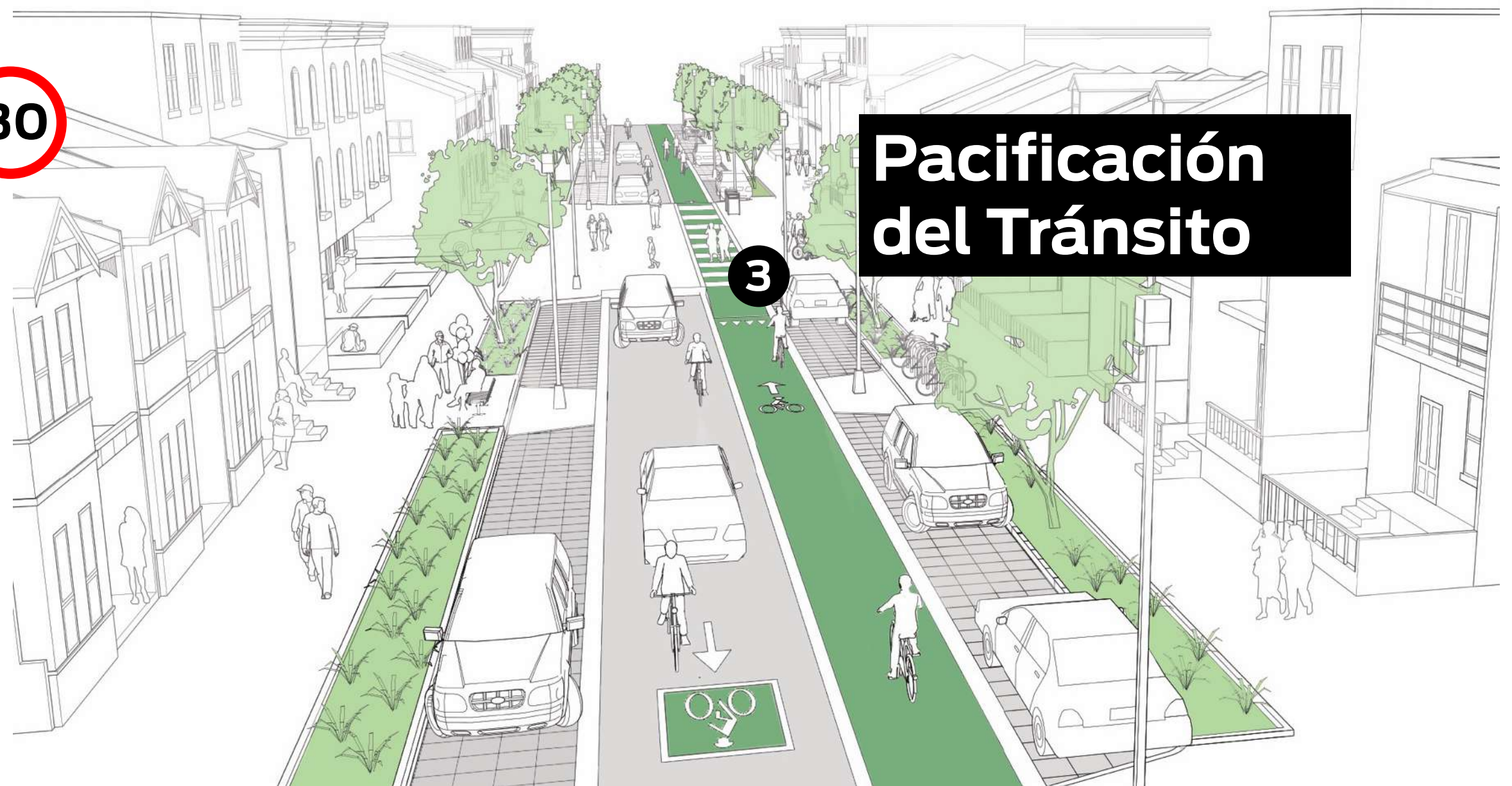
Calles

Ciclo-calle con Contraflujo

30

3

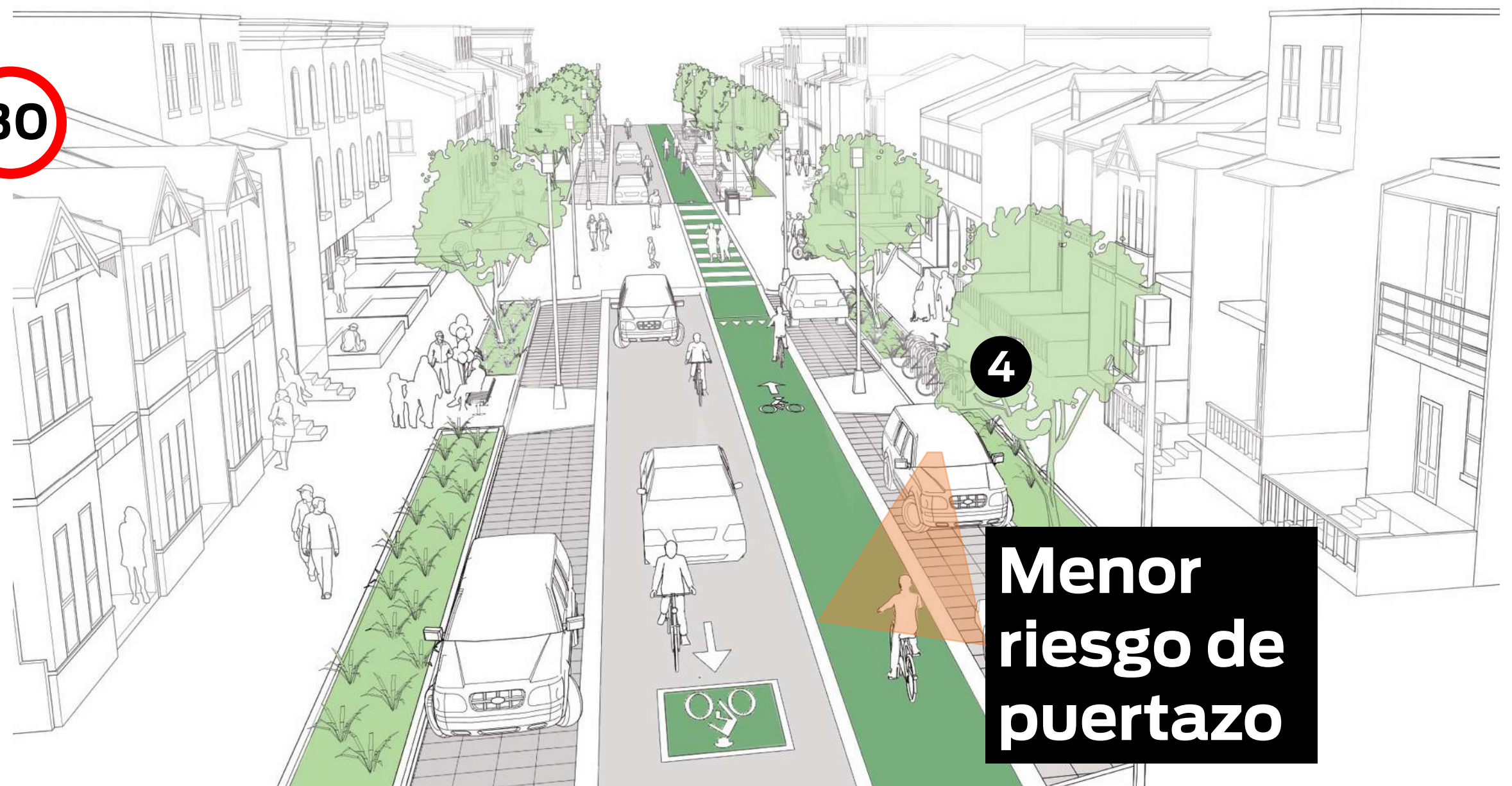
Pacificación del Tránsito



Calles

Ciclo-calle con Contraflujo

30



4

**Menor
riesgo de
puertazo**

Ejemplo: Chicago

Ciclo-calle con Contraflujo



**Carril
vehicular
estrecho**

**Pacificación
del Tránsito**

**Ciclovia
amplia**

Ejemplo: Boston

Ciclo-calle con Contraflujo



**Contraflujo
pintado**

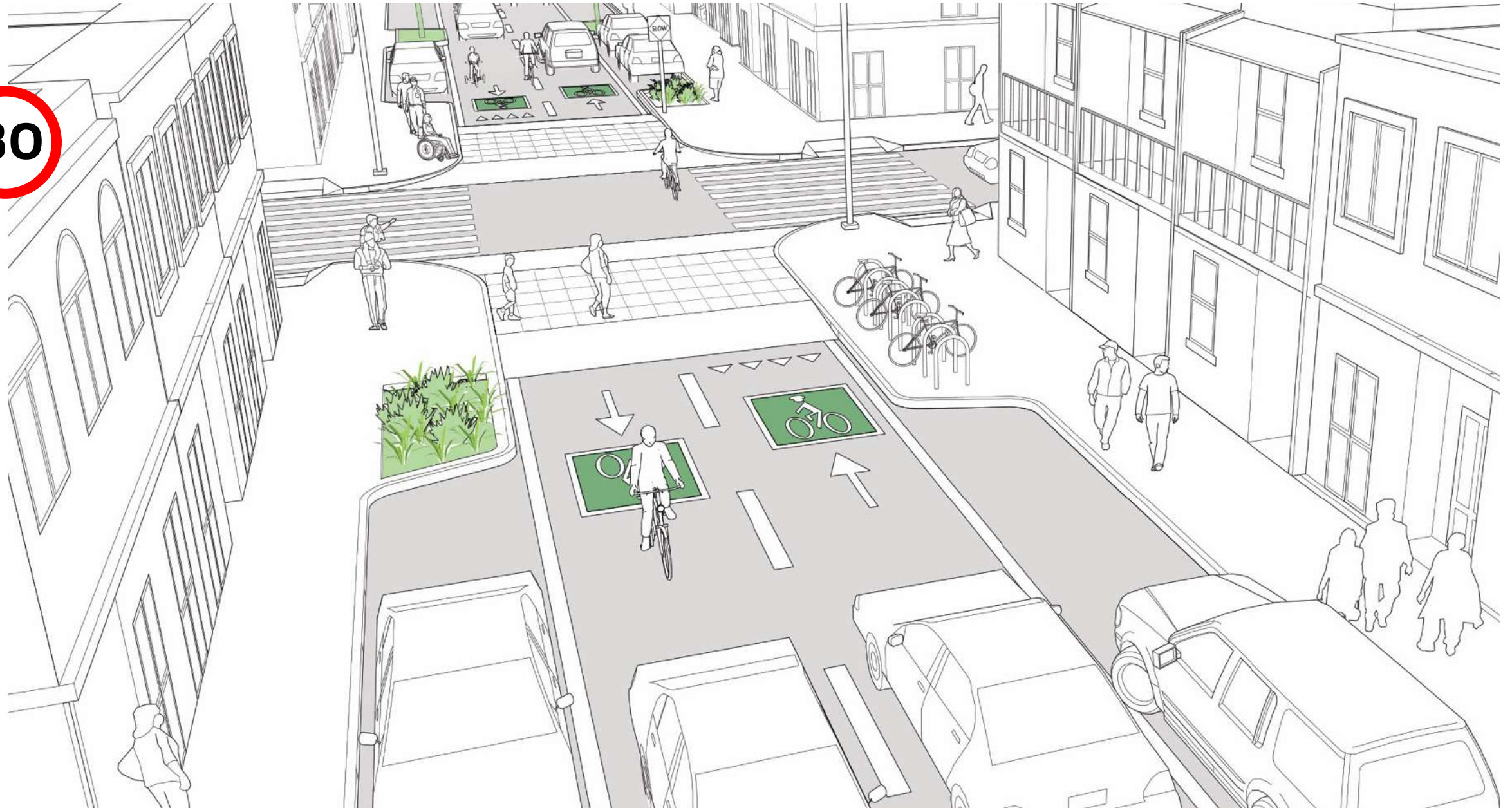
**Con
accesos
demarcados**

**Ciclovía
amplia**

Infraestructura Ciclista

Calle Ciclista

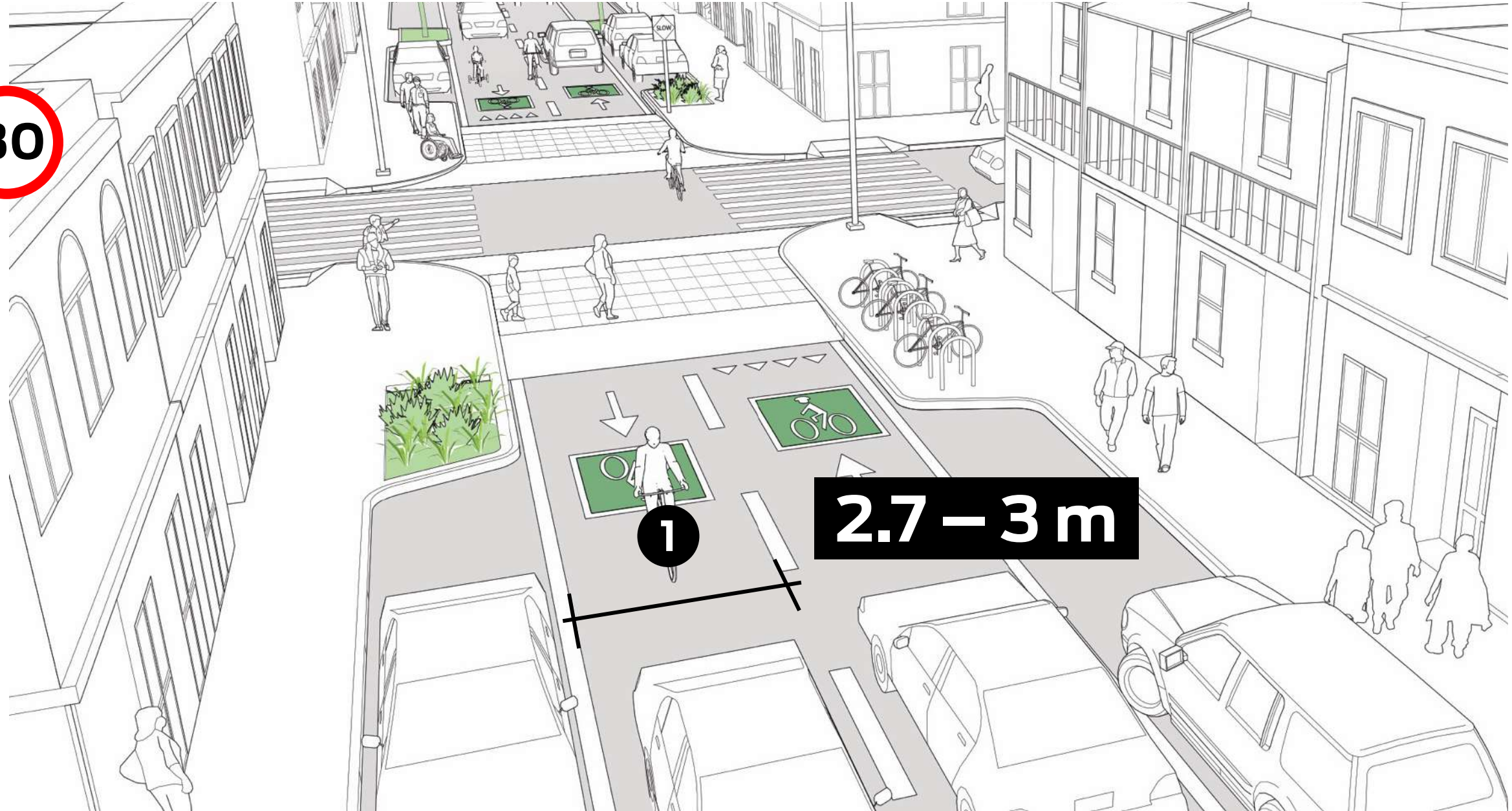
30



Infraestructura Ciclista

Calle Ciclista

30



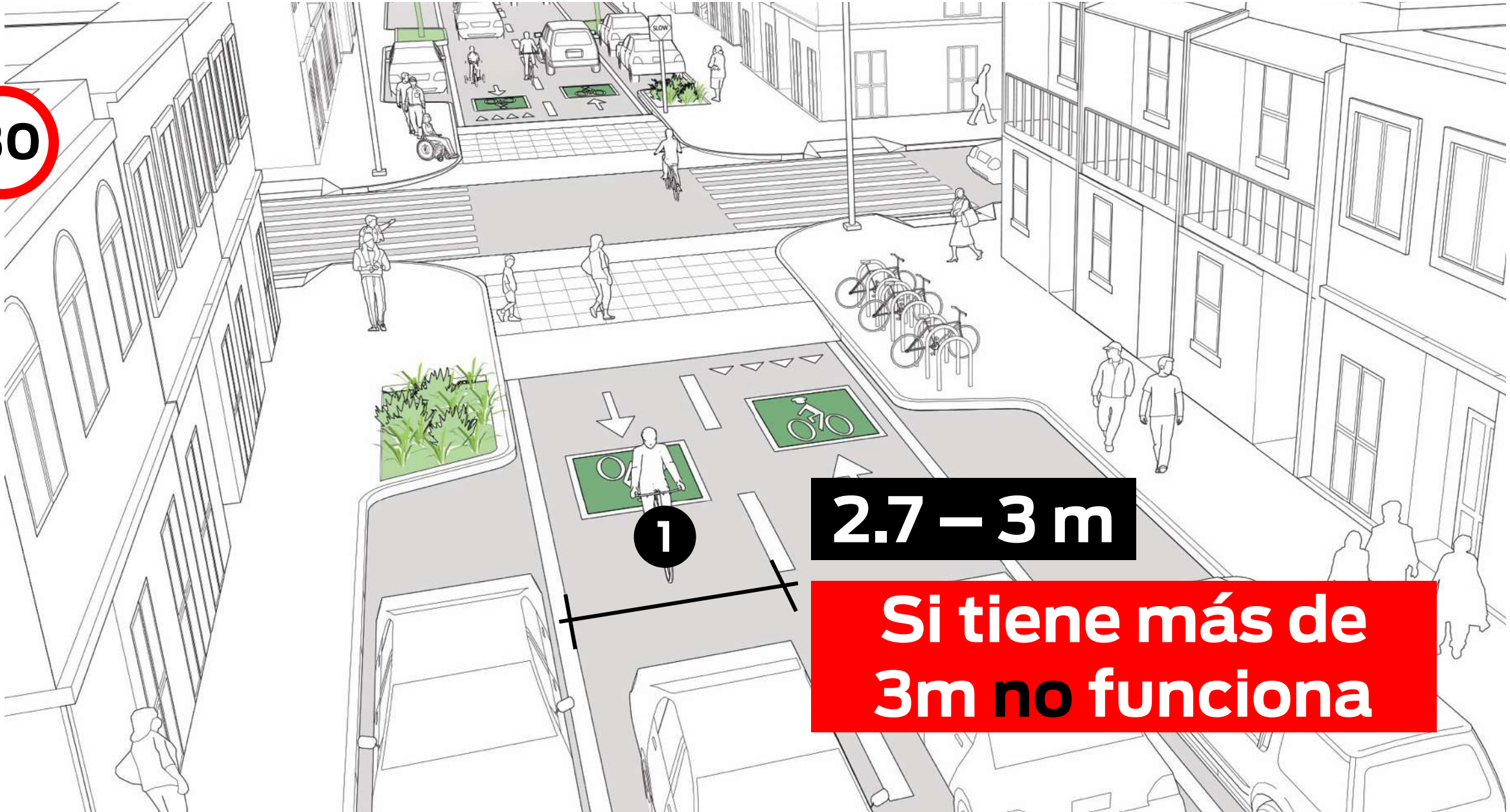
2.7 - 3 m

1

Infraestructura Ciclista

Calle Ciclista

30



2.7 – 3 m

Si tiene más de 3m no funciona

1

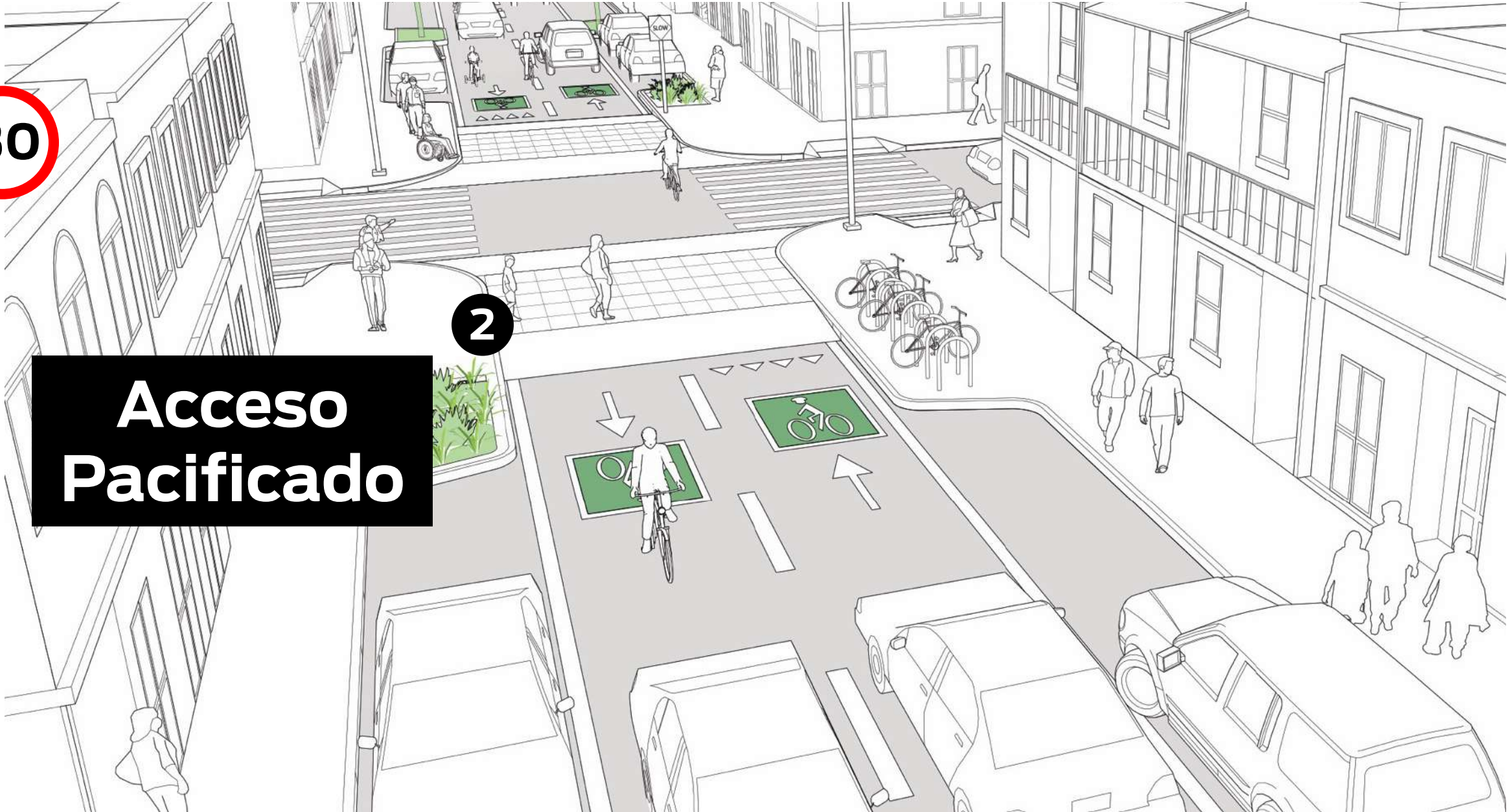
Infraestructura Ciclista

Calle Ciclista

30

2

Acceso Pacificado



Infraestructura Ciclista

Calle Ciclista



Infraestructura Ciclista

Calle Ciclista



Planeando

la Red

Adopción de múltiples estrategias:

- **Una combinación de tratamientos seguros, dedicados y protegidos.**
- **Medidas de pacificación del Tránsito.**
 - Zonas de baja velocidad
 - Entorno de escuelas
 - Áreas compartidas
- **Gestión del Tránsito.**
 - Permeabilidad selectiva
 - Áreas libres de autos
 - Ciclovías en contraflujo
 - Desviadores permeables

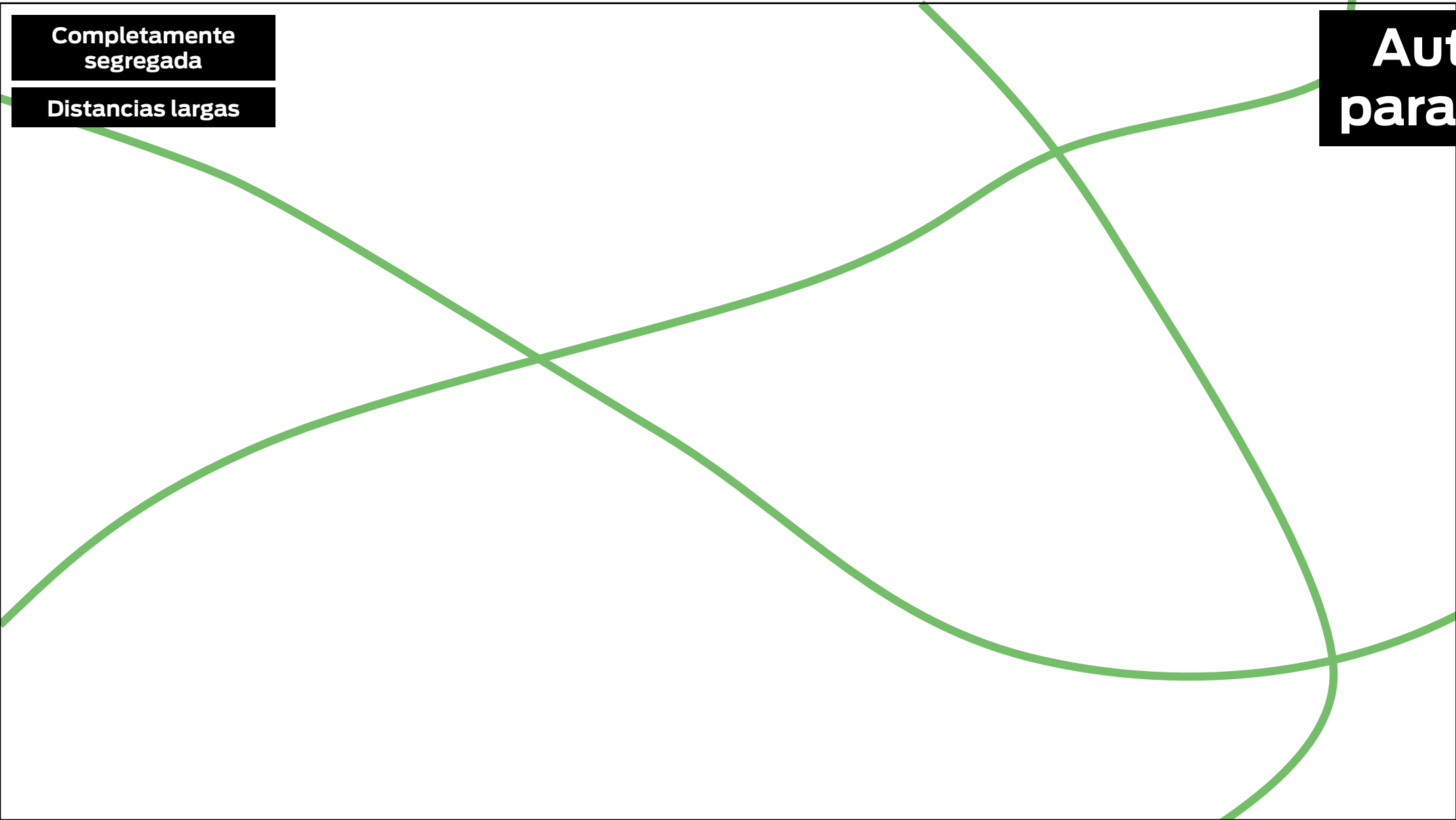
Planeando la Red

Mapa Básico de la Red (Regional)

Completamente
segregada

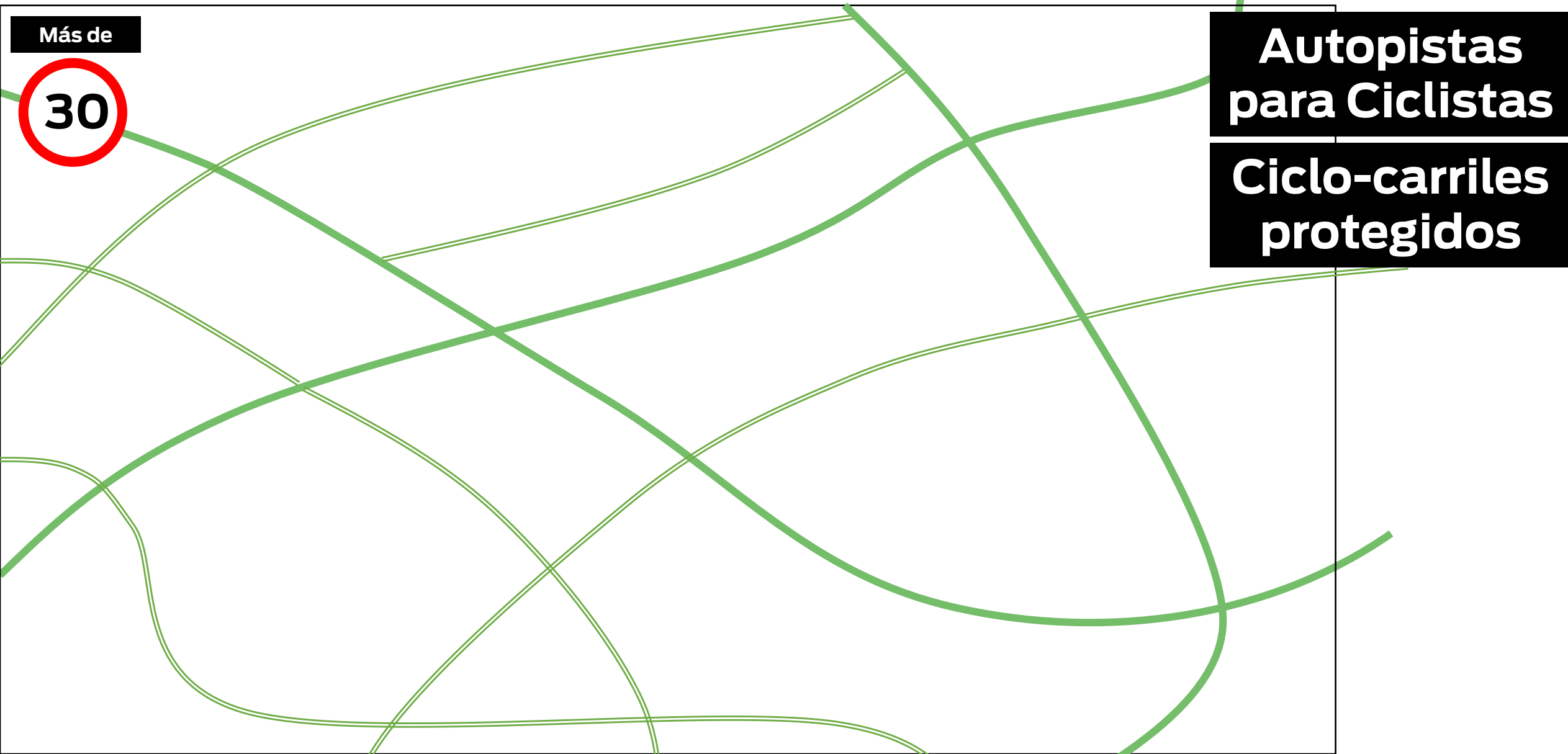
Distancias largas

**Autopistas
para Ciclistas**



Planeando la Red

Mapa Básico de la Red (Regional)



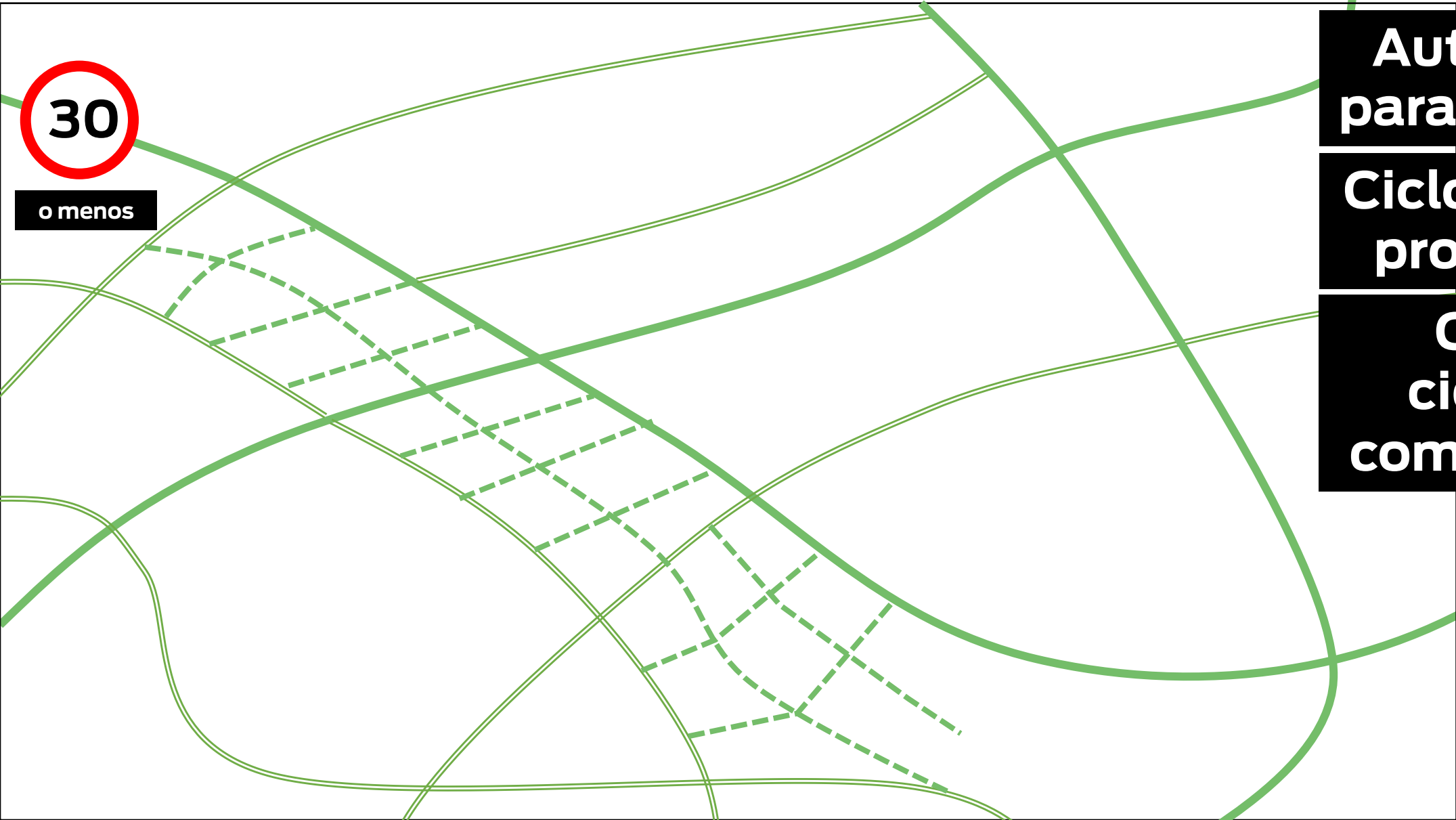
Planeando la Red

Mapa Básico de la Red (Regional)

30

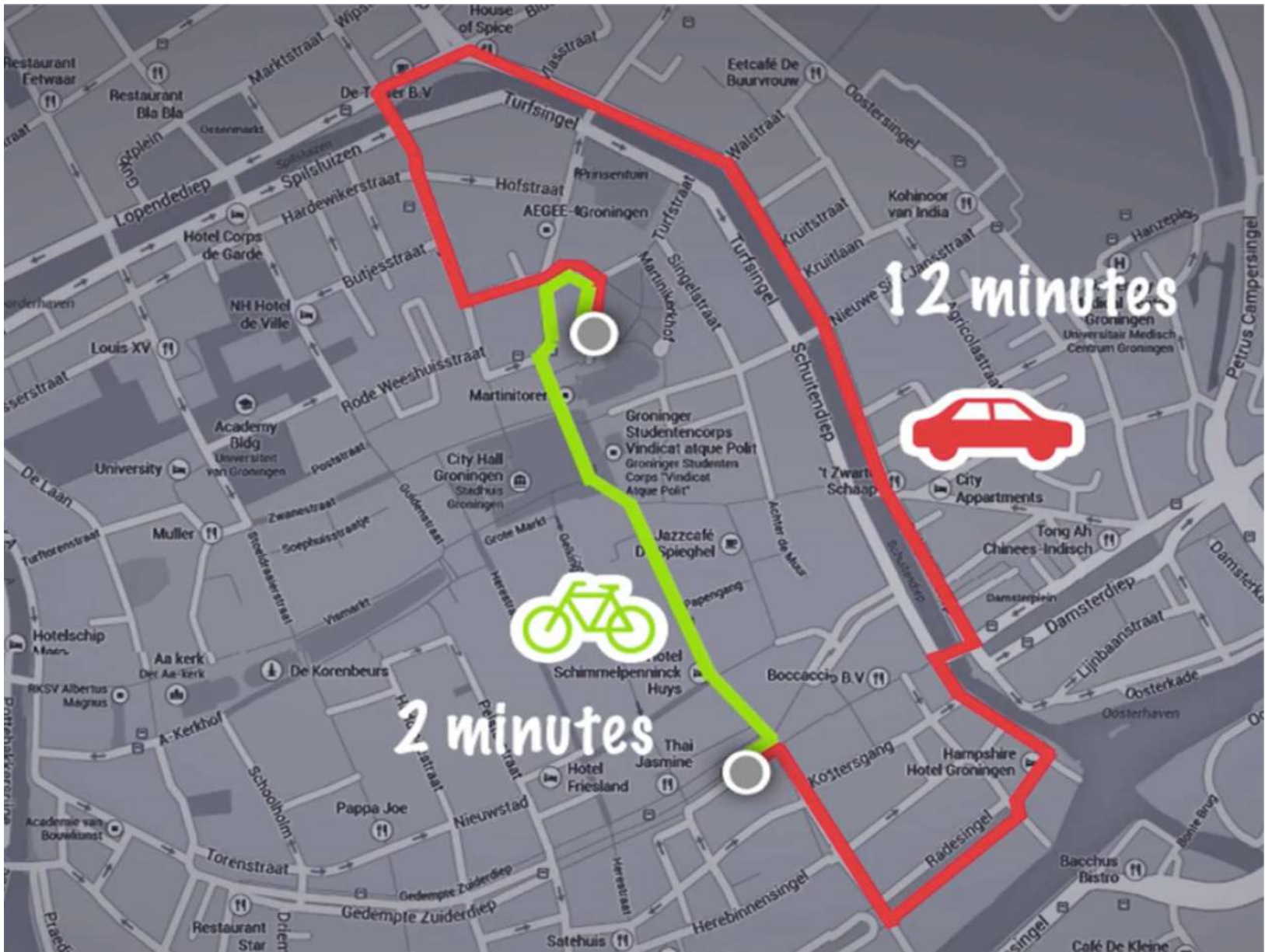
o menos

- Autopistas para Ciclistas**
- Ciclo-carriles protegidos**
- Calles ciclistas compartidas**



Filtered permeability

El caso de Groningen (1977)



Filtered permeability

Cierre completo



Stockholm, Sweden

Filtered permeability

Cierre parcial



Copenhagen, Dinamarca

Filtered permeability

Cierre parcial



Filtered permeability

Giro forzato



Filtered permeability

Contraflujos



Elementos de la Infraestructura Ciclista

Estacionamiento para Ciclistas



Ciclovía



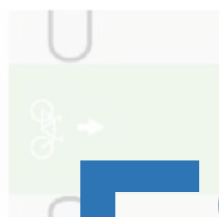
Amortiguamiento Demarcado



Amortiguamiento Construido



Separadores de Concreto



Desviadores de Tránsito Motorizado



Alcance y Señalización de Pareo o Caja Ciclista

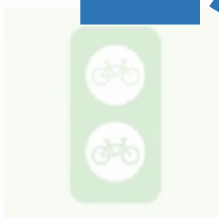


Caja Ciclista de Giro en Dos Etapas



Isla de Refugio Ciclista en Esquina

ESTACIONAMIENTO!!!



Semáforo para Ciclistas



Señalización y sistemas de orientación geográfica



Cicloestaciones



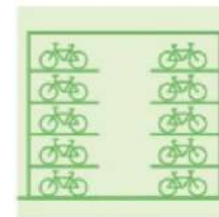
Paso Ciclista a desnivel



Anclaje para Bicicletas



Bicicletero



Cicloestacionamiento

Elementos de la Infraestructura Ciclista

Ciclo-parqueaderos



<https://media.treehugger.com>

Elementos de la Infraestructura Ciclista

Anclaje para bicicletas y ciclistas

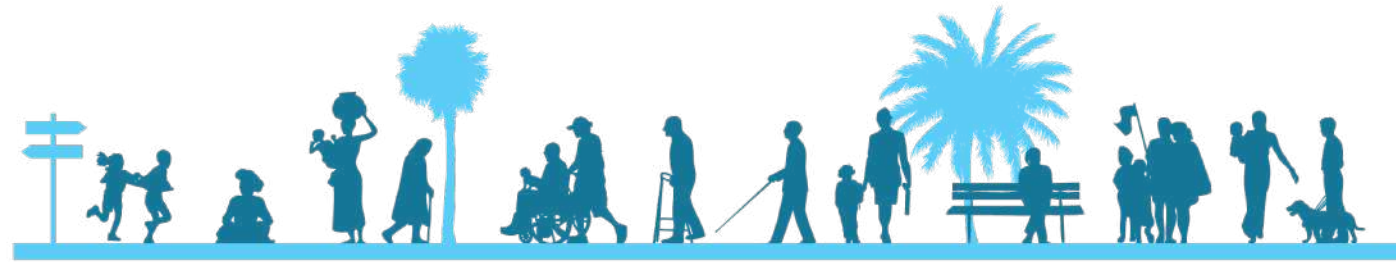


Elementos de la Infraestructura Ciclista

Anclaje para bicicletas y ciclistas



Diseñamos calles que den prioridad a las personas



iGracias!

www.globaldesigningcities.org

Fabrizio Prati

fabrizio@nacto.org



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Global



Street



Design



Guide



Global Designing Cities Initiative