Going Dutch
Translating Dutch Cycling Ideas to an American Context

July 28, 2020
Housekeeping

⇒ Submit your questions
⇒ Webinar archive: www.pedbikeinfo.org/webinars
⇒ Certificates and professional development hours
⇒ Follow-up email later today
Opening Remarks

Ambassador André Haspels
Kingdom of the Netherlands
Bill Nesper
League of American Bicyclists
bikeleague.org
Going Dutch: Translating Dutch Cycling Ideas to an American Context

Chris Bruntlett – MarCom Manager
Dutch Cycling Embassy
July 28th, 2020
Do you want more cyclists in your city?

No need to reinvent the wheel. The Dutch Cycling Embassy can help. We represent the best of Dutch Cycling. Share your cycling challenge with us, and use the knowledge and expertise that our network has to offer.

Whether your goals involve research, planning, policymaking, product development, manufacturing, construction or building, we can find the best possible partner for you from our network of private companies and consultants, NGOs, research institutions, local and national governments.

- A public-private network for sustainable, bicycle inclusive mobility.
- An intermediary between the demand for Dutch cycling expertise and parties that can deliver.
- 70+ partner organizations.

Experience the Dutch cycling culture first hand
Think about best possible solutions and achievable results
Act by applying these solutions to your local context
Learn more about effective policies and best practices
PEDALING THROUGH PANDEMIC
CRISIS AS A TURNING POINT
DON’T BE AFRAID TO EXPERIMENT 😊😊
Requirement 1: Cohesion

- "You can cycle from anywhere to everywhere"
  - Network approach
  - All branches are accessible and connected
  - A cohesive whole

- Grid size (300-500m)
  - Avoids detours
  - Avoids too many crossings

- Cohesion with other networks
  - Public transport: in NL 40% of train users uses their bicycle as access mode
  - Park and bike facilities

➔ Start with a link, plan for a network!
Requirement 2: Directness

- Fast
- Less physical effort
- Competitive alternative

“Minimising detours”

Requirement 3: Safety

(Traffic) Health:
- Ensuring minimal pollution due to emissions and noise
- Ensuring minimal stress level
- Health benefits of cycling

Road safety:
- Segregating vehicle types
- Avoiding conflicts with intersecting traffic
- Reducing speeds at points of conflicts

Requirement 4: Comfort

- Avoiding traffic nuisance
- Avoiding or limiting stops
- Optimizing wayfinding
- Comprehensibility
- Even road surface enjoyable to ride on
- Limiting amount of turning (directness)

Requirement 5: Attractiveness

- VERY PERSONAL but....
- Lively areas
- Variety and surprise
- Well-maintained public space
- Activities along the route
- Connections are lit
- Environmental opportunities

- Experience!
- Marketing
EVERY BIKE PLAN NEEDS A CAR PLAN
EXTEND RANGE WITH E-BIKES
USE CYCLING TO FEED TRANSIT
PEDALING TOWARDS EQUITY
FHWA Resources for Bicycle Facility Design and Planning

Darren Buck, Ped & Bike Program Coordinator
FHWA Office of Human Environment
Planning and Designing Bicycle Facilities for All Ages and Abilities

Bicycle Network Planning & Facility Design Approaches in the Netherlands and the United States

FHWA Global Benchmarking Program

Available at https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/network_planning_design/
New NHI Bicycle Facility Design Web Training (course #142080)

Bicycle Planning Principles

Safety

Comfort

Connectivity

Available at https://www.nhi.fhwa.dot.gov/course-search?tab=0&key=bicycle&sf=0&course_no=142080
Recent FHWA Pedestrian and Bicycle Resources

Available at www.fhwa.dot.gov/environment/bicycle_pedestrian
Four Step Design Process

1. Establish Directional and Width Criteria
2. Select Forms of Separation
3. Identify Midblock Design Challenges and Solutions
4. Develop Intersection Design

Available at www.fhwa.dot.gov/environment/bicycle_pedestrian
Subject: **GUIDANCE**: Bicycle and Pedestrian Facility Design Flexibility  Date: August 20, 2013

From: Gloria M. Shepherd  
Associate Administrator for Planning, Environment and Realty

Walter C. (Butch) Waidelich, Jr.  
Associate Administrator for Infrastructure

Jeffrey A. Lindley  
Associate Administrator for Operations

Tony T. Furst  
Associate Administrator for Safety

To: Division Administrators

cc: Directors of Field Services

This memorandum expresses the Federal Highway Administration’s (FHWA) support for taking a flexible approach to bicycle and pedestrian facility design. The American Association of State Highway and Transportation Officials (AASHTO) bicycle and pedestrian design guides are the primary national resources for planning, designing, and operating bicycle and pedestrian facilities. The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide* and the Institute of Transportation Engineers (ITE) *Designing Urban Walkable Thoroughfares* guide builds upon the flexibilities provided in the AASHTO guides, which can help communities plan and design safe and convenient facilities for pedestrian and bicyclists. FHWA supports the use of these resources to further develop nonmotorized transportation networks, particularly in urban areas.

Available at [https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_flexibility.pdf](https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_flexibility.pdf)
Bikeway Selection Guide

- Help practitioners make informed decisions about tradeoffs relating to the selection of bikeway types.
- Highlight linkages between the bikeway selection process and the transportation planning process.
- Emphasizes engineering judgment, design flexibility, documentation, and experimentation.

Available at https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf
Bikeway Selection Process

- Policy
- Planning
- Selection
- Design
Bicycle and Pedestrian Network Resources

There are several resources available to FHWA’s planning partners that provide information on bicycle and pedestrian network development. They include:

- Guidebook for Measuring Multimodal Network Connectivity
- Small Town and Rural Multimodal Networks
- Achieving Multimodal Networks: Applying Design Flexibility & Reducing Conflicts

Available to download at http://www fhwa dot gov/environment/bicycle _pedestrian/
**MAP BASICS**
Common approaches for bicycle infrastructure planning maps are highlighted below. The maps that follow demonstrate these general approaches to varying degrees.

1. **COMMON INFORMATION LAYERS**
   - **BIKE NETWORK LAYERS**
     - Specific Facility Types
       - Bike path, bike lane, buffered bike lane, bike boulevard, separated bike lane, greenway, etc.
     - Flexible Facility Types
       - On-street vs. off-street bikeway systems
   - **LOCAL CONTEXT LAYERS**
     - Transit lines & stations
     - Bikeshare stations
     - Community amenities: Schools, universities, libraries, community centers, hospitals, etc.
     - Building footprints
     - Specific land use functions, such as commercial uses
     - Study areas or corridors
   - **BASE LAYERS**
     - Parks & open space
     - Streets
     - Waterbodies
     - City boundaries
     - Labels

2. **REPRESENTING DIFFERENT TYPES OF INFORMATION**
   - **PROPOSED VS. EXISTING NETWORK**
     - Identify ways to clearly denote what is existing and what is being proposed.
   - **COLOR SCHEME**
     - Consider how color will play a role in highlighting the bicycle network. Light, saturated colors stand out against softer and more subdued colors.
   - **LEVEL OF INFORMATION**
     - Carefully consider the amount of information used to tell the story. More information can help, but it can also be overwhelming if not used appropriately.

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**HENNEPIN COUNTY, MN**

**LOCATION**
HENNEPIN COUNTY, MN

**YEAR**
2023

**PUBLICATION**
HENNEPIN COUNTY BIKE PLAN

**RESPONSIBLE AGENCY**
HENNEPIN COUNTY

**KEY MAP FEATURES**
- [Legend image]
- [Map image]

Multimodal Network Planning Pilot Projects

- Using variety of network measurement tools (including Level of Traffic Stress)
- New data sources (including Streetlight, Sidewalk Labs)
- Variety of contexts (arterial corridors all the way to statewide)
- Answering different questions (safety, planning, project prioritization)
Multimodal Network Planning Pilot Locations

- MetroPlan Orlando, FL
- Mid-America Regional Council, MO-KS
- New Hampshire MPOs
- Eastgate Regional Council of Governments, OH
- Corvallis and Albany MPOs, OR
- Houston-Galveston Area Council, TX
- Utah DOT/Wasatch Front Regional Council/Mountainland Association of Governments
- Washington State DOT
Thinkbike overview

- Workshops in a variety of US cities since 2010
- Focus on Dutch design standards, network planning, and forecasting
- Includes local practitioners, community members, Dutch experts, FHWA
Pedbikeinfo.org

PBIC Info Briefs on Micromobility
Provide typology and framework for integrating devices into transportation systems and scan of practices in nine

FHWA Pedestrian and Bicycle Transportation University Course
Helps instructors inspire the next generation of
Contacts

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FHWA Division Office Pedestrian and Bicycle Points of Contact
www.fhwa.dot.gov/environment/bicycle_pedestrian/state_fhwa_contacts

State DOT Pedestrian and Bicycle Coordinators
https://www.fhwa.dot.gov/environment/bicycle_pedestrian/state_contacts

For More Information:
www.fhwa.dot.gov/environment/bicycle_pedestrian
How the Dutch Left Their Mark in Austin
Four Types of Cyclists
Roger Geller, Bicycle Coordinator
Portland Office of Transportation

Despite all the considerable advances Portland and the region have made in facilitating bicycling, concerns about the safety of bicycling still loom large. Riding a bicycle should not require bravery. Yet, all too often, that is the perception among cyclists and non-cyclists alike. No person should have to be “brave” to ride a bicycle; unfortunately, this is a sentiment commonly expressed to those who regularly ride bicycles by those who do.

Four Types of Transportation Cyclists in Portland
By Proportion of Population

- Interested but Concerned: 60%
- No Way No How: 33%
- Strong & Fearless: <1%
- Enthusiastic & Confident: 7%
3rd Street Color – Green or Dutch?
2012
Green Lane Project
First Netherlands Study Tour
2012 Think Bike
2012 Think Bike

"Capture Short Trips by Bicycle"

<table>
<thead>
<tr>
<th>Distance Range</th>
<th>Walking</th>
<th>Bicycle</th>
<th>Car</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 0.3 mi.</td>
<td>10%</td>
<td>20%</td>
<td>80%</td>
</tr>
<tr>
<td>0.3 to 0.6 mi.</td>
<td>20%</td>
<td>30%</td>
<td>70%</td>
</tr>
<tr>
<td>0.6 to 1.6 mi.</td>
<td>30%</td>
<td>40%</td>
<td>60%</td>
</tr>
<tr>
<td>1.6 to 2 mi.</td>
<td>40%</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>2 to 3 mi.</td>
<td>50%</td>
<td>60%</td>
<td>40%</td>
</tr>
<tr>
<td>3 to 5 mi.</td>
<td>60%</td>
<td>70%</td>
<td>30%</td>
</tr>
<tr>
<td>5 to 6 mi.</td>
<td>70%</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>6 to 9 mi.</td>
<td>80%</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>9 to 12 mi.</td>
<td>90%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>12 to 19 mi.</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 to 25 mi.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25 to 31 mi.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31+ mi.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Attainable Bicycle Short Trip Target
15% of Trips Less than 3 Miles &
7% of Trips Less than 9 Miles
2012 Think Bike

“Invest where the short trips are”

Spider Diagram of Short Car-Trips (0-3 mile)
2012 Think Bike

“You can’t plan for bikes without planning for all modes”
2012 Think Bike

“You can’t plan for bikes without planning for all modes”
2012 Think Bike

“Feed Transit with Bikes”

Austin’s Lakeline Commuter Rail Station
Neighborhoods in easy bicycling distance to transit station
2014 Bicycle Plan

A Shift in Focus:

“To Create and Promote the best environment for the friendly co-existence of bicycle riders and other transportation users in Austin”

“To maximize the contribution of bicycling to Austin’s quality of life”
Creating a Network:

<table>
<thead>
<tr>
<th>On-Street</th>
<th>Off-Street</th>
<th>Complete Network</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cycle Tracks</td>
<td>Intersection Treatments</td>
<td>All Ages and Abilities Network</td>
</tr>
<tr>
<td>Quiet Streets</td>
<td>Urban Trails</td>
<td></td>
</tr>
</tbody>
</table>

The 8 to 80 Test:

An *8 year old* traveling with an *80 year old* should be able to traverse the city comfortable and safely.
2014 Bicycle Plan
Austin’s
Short Trip
Travel Demand
2014 Bicycle Plan
Austin’s
Short Trip
Travel Demand

Heat map of short trip concentration
Focus on where short trips exist

- The central city
- To major transit stations
- Key feeder routes to the central city

2014 Bicycle Plan
The All Ages and Abilities Bicycle Network
Seville's incredible increase in bicycle mode share was as a result of an 87 mile network of protected bicycle facilities implemented over 3 years.

Austin has the opportunity to implement a similar network.
2014 Bicycle Plan
The Cost Benefit [traffic] Case for the Network

Mobility Cost / Benefit

Lower Value

Higher Value

Project Cost (Millions)

Additional daily vehicle capacity to Central Business District and University of Texas

Mopac Improvement Project

'All Ages and Abilities Bicycle Network'

Isometric Cost Benefit
2014 Bicycle Plan
Quantifying the Benefits

BENEFITS TO MOBILITY, ENVIRONMENT, AFFORDABILITY, HEALTH

- 170,000 fewer daily trips
- 460,000 reduction in vehicle miles traveled
- 84,000 metric ton reduction of carbon per year
- $170 million saved in direct driving costs annually
- 15% of Austinites meet daily physical activity
- Reduced congestion on I35
2016 Mobility Bond

2016 MOBILITY BOND [ BOND FUNDING BREAKDOWN ]

- Corridor Mobility: $482 M
- Regional Mobility: $101 M
- Local Mobility: $137 M
- 2016 Bond: $720 million

- Sidewalks: $37.5 M
- Safe routes to school: $27.5 M
- Urban trails: $26 M
- Bikeways: $20 M
- Intersection safety/ vision zero: $15 M
- Substandard streets/ capital renewal: $11 M

2016 BOND LOCAL MOBILITY $137 million

Bicycle and Urban Trail Specific Bond Funding by Year

- Cumulative
- Current

Bond Year


Bond Funds (Millions)

$- $10.0 $15.0 $20.0 $25.0 $30.0 $35.0 $40.0 $45.0 $50.0
2018 Delegation to the Netherlands

• Large delegation of leadership and technical staff
• Major shifts in leadership
• In 2018 we choose the Netherlands over Seville to work with the end in mind
• A street designer’s perspective...
Design Fluidity & Try and Refine
Where we are
and where we are headed...
Cohesion
Directness
Safety
Comfort
Attractiveness

“Get Used to Spending More Money on Bikes”
2020
All Ages and Abilities
Network Buildout Goal
2010
Austin’s
All Ages and Abilities Bicycle Network
2012
Austin’s
All Ages and Abilities Bicycle Network
2014
Austin’s
All Ages and Abilities
Bicycle Network
2016
Austin’s
All Ages and Abilities Bicycle Network
2018
Austin’s
All Ages and Abilities Bicycle Network
2020
Austin’s
All Ages and Abilities Bicycle Network
2022
Austin’s
All Ages and Abilities Bicycle Network
2024
Austin’s
All Ages and Abilities Bicycle Network
2026
Austin’s
All Ages and Abilities Bicycle Network
2026
Austin’s
All Ages and Abilities Bicycle Network

Amsterdam Bicycle Network
New Amsterdam Bicycle Network

Maps are same scale
2025 AAA Network Buildout Goal

Progress Towards 2020 and 2025 Bicycle Network Buildout Goals

- **2025 Target**: 80% Network Buildout, 331 Miles
- **2020 Target**: 50% Network Buildout, 207 Miles
- Current: 35%

Estimated Mileage Remaining by 2020 End: 12.7

Legend:
- Green: Completed
- Light Green: Estimated End Date (In Design)
- Purple: Estimated Public Meeting Date
- Pink: Estimated Start of Project Development
- Dashed Line: 2014 Bike Plan AAA Network Mileage Goal
Will Handsfield

District Department of Transportation
The Dutch Planning Approach
G Street NW & Virginia Ave NW
Bicycle Infrastructure Projects
Tuesday, July 28th, 2020
Will Handsfield
DDOT Bicycle Planner
Agenda

• Planning Background

• Dutch Bike Workshop themes

• Network Plan

• G Street Cycletrack Plan – Summer 2020

• Upcoming Projects
  • Virginia Ave NW Summer 2021
  • 20th/21st Street Fall 2020
  • Pennsylvania Avenue Fall 2021
Goals for Cycling in Washington D.C.

- **Individual Benefits**
  - Reduced transportation costs
  - Exercise and health

- **Economic Development**
  - Tourism
  - Increases foot traffic/local spending

- **Environmental Benefits**
  - Reduced CO$_2$ emissions

- **System Management Benefits**
  - Reduced wear and tear
  - Fewer cars on road

- **Network**
  - Interconnected network is necessary to support cycling

- **Resiliency**
  - Bikes keep people & goods moving when other systems fail
Why is DC Installing Bicycle Lanes?

2005 Bicycle Master Plan Goals
• 2000: 1% of commute trips by bike
• 2010: 3% of commute trips by bike
• 2015: 5% of commute trips by bike

Sustainable DC goals (2032)
• 75% of all trips by walk, bike, or transit
• 200 more bike share stations

Vision Zero
• Eliminate Traffic fatalities
• Re-engineer dangerous roads
moveDC Bicycle Plan - 2014
Thinkbike workshop West End district
Washington D.C. – April 2016
Workshop
Overall
Ambition

(remember this image, we’ll see it again)
What is a Protected Bike Lane?

• A protected bike lane is a physically separated space designated for bicycle use
• DC started installing in 2009
• Separation mid-block by vertical posts or curb
• No separation at intersections
  • Conflicts minimized through:
    • Signalization
    • Traffic control (yielding)
• Bus boarding conflicts
  • Starting to address w/raised platforms
Why Protected Lanes?

**BICYCLIST DESIGN USER PROFILES**

**Interested but Concerned**
- 51%-56% of the total population
- Often not comfortable with bike lanes, may bike on sidewalks even if bike lanes are provided, prefer off-street or separated bicycle facilities or quiet or traffic-calmed residential roads. May not bike at all if bicycle facilities do not meet needs for perceived comfort.

**Somewhat Confident**
- 5-9% of the total population
- Generally prefer more separated facilities, but are comfortable riding in bicycle lanes or on paved shoulders if need be.

**Highly Confident**
- 4-7% of the total population
- Comfortable riding with traffic, will use roads without bike lanes.
Protected Bike Lanes (PBLs)

Two-way PBL
Also called a “cycletrack”
Project Background

Existing facility
Under Construction
Planning Underway
Why Protected Lanes?

• Result in 3x ridership of “regular” bike lanes
• Higher degree of user comfort
• Attracts “interested” riders, appropriate for ages 8 - 80
• With a network children can be more independent on their bicycles
• Eliminates conflicts between bicycles and parking cars
• Provide adequate space and removes the danger of “car dooring”
G St Cycletrack Schedule

- Concept Planning
  - MoveDC (2013-14)
  - ThinkBike (2016)

- Preferred Alternative Analysis
  - Traffic analysis & signal changes (2019)

- Design and Engineering
  - Winter-Spring 2020

- Public Comment Period- 30 days
  - April 2020

- Construction
  - Summer 2020
G St NW Cycletrack
(17th St NW to Virginia Ave NW)
Context Setting

- Traffic
  - 25 MPH speed limit
  - Left turns at 3 intersections
- Parking
  - Currently both sides
- Curbside uses
  - Urban pick-up/drop-off
  - bus boarding (north side)
Network Connectivity
Traffic Changes

- Left turns at 3 intersections must be phased separately
- Slight reduction in level-of-service during PM rush-hour
Intersection Treatments

REMOVE ALL EXISTING R1-6a AND "$250 FINE" SIGNS AND REPLACE WITH MUTCD W11-15 AT ALL CALLED OUT LOCATIONS (W16-7P SIGNS SHALL REMAIN IN PLACE)
Virginia Avenue NW PBL
(Constitution Avenue NW to Rock Creek Parkway)

- A useful route – people already use it!
- Connects trail network to downtown and mall
- Most parts of roadway have excess capacity
Virginia Avenue NW Context

- Rock Creek and Potomac Pkwy
- Watergate Complex (Traffic Circle)
- New Hampshire Ave
- 23rd St NW Underpass
- Food Trucks, vendors, Bus Zones, Layovers, Security Hardscaping

- Constitution Ave

Images:
1. Bicycles parked on the sidewalk.
2. Street view with cars and a bus.
3. Sidewalk with people walking and a bus stop.
Existing Conditions

Alternative A Summary:
- 32 ft roadway width in each direction
- Provides a 10 ft protected bike lane
Alternative A – Center-running

Alternative A Summary:
• Retains curbside access for buses and other services
• Provides a 10 ft protected bike lane
Alternatives Trade-Off Summary

**Alternative A – Center-running**

**Pro**
- Preserves curbside access for buses, vendors, and parking.
- Requires less reduction in travel lanes
- Offers safe comfortable environment for people on bicycles

**Con**
- Requires slower, less convenient turn movements and curb access for people on bicycles.
- Introduces new potential conflict for left turning vehicles
- Requires passage through tunnel under 23rd St NW

**Alternative B – Curbside-running**

**Pro**
- Eases curbside access and turning movement for cyclists.
- Traditional traffic patterns limit conflicts between people biking and driving at intersections
- Offers safe comfortable environment for people on bicycles

**Con**
- Requires greater reduction in travel lanes, parking, and curbside access for food trucks.
- Requires specialized bus transit islands, increasing cost and further reducing travel lanes
- Slip lanes and merges create potential for conflict
Alternative B – Curbside-running

Alternative B Summary:
• Limits curbside access for parking
• Provides a 10 ft protected bike lane
Alternative C Summary:

- Relocates Parking from service lane to through lanes.
- Provides trail-like environment for walking, jogging, and cycling.
Virginia Ave Next Steps

• Preferred Alternatives Design and Engineering
  • Spring/ Summer 2020

• Construction
  • Summer 2021
More Information

Project Websites
https://wiki.ddot.dc.gov/display/BPP/G+Street+NW
https://wiki.ddot.dc.gov/display/BPP/Virginia+Avenue+NW

Contact Information
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G Street NW and 20th and 21st Street Projects
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Virginia Avenue NW Project
Kevin Harrison, DDOT
Kevin.Harrison@dc.gov
Discussion

➔ Send us your questions

➔ Follow up with us:
  ➔ Darren Buck  darren.buck@dot.gov
  ➔ Chris Bruntlett  chris.bruntlett@dutchcycling.nl
  ➔ Bill Nesper  billnesper@bikeleague.org
  ➔ Will Handsfield  William.Handsfield2@dc.gov
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➔ Archive at  www.pedbikeinfo.org/webinars