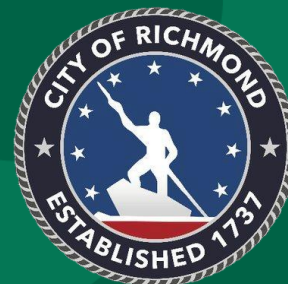




# Guide to Greening Multimodal Buffers

June 17, 2025



  
TIMMONS GROUP



# Premier City Streets



Image source: <https://www.visitcopenhagen.com/>  
<https://www.theguardian.com/>  
<https://www.archdaily.com/971436/paris-to-become-one-of-the-most-bike-friendly-city-in-the-world-by-2026>  
<https://sf.curbed.com/2017/9/19/16330162/cycling-sf-how-to-bikes-guide>  
<https://www.portland.gov/transportation/walking-biking-transit-safety/biking-portland>



# Inspiring & Motivating



# Cycling in Richmond

## » Existing Inventory ~83 mi

- 15.93 mi of conventional lanes
- 32.12 mi of buffered lanes
- 2.39 mi of contraflow lanes
- 1.52 mi of cycle track
- 1.35 mi of bus/bike only lane
- 23.73 mi of sharrows
- 5.34 mi of separated/off-road

## » 100 mi total coming soon!





# What is the Guide?

## » Unique, first-of-its-kind

- Promotes buffer hardening
- Defines range of treatments
- Provides direction on selection
- Encourages consistent approach

## » Team effort



## Guide to Greening Multimodal Buffers



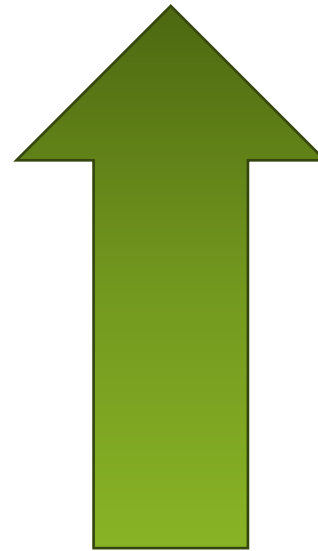
City of Richmond  
April 2025

# Levels of Greening

## » 5 unique levels

- From raised buffer with trees
- To raised buffer with understory planting
- To permeable hardscape
- To concrete curb
- To artistic paint

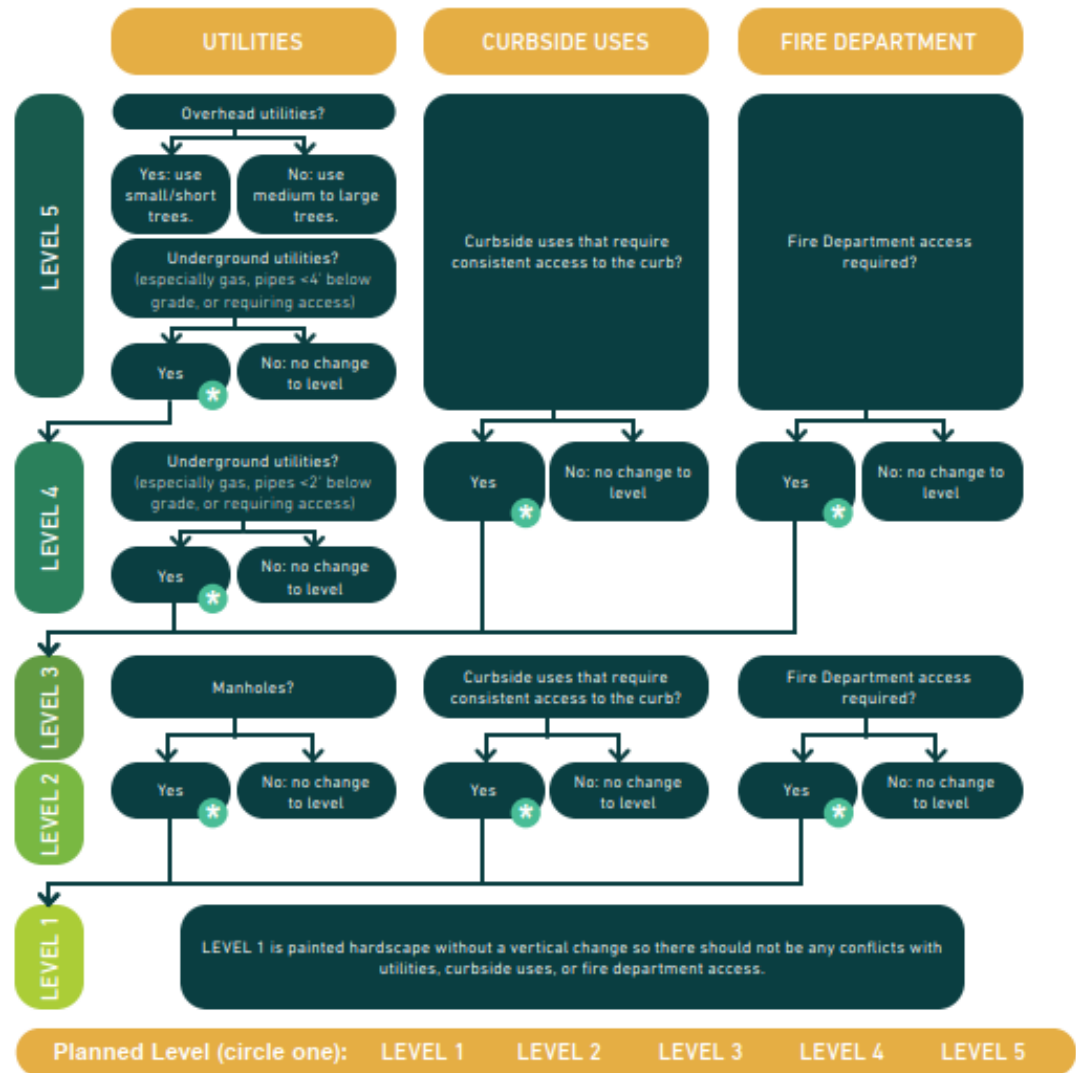
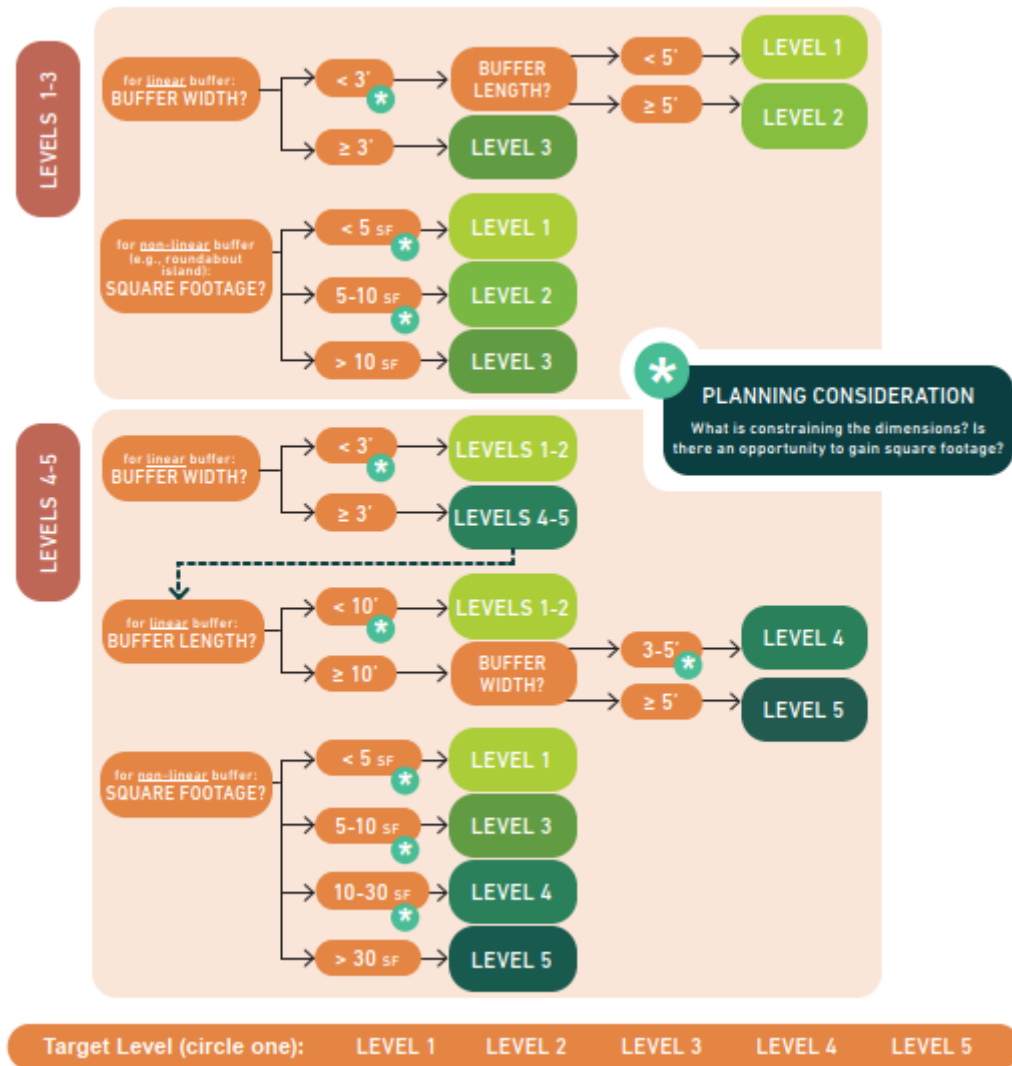
**Level 5**



**Level 1**

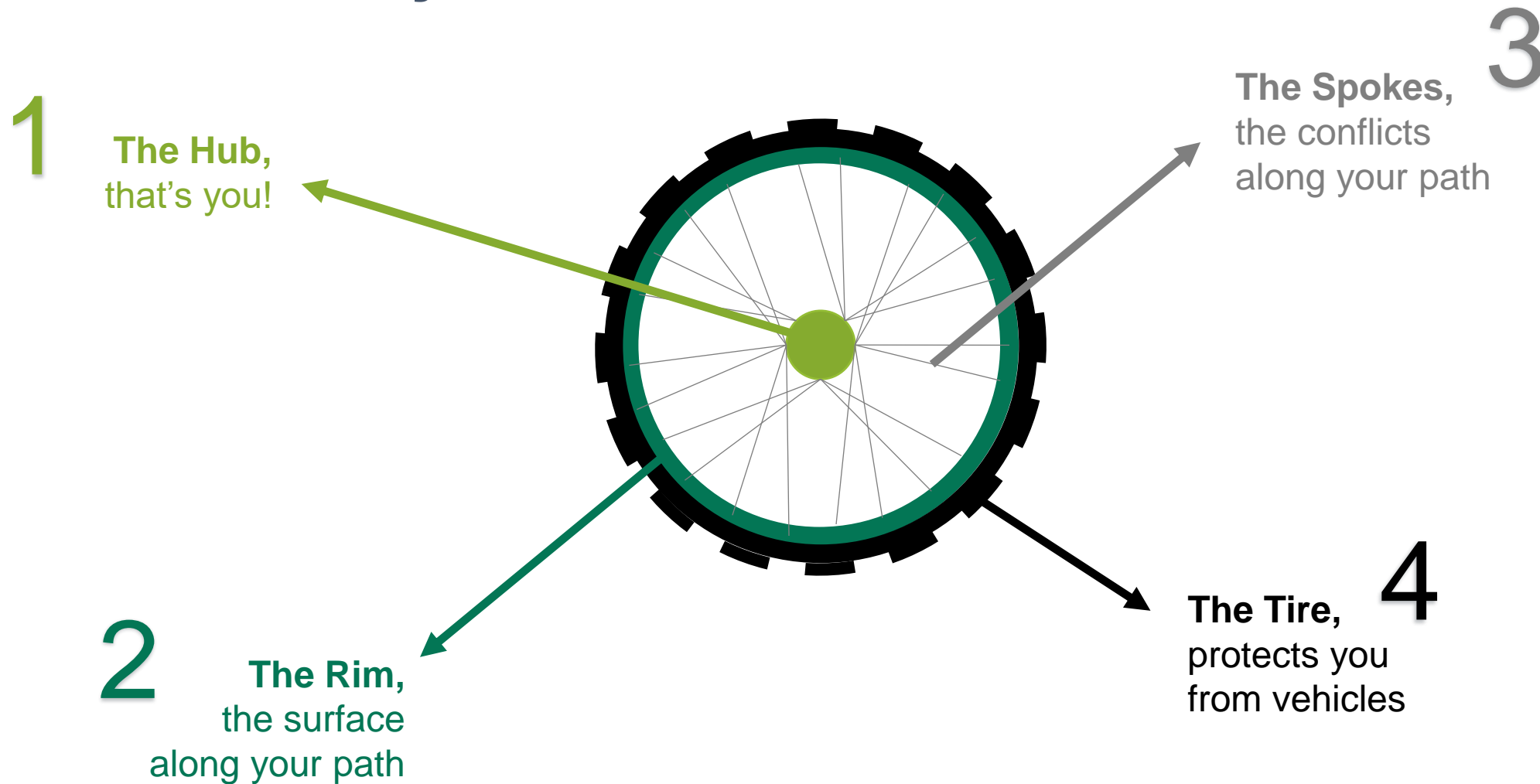


# Decision Trees





# Picture a bicycle wheel...





# Step 1 – Envision the future

The Hub

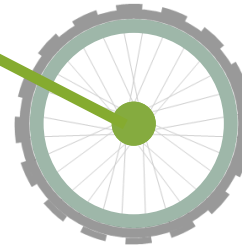
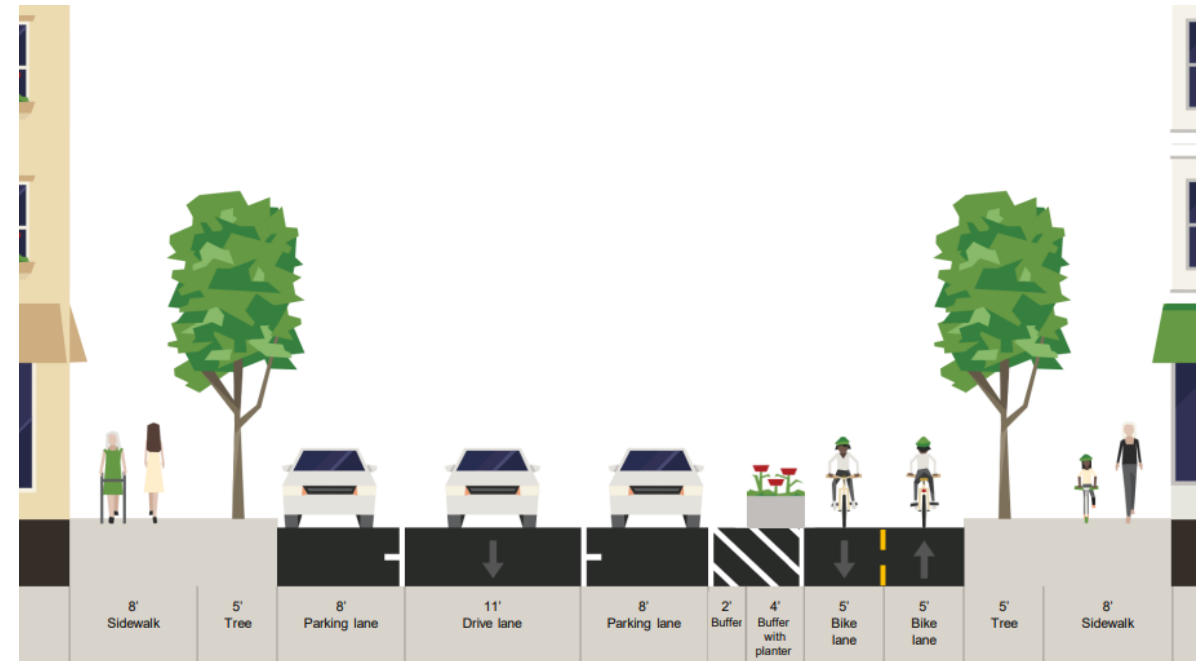
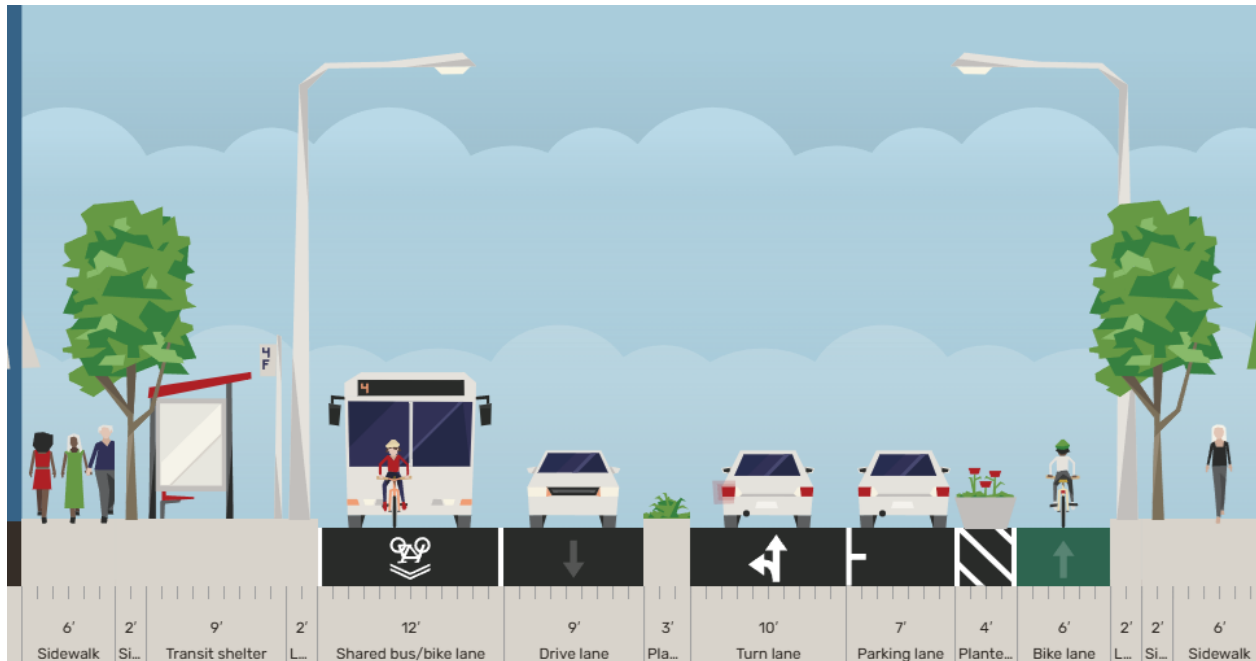
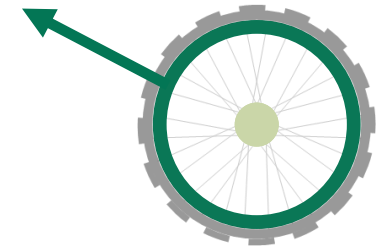


Image source: <https://www.niilswestergard.com/theamsterdamcyclist>  
<https://chi.streetsblog.org/2022/01/10/who-should-we-be-really-building-bikeways-for>

# Step 2 – Identify spatial constraints

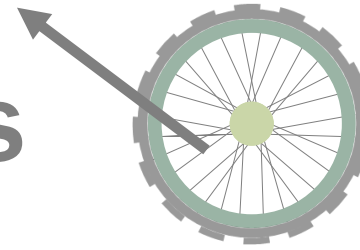
The Rim





# Step 3 – Evaluate conflicts

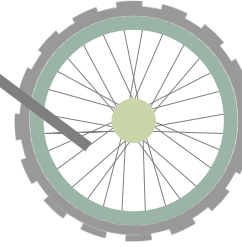
The Spokes





# Step 3 – Evaluate conflicts

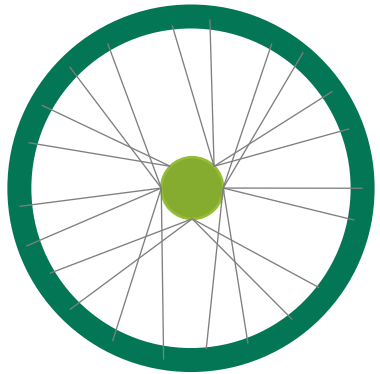
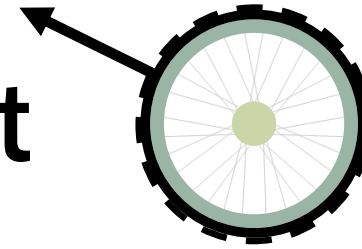
The Spokes



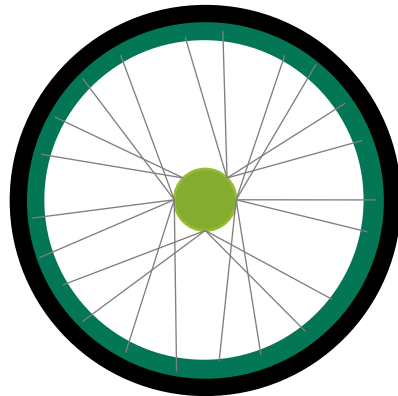


# Step 4 – Enhance your comfort

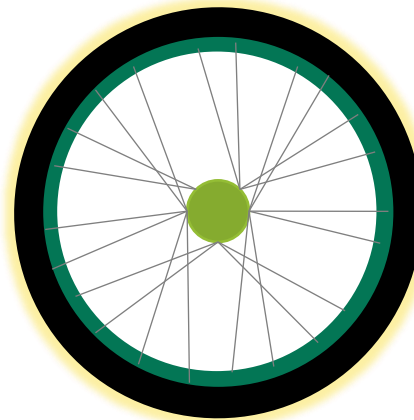
The Tire



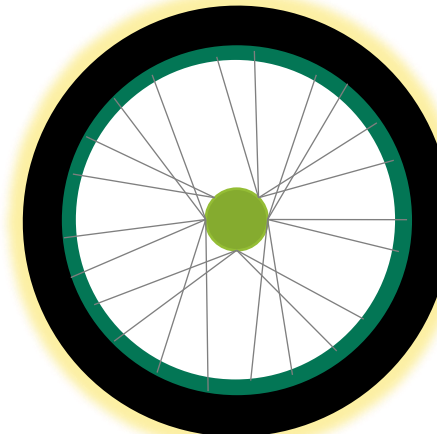
**No Buffer**



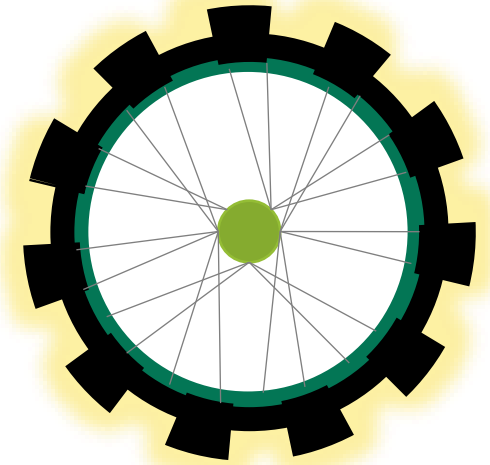
**Striped Buffer**



**Physical Barrier**



**Physical Barrier  
w/ Understory  
Plantings**

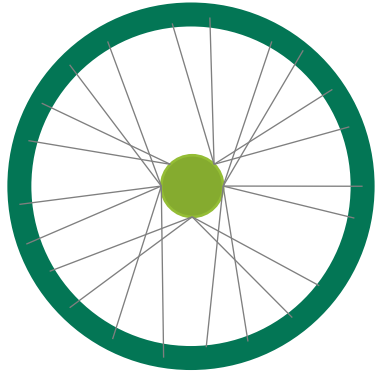
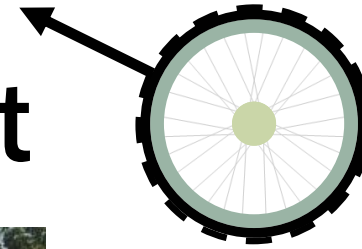


**Physical Barrier  
w/ Street Trees**



# Step 4 – Enhance your comfort

The Tire



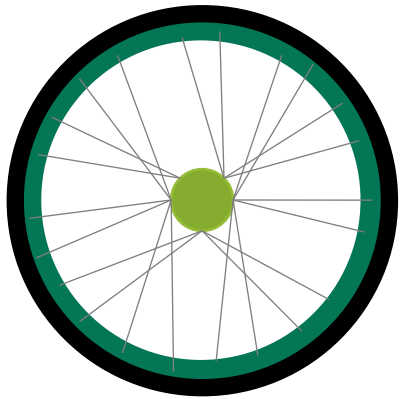
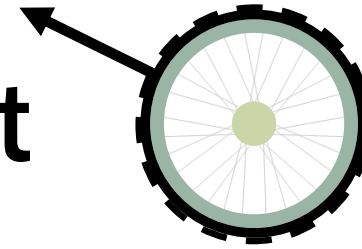
No Buffer





# Step 4 – Enhance your comfort

The Tire



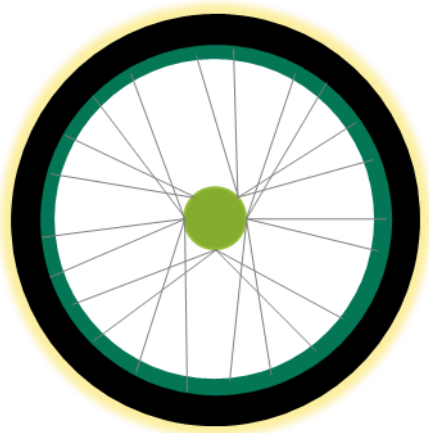
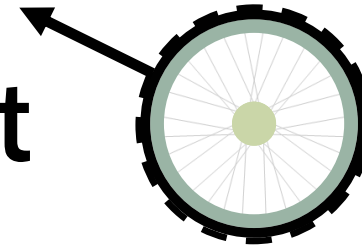
**Striped Buffer**





# Step 4 – Enhance your comfort

The Tire



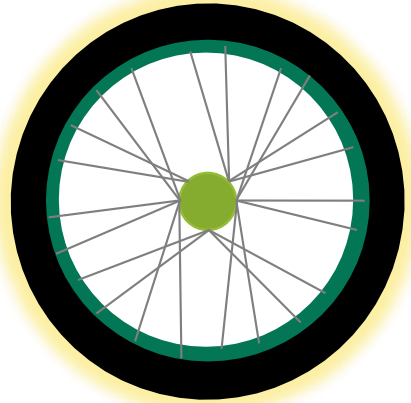
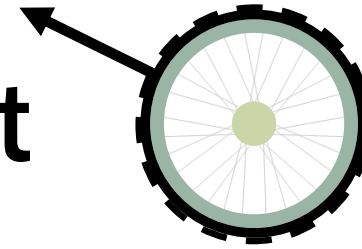
Physical Barrier





# Step 4 – Enhance your comfort

The Tire



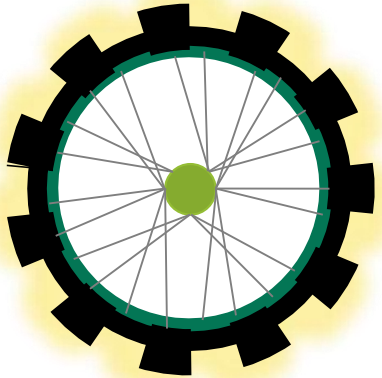
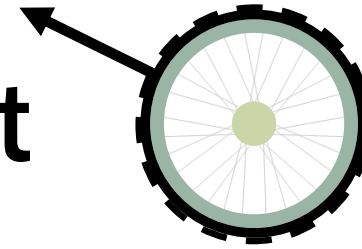
**Physical Barrier  
w/ Understory  
Plantings**





# Step 4 – Enhance your comfort

The Tire



**Physical Barrier  
w/ Street Trees**





# Malvern Avenue



**TOOLE**  
DESIGN



# Warwick Road





# Williamsburg Road







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