

# Sustainable Transportation

sustainability  
science for  
sustainable  
schools  
NSF-Funded GK-12 Project



# Sustainability

“Meets the needs of the present without compromising the ability of future generations to meet their own needs”

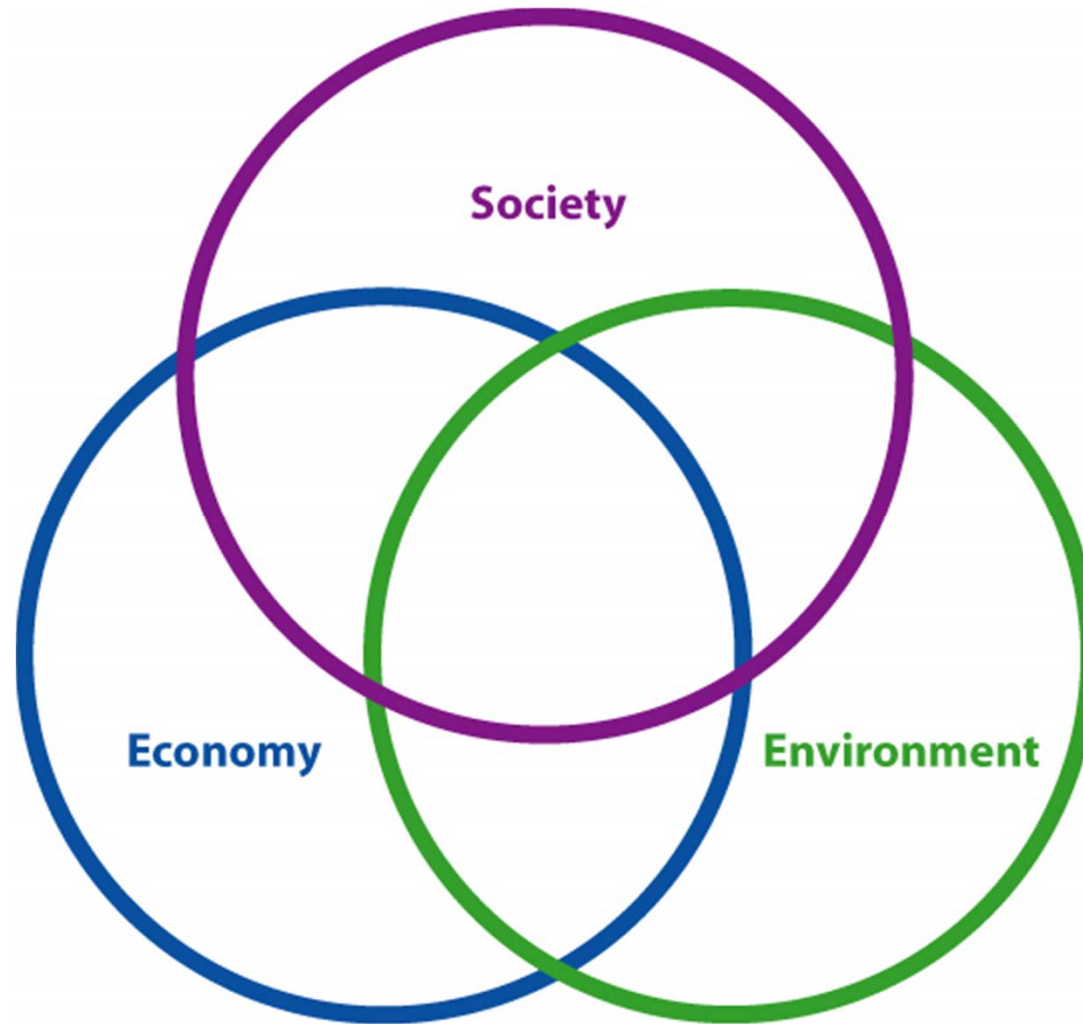
U.N., 1987, Brundtland Report,  
*“Our Common Future”*

# Sustainable Transportation

“Transport that meets current transport and mobility needs without compromising the ability of future generations to meet these needs.”

Black, 2005

# Three Pillars of Sustainability



# Non-sustainable Components of Transportation

1. Diminishing petroleum reserves
2. Global atmospheric impacts
3. Local air quality impacts
4. Fatalities and injuries
5. Congestion
6. Noise
7. Biological impacts
8. Inequity

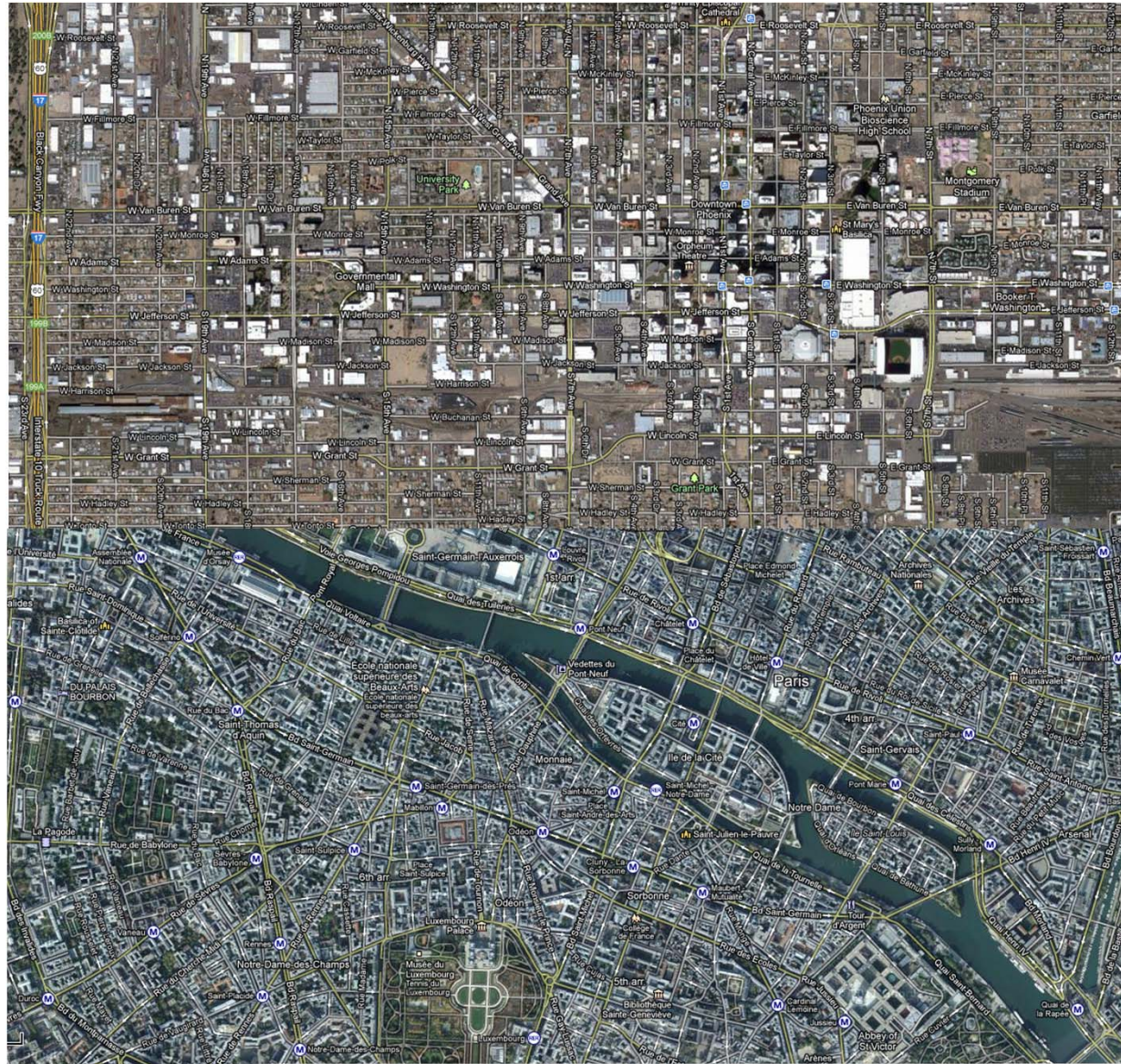


# Learning from France

sustainable science for sustainable schools

NSF-Funded GK-12 Project

3,071  
per sq mi



54,300  
per sq mi

Photo Credit: Google Maps

# Planning for Walking/Cycling

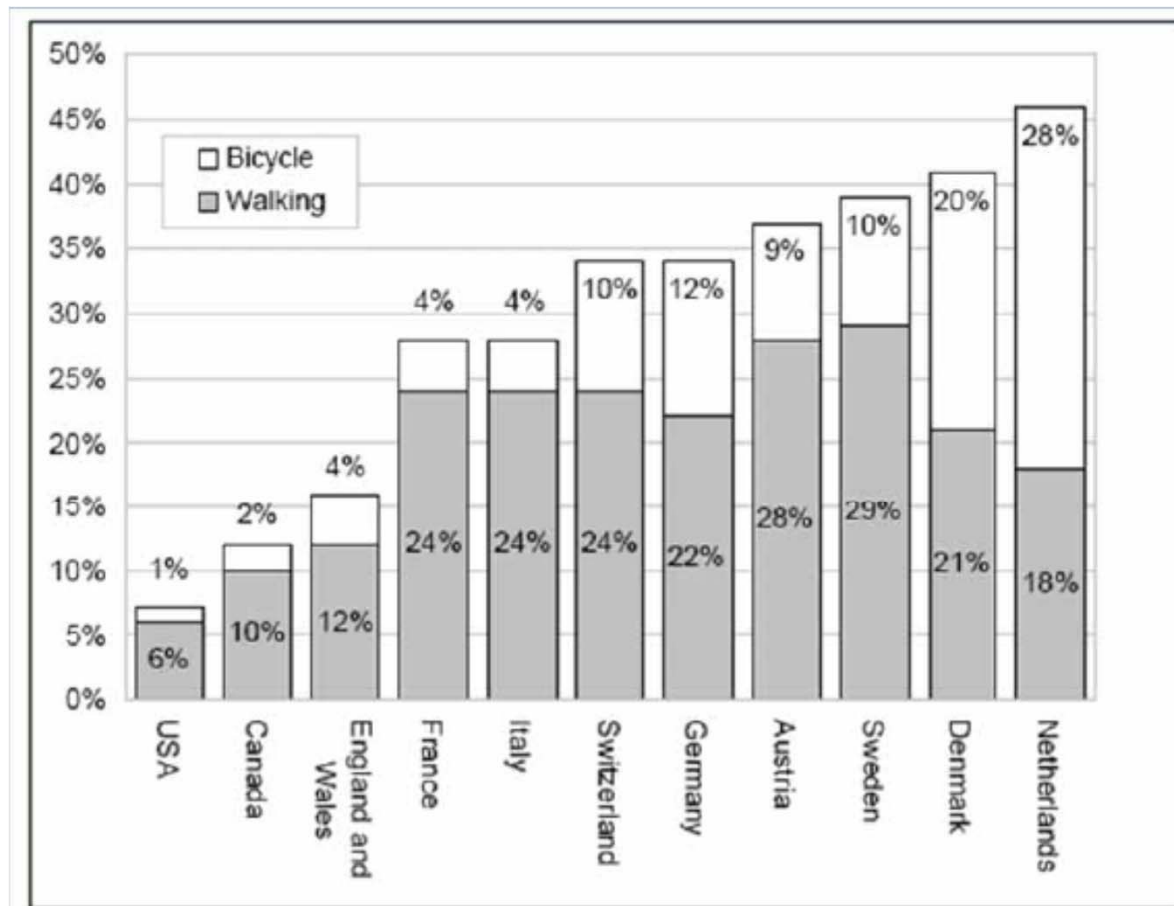


Figure 1: Walking and Bicycling Shares of Urban Travel in North America and Europe, 1995

Source: Transportation Research Board, Table 2-2, pg. 30



# Street Life in Paris

Photo Credit: [www.paris-tours-guides.com](http://www.paris-tours-guides.com)





# Street Life in Paris



Photo Credit for Street Life in Paris Pictures: Omayya Ahmad, 2009;  
<http://www.wsws.org>





# Bicycle Infrastructure

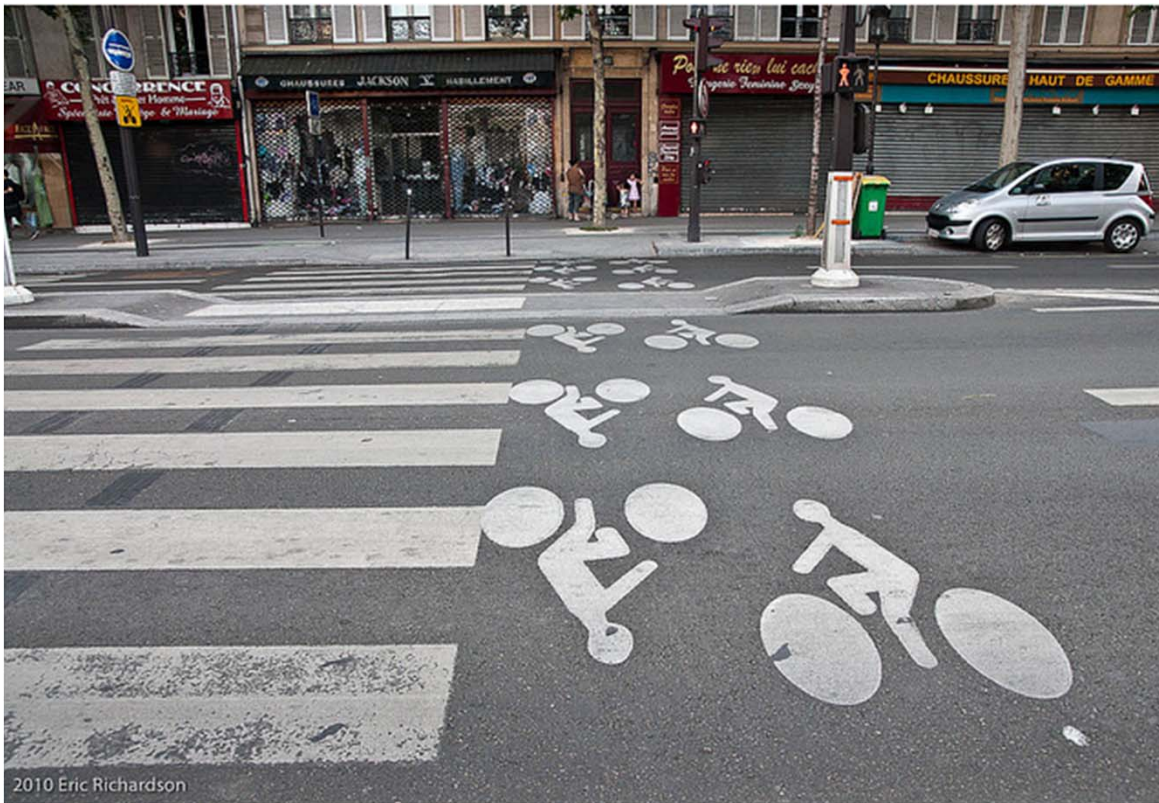


Photo Credit: Eric Richardson



Photo Credit: Josh Marks

# Transit

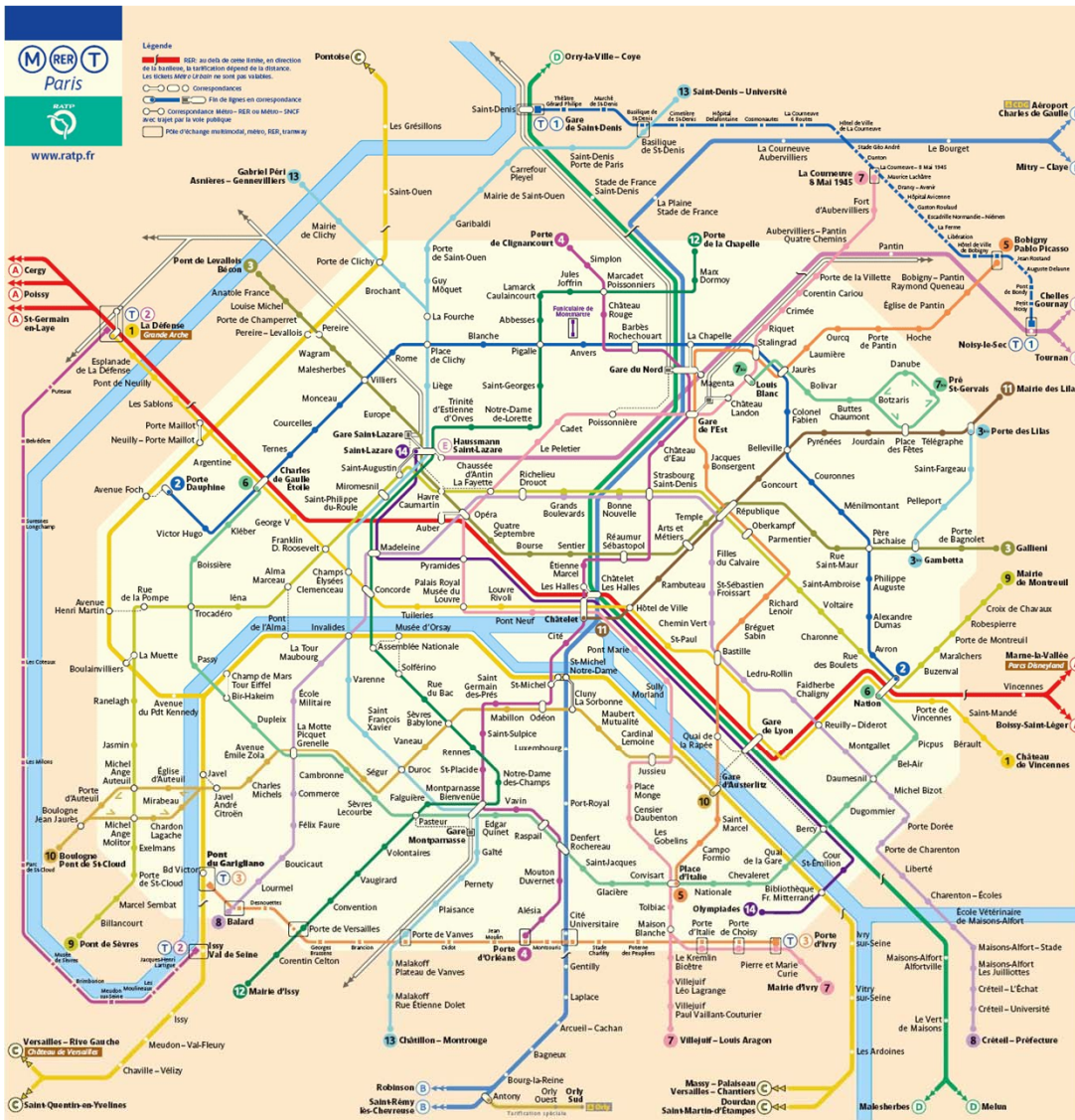


Photo Credit: phoenix.about.com

Photo Credit: www.aparisguide.com



# Metro Comparison

## Paris

- Opened in 1900
- Runs 133 miles in length
- 301 stations
- Daily ridership is 4,500,000

## Phoenix

- Opened in 2008
- Runs 20 miles in length
- 32 stations
- Daily ridership is 41,300

# Bus

## Rouen, France



Photo Credit: Aaron Golub, 2012



# Quick Activity: Sustainable Transport Wish List

## Places

1. Desert Vista Area
2. Your neighborhood
3. A shopping district
4. Downtown Phoenix

## Alternative Transportation

- Walking
- Cycling
- Transit

\*Goal is to improve levels of sustainable transportation