

# Sustainable Revival in NYC - Transforming the Concrete Jungle

CASA0003 Digital Visualisation  
Group 2

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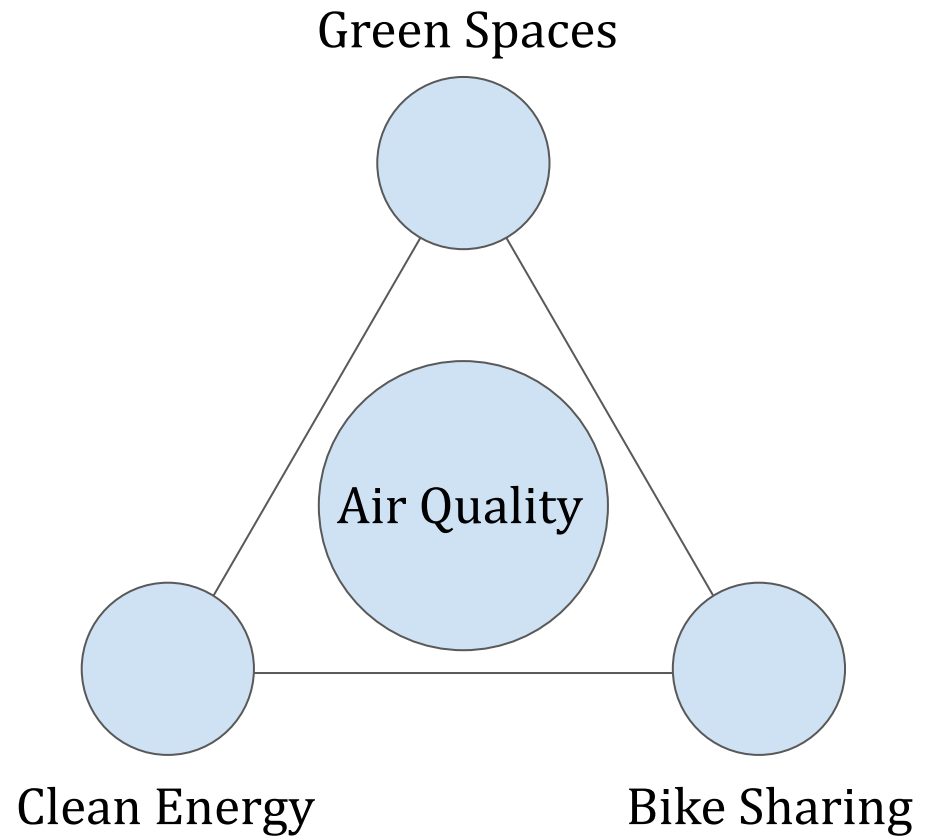
Yuting Xu

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# Content

1. Design Concept
2. Technical Challenges
3. Design Process
4. Website Demo

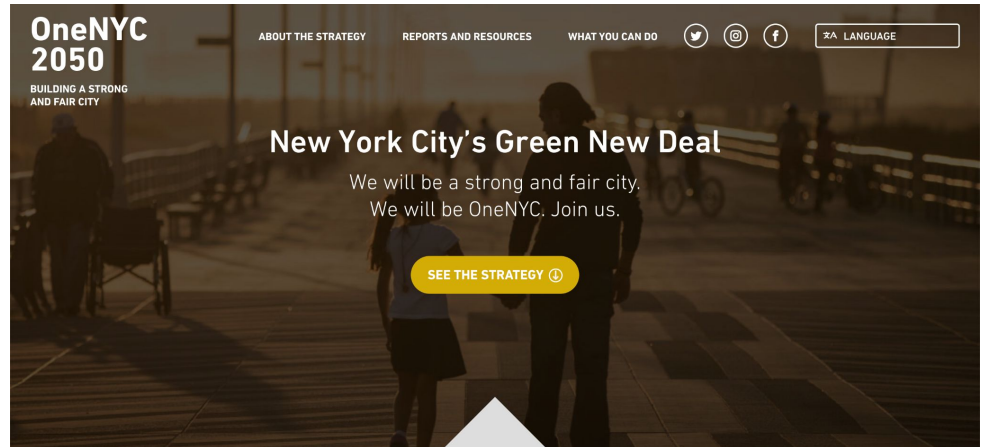


# Concept

## Exploring the Relationship Between Air Quality, Green Spaces, Clean Energy, and Bike Sharing in New York City

### “OneNYC” strategy in 2015

This strategy has driven a series of initiatives, including increasing green spaces, promoting the adoption of clean energy vehicles, and encouraging the use of public transportation and bicycles for commuting.



# Concept

## Exploring the Relationship Between Air Quality, Green Spaces, Clean Energy, and Bike Sharing in New York City

Air quality in New York City is closely related to the presence of air pollution and combustion emissions, with one of the major contributors being vehicle exhaust.

**To Investigate the improvements in air quality over the past decade (2011-2021) in New York City and explore the connections between air quality improvements, the expansion of green spaces, the promotion of clean energy, and the implementation of bike-sharing programs.**

Matte, T., Ross, Z., Kheirbek, I. *et al.* (2013) Monitoring intraurban spatial patterns of multiple combustion air pollutants in New York City: Design and implementation. *J Expo Sci Environ Epidemiol* **23**, 223–231. <https://doi.org/10.1038/ies.2012.126>

King, K. L., Johnson, S., Kheirbek, I., *et al.* (2014). Differences in magnitude and spatial distribution of urban forest pollution deposition rates, air pollution emissions, and ambient neighborhood air quality in New York City. *Landscape and Urban Planning*, 128, 14-22. <https://doi-org.libproxy.ucl.ac.uk/10.1016/j.landurbplan.2014.04.009>

# Concept

## Exploring the Relationship Between Air Quality, Green Spaces, Clean Energy, and Bike Sharing in New York City

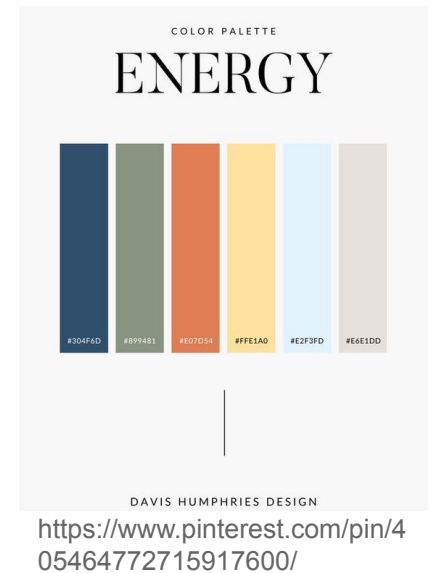
Through data analysis and visual representations, we aim to showcase the following aspects:

1. Air Quality Improvement Trends
2. Expansion of Green Spaces
3. Promotion of Clean Energy
4. Bike Sharing Systems

# Title

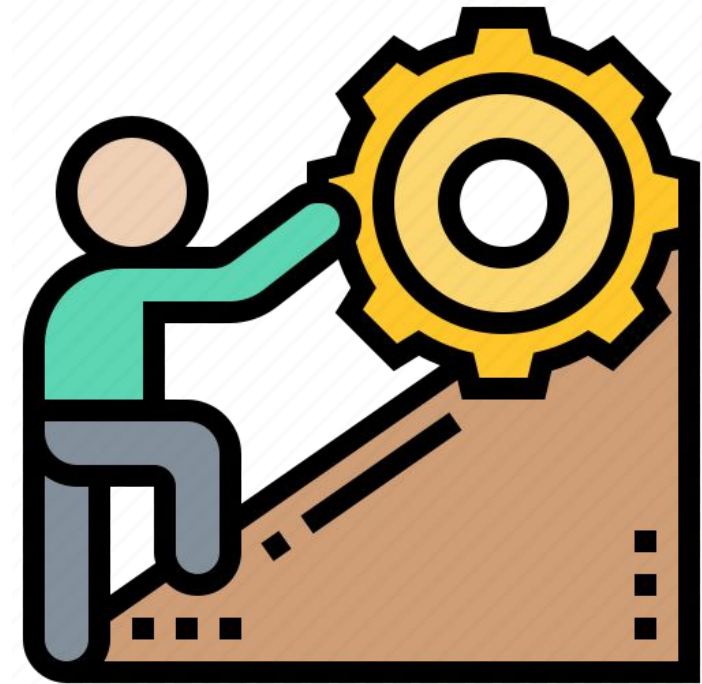
## Header

Text



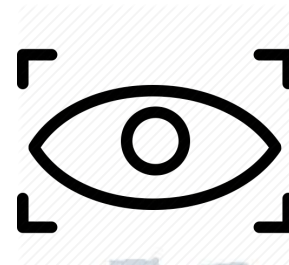
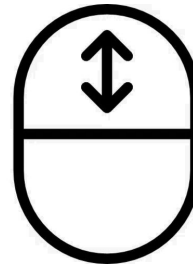
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# Technical Challenges

1. Data Classification:  
colour of choropleth map
2. Adaptability:  
percentage or pixel
3. Web Typography:  
scroll of map and web page
4. Visual Guide:  
overall view and focus



# Content

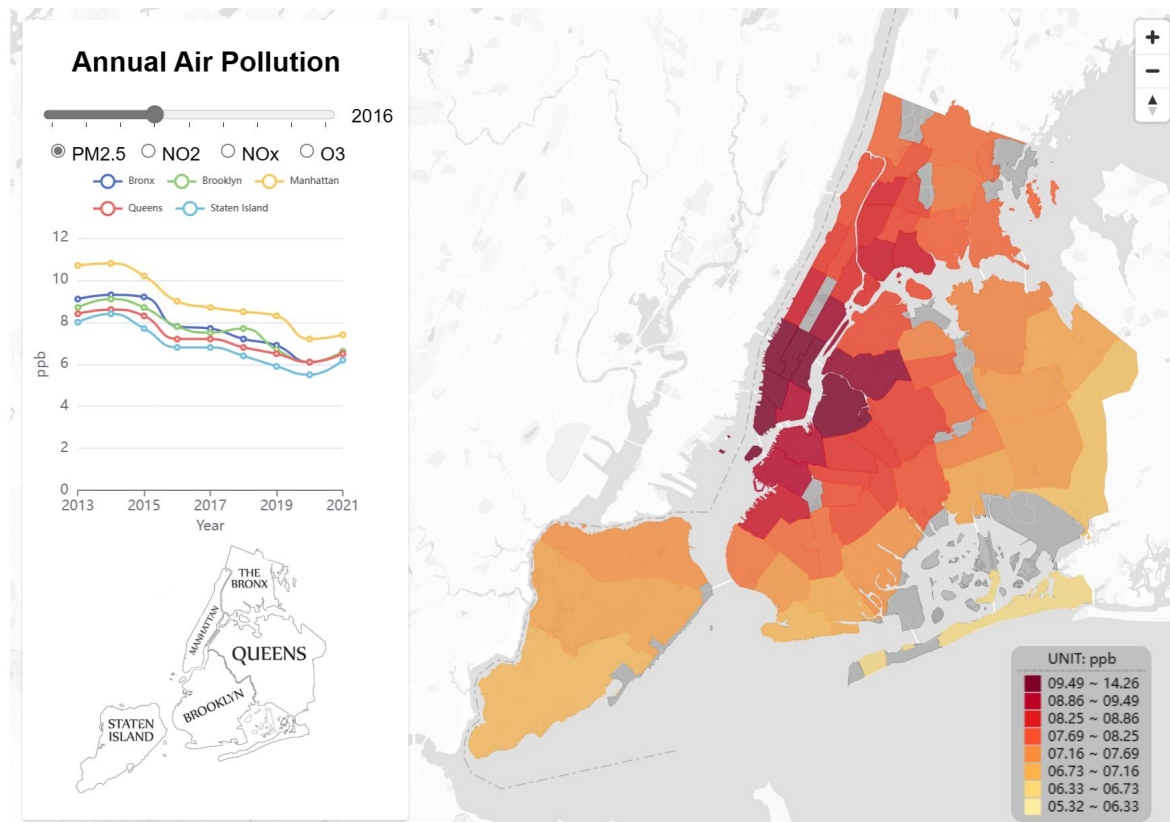
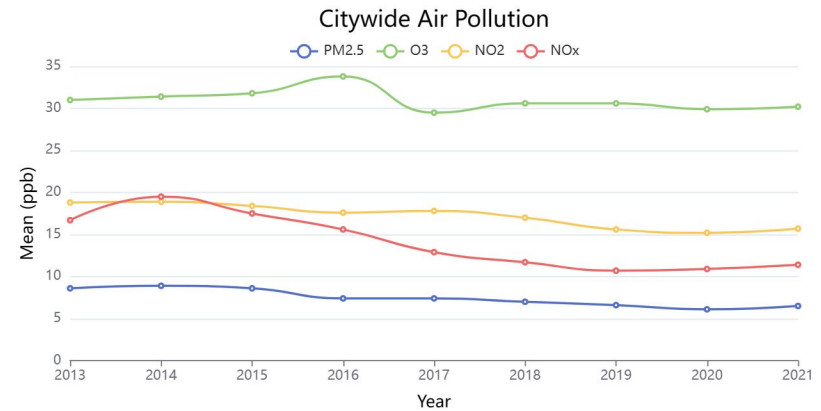
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# Process 1: Air Quality

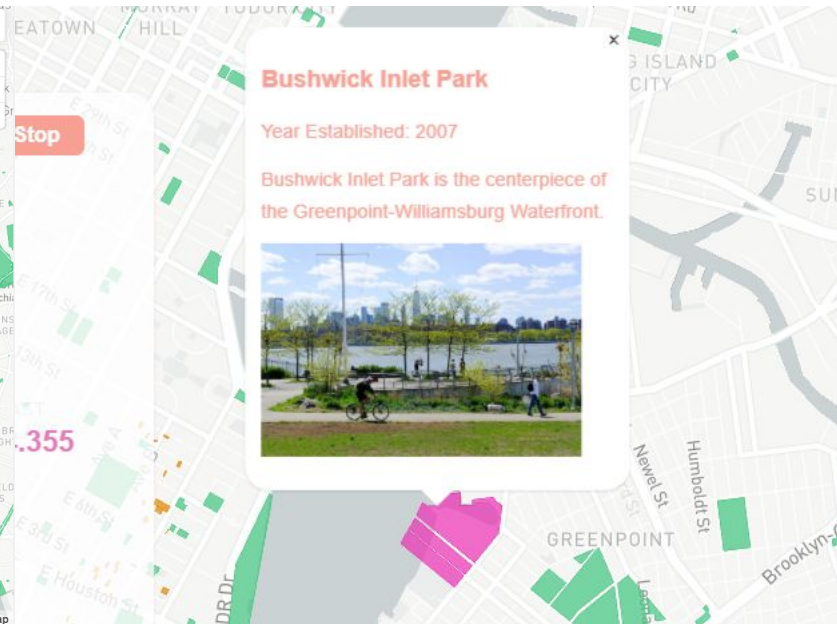
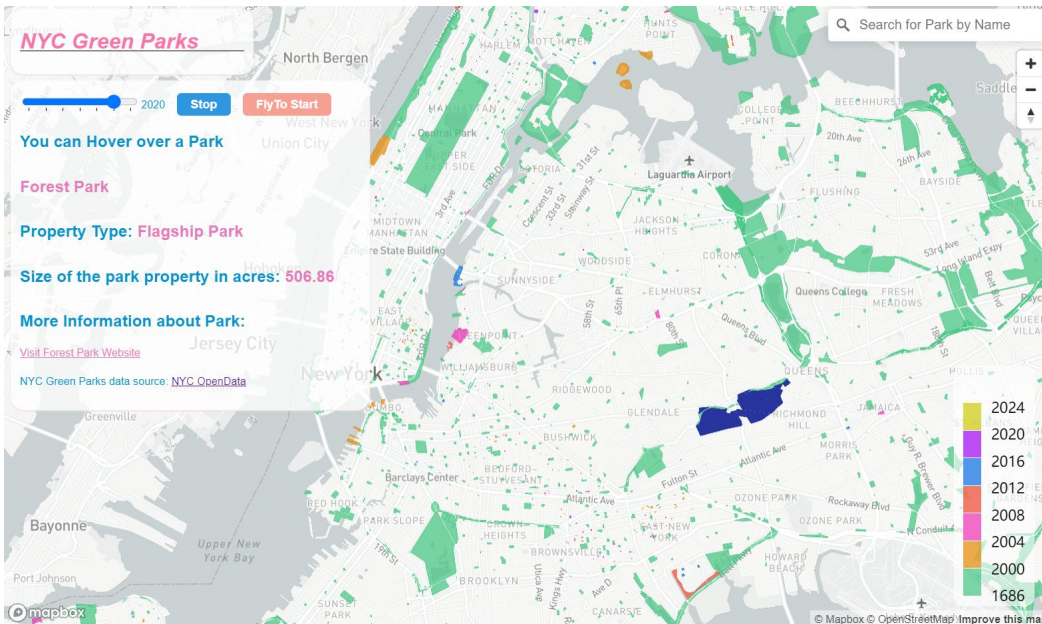
- **Data:** NYC OpenData, NYCCAS Air Quality Data Hub
- **Line graphs:** Air quality trends
- **Interactive map:** Time frame, pollutant options
- **Color-coded districts:** Regional air quality comparison
- **Pop-up windows:** Detailed air quality data
- **Borough statistics:** Complementary line graphs, maps



# Process 2: Green Parks

- Data sourced from NYC OpenData
- Graphical representation of the growth of NYC's green spaces from 2000 to 2024
- Interactive timeline showcasing park expansions over time
- 'FlyTo' animation for a closer examination of newly added parks
- Hover-over function to provide detailed information about each park
- Search functionality for instant park location

## Green Park Area Growth

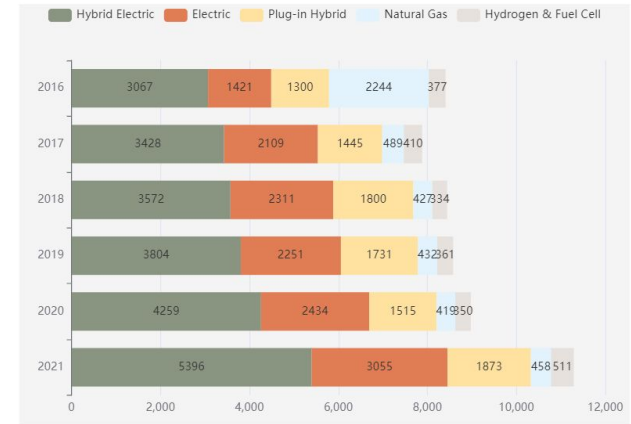


# Process 3: Clean Energy

- Data derived from the New York Clean Energy Industry Report and NYC Gov Open Data
- Introduction to New York's flourishing green economy and sustainability efforts
- Scatter plot showing new electric vehicle registrations
- Bar chart highlighting the growth in employment in the alternative transportation sector
- Further scatter plot exploring new electric vehicle registrations

## Alternative Transportation Employment

The bar chart below shows the the growth of employment in alternative transportation sector.



## Clean Energy Industry

The graph below shows the growth of clean energy employment in New York State from following the launch of the OneNYC Strategy in 2015.



## Electric Vehicle Registrations

The scatter plot explores the registrations of new electric vehicles in the state.

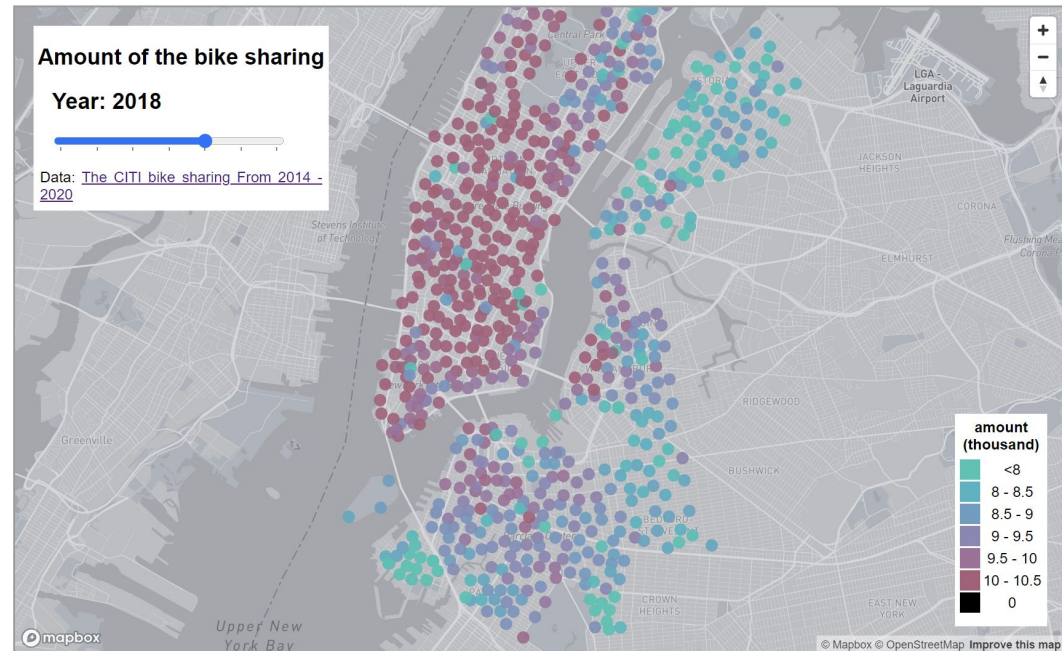
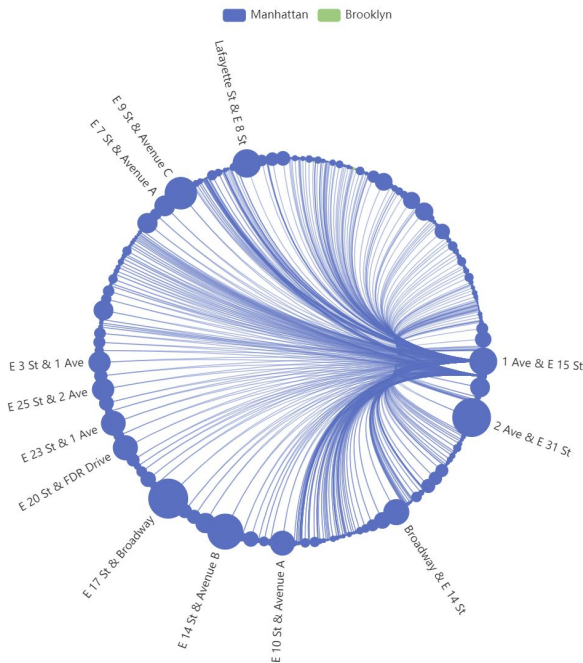
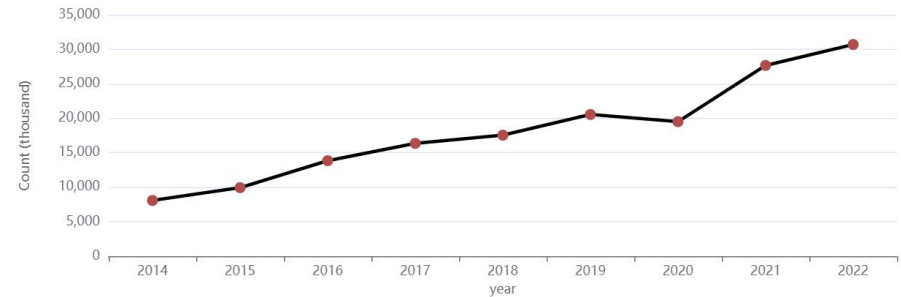




# Process 4: Bike Sharing

- **Data source: NYC DOT Open Data.**
- **Linear graph: Bike usage and stations**
- **Interactive map: Station spread over time**
- **Foot traffic analysis: Times and locations**
- **Sustainable transportation trend in NYC**

Number of rides 2014 - 2022



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<https://liu-qiqi.github.io/0003-Group02/Home.html>