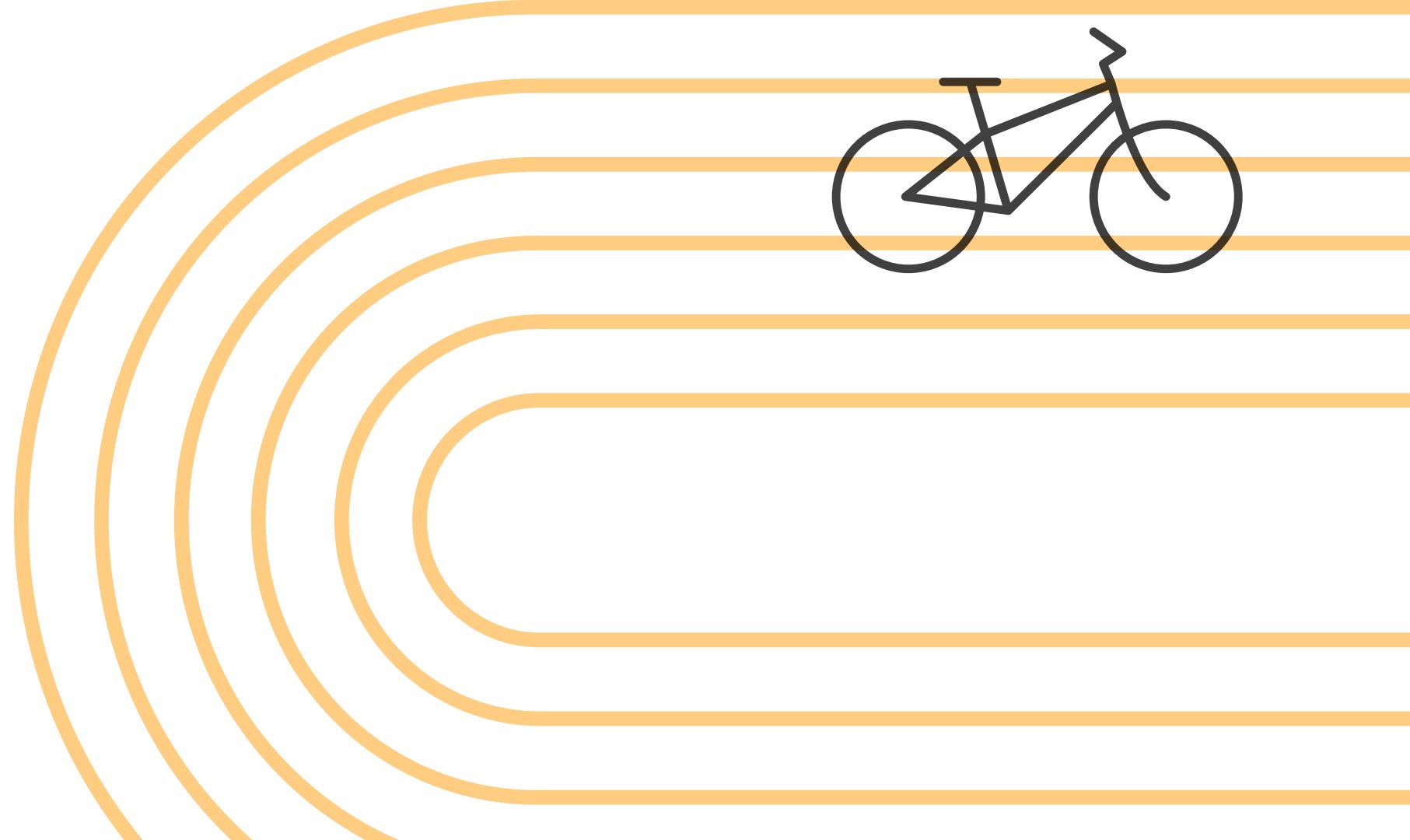


Data-Informed Design Thinking  
National Taipei University of Technology

# CYCLISTS IN TAIPEI

**Exploring the Impact of Missing Bike  
Lanes on Urban Mobility and Safety**

**PRESENTED BY:**  
LUCKY DATA



# Agenda



01	<b>Overview</b>
02	<b>Data Analysis</b>
03	<b>Field Observation</b>
04	<b>Survey Results</b>
05	<b>Possible Design Ideas</b>
07	<b>Design Proposal</b>

## 01 Identifying Key Problems:

We discussed common cycling issues as a group and found that safety and lack of bike lanes are major concerns

## 02 Collecting Real-World Data:

We visited busy areas like Taipei Main Station to observe road conditions and cyclist behavior directly

## 03 Understanding User Needs:

We designed and shared a survey to gain insights from real bike users. Their answers helped us understand what changes are most needed.



# Overview

This project explores how to improve cycling safety in Taipei. As more people use bicycles, safety concerns have increased. The goal is to design safer bike routes that meet the needs of everyday cyclists.

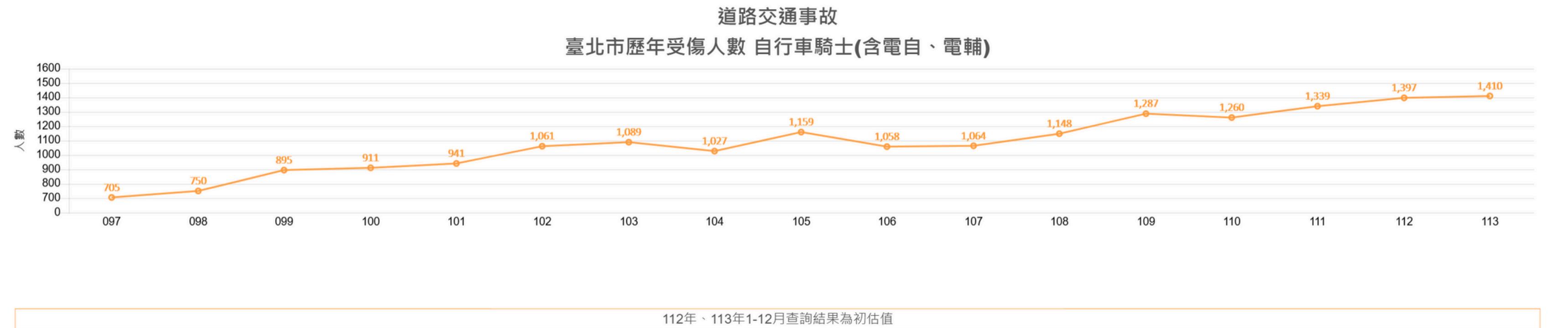
Data Analysis

# Information on Bicycle Pathways

Data from City Science Lab

## Data Analysis

# Cyclists Yearly Injuries



Data from Department of Highways and Traffic Safety, Ministry of Transportation

## Data Analysis

# Cyclists accident causes

2024 Statistics on Causes of Accidents Where Bicycles (incl. Electric & Electric-Assist) Were the Primary Party Involved in Zhongzheng District, Taipei City

自行車事故肇因排行					
排行	肇因	件數	死亡人數	受傷人數	死傷人數
1	逆向行駛	7	0	4	4
2	其他未依規定讓車	5	0	4	4
3	闖紅燈直行	5	0	5	5
4	左轉彎未依規定	4	0	4	4
5	方向不定(不包括危險駕駛))	3	0	2	2
6	恍神、緊張、心不在焉分心駕駛	3	0	2	2
7	變換車道不當	3	0	3	3
8	相關跡證不足且無具體影像畫面，當事人各執一詞，經分析後無法釐清肇事原因	2	0	2	2
9	違反其他號誌	2	0	2	2
10	橫越道路不慎	2	0	2	2

Data from 交通部路政及道安司

產製日期：民國 114 年 4 月 9 日

## Data Analysis

# Cyclists Incidents by Age

2024 Distribution of Bicycle Cases by Age Group in Zhongzheng District, Taipei City

113年臺北市中正區腳踏自行車件數各年齡層分布

排序	年齡族群	件數	死亡人數	受傷人數	死傷人數
1	成年人(25-64歲)	66	0	61	61
2	高齡者(65歲以上)	31	0	31	31
3	年輕人(18-24歲)	16	0	15	15
4	少年(13-17歲)	10	0	9	9
5	兒童(0-12歲)	4	0	3	3
6	不明	1	0	0	0
總計		128	0	119	119

產製日期：民國 114 年 4 月 9 日

備註：不明係指案件中當事者資料無身份證號及出生日期。

Data from 交通部路政及道安司

## Data Analysis

# Accident Location

2024 Accident Location Statistics for Zhongzheng District, Taipei City

113年臺北市中正區事故位置發生統計

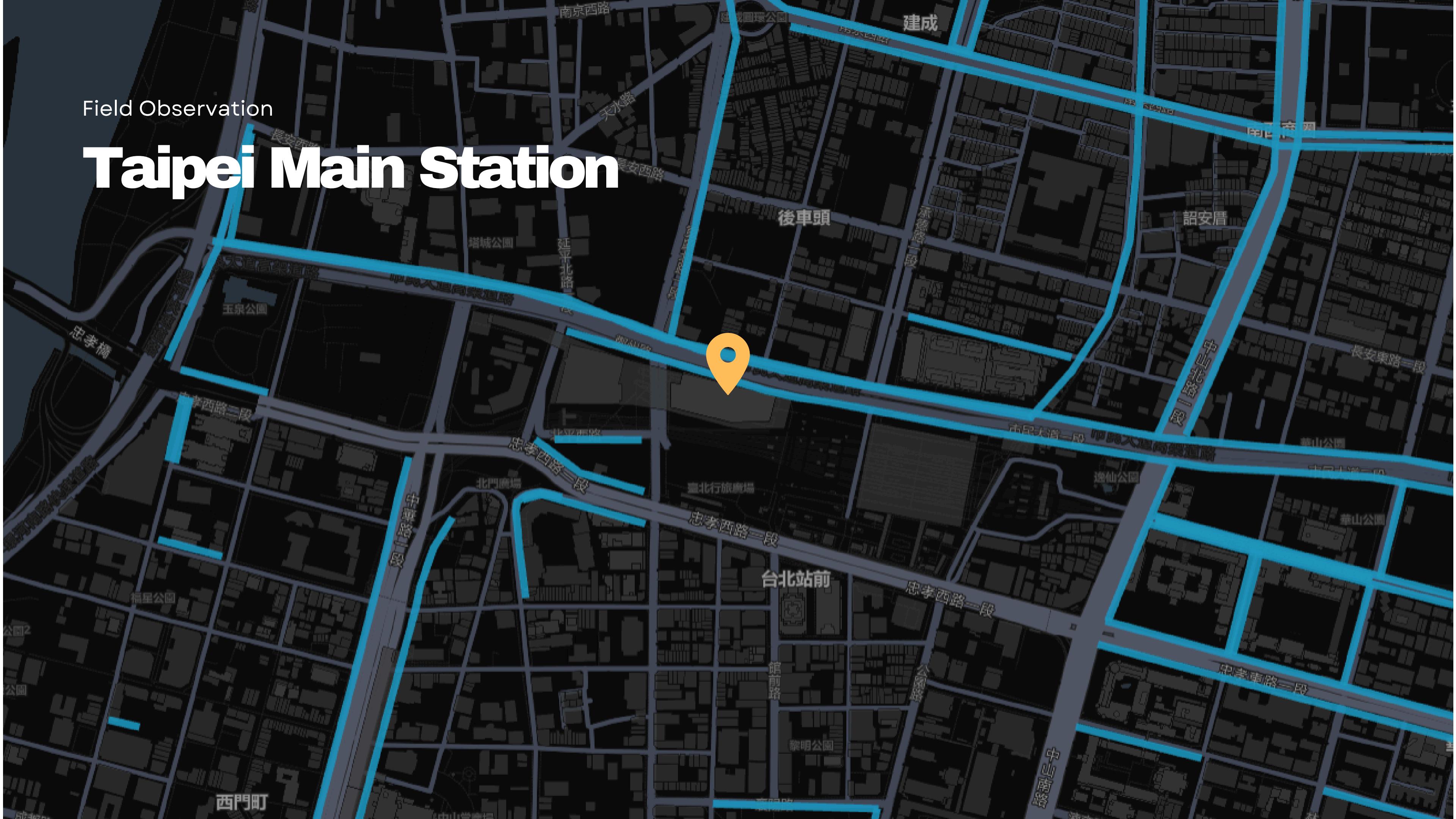
排序	事故位置	件數	死亡		受傷		死傷	
			人數	比例	人數	比例	人數	比例
1	路口	1,428	5	56%	1,882	66%	1,887	66%
2	路段	670	4	44%	873	31%	877	31%
3	其他	65	0	0%	78	3%	78	3%

產製日期：民國 114 年 4 月 9 日

Data from 交通部路政及道安司

Field Observation

# Taipei Main Station



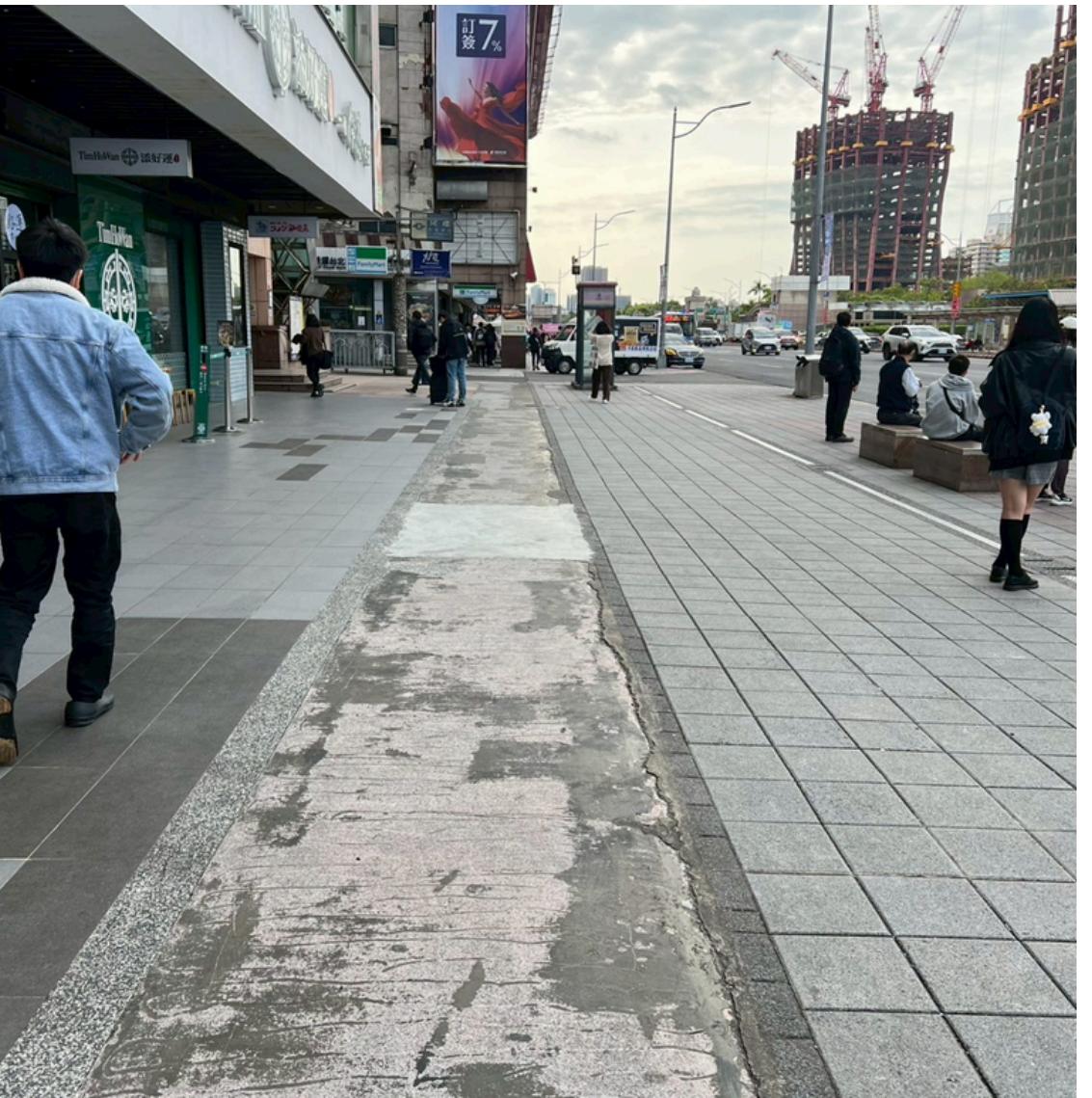
Field Observation

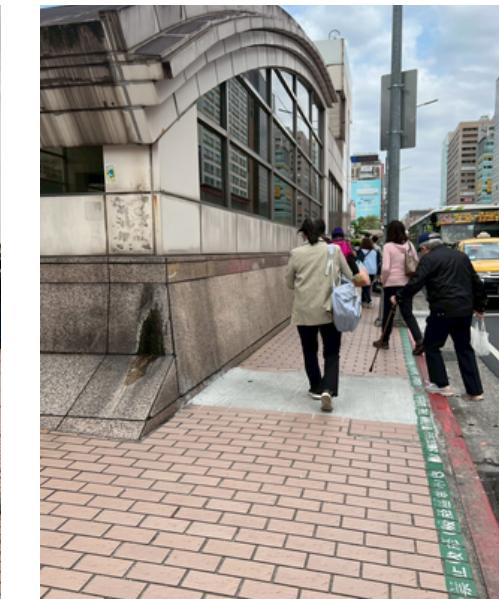
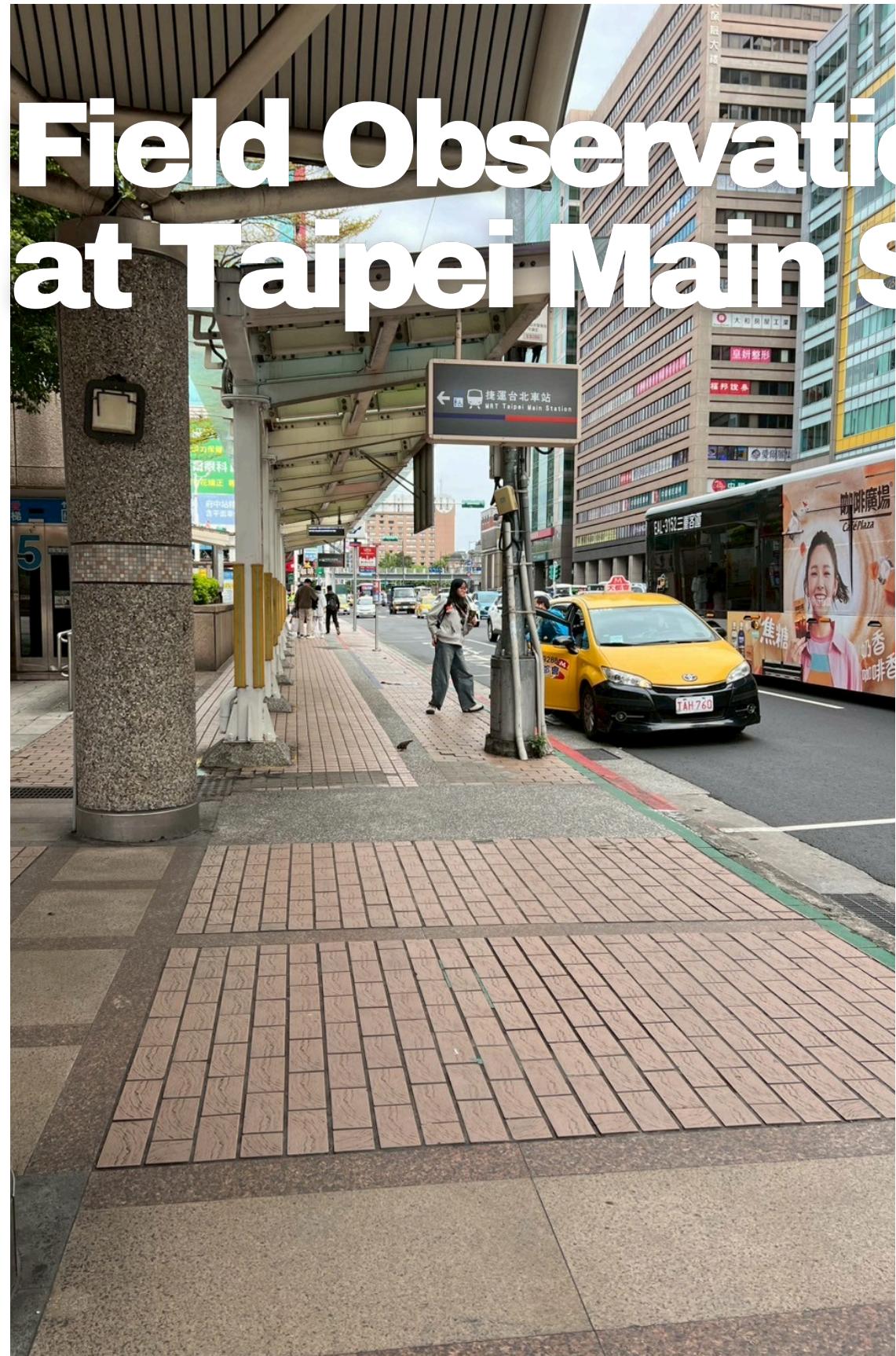
# Taipei Main Station





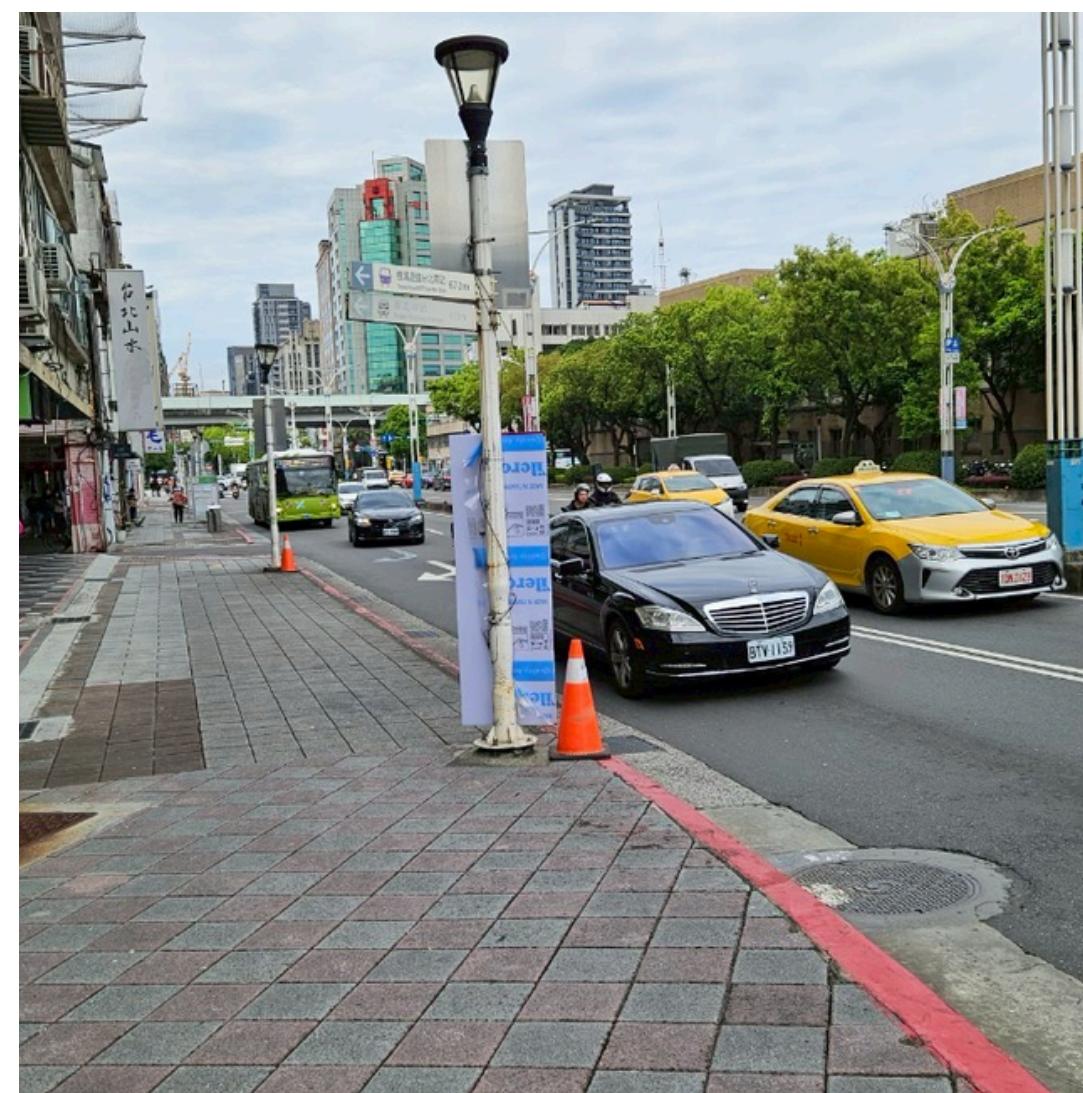
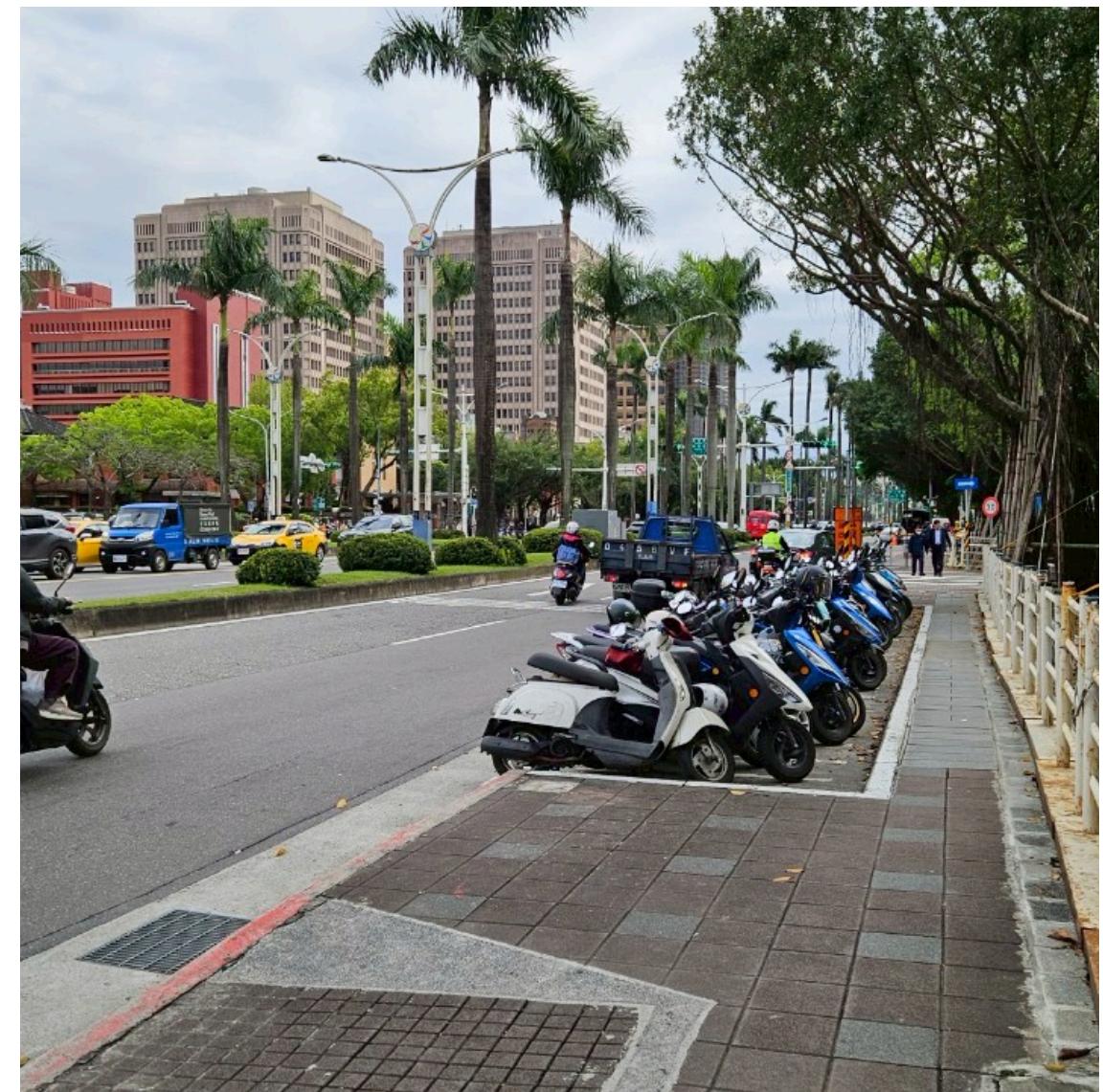
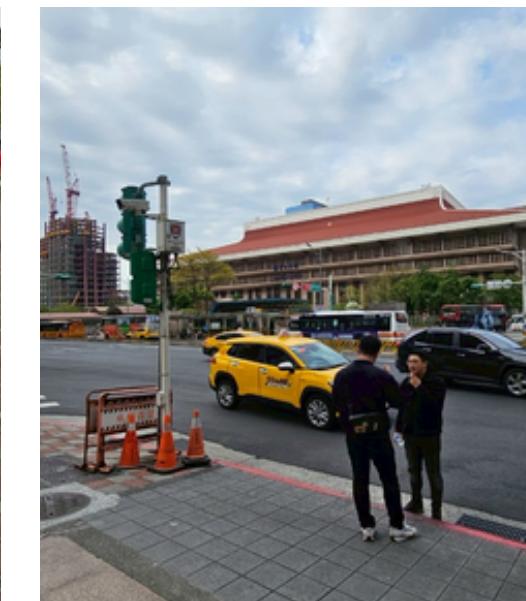
# Field Observation at Taipei Main Station





# Field Observation at Taipei Main Station



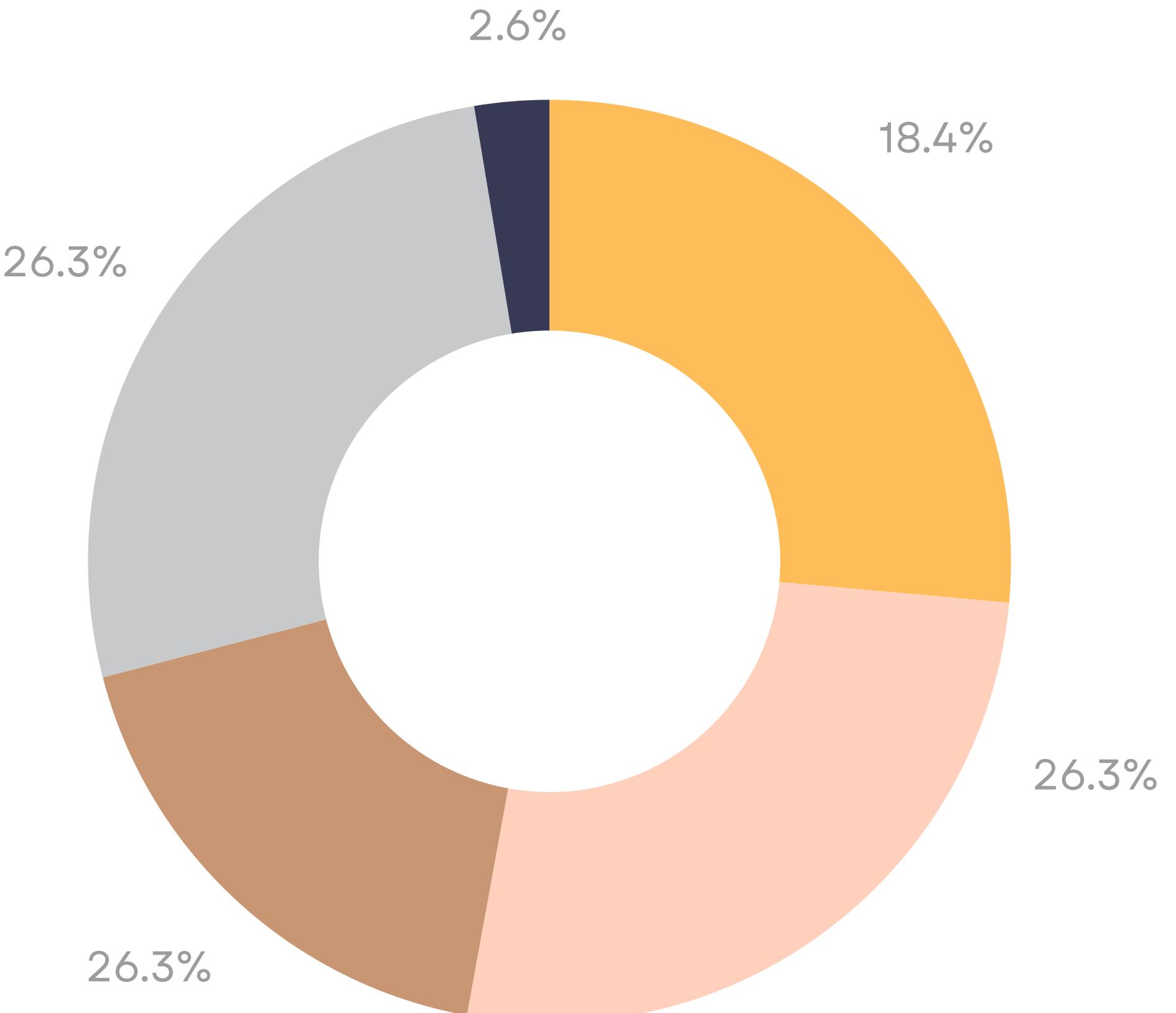


# Field Observation at Taipei Main Station

Survey Results:

# How often do you ride a bike in Taipei?

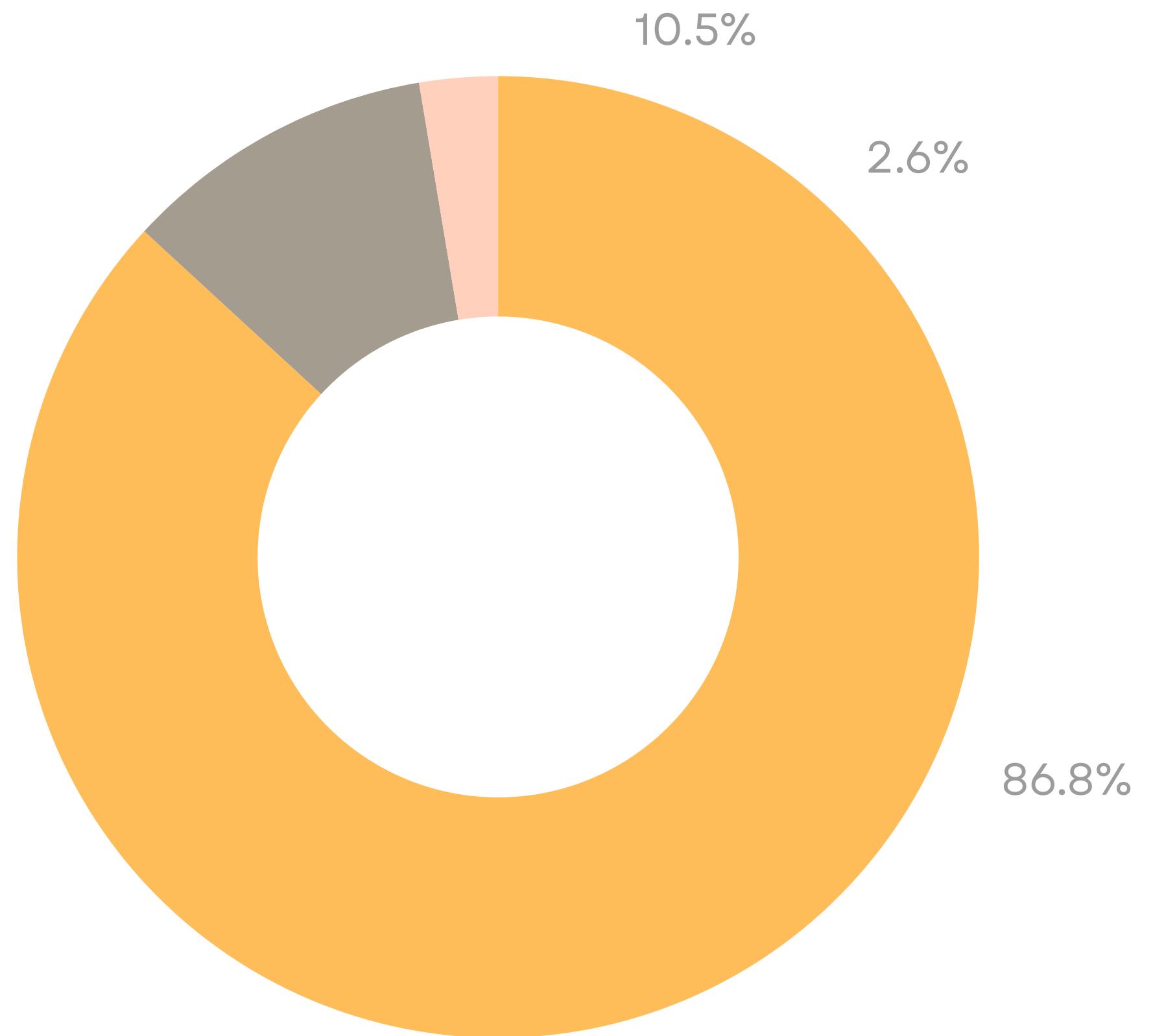
- █ DAILY
- █ WEEKLY
- █ MONTHLY
- █ RARELY
- █ NEVER



Survey Results:

# What kind of bicycle is usually used?

- █ YOUBIKE
- █ OWN BIKE
- █ E-BIKE
- █ RENTAL



Survey Results:

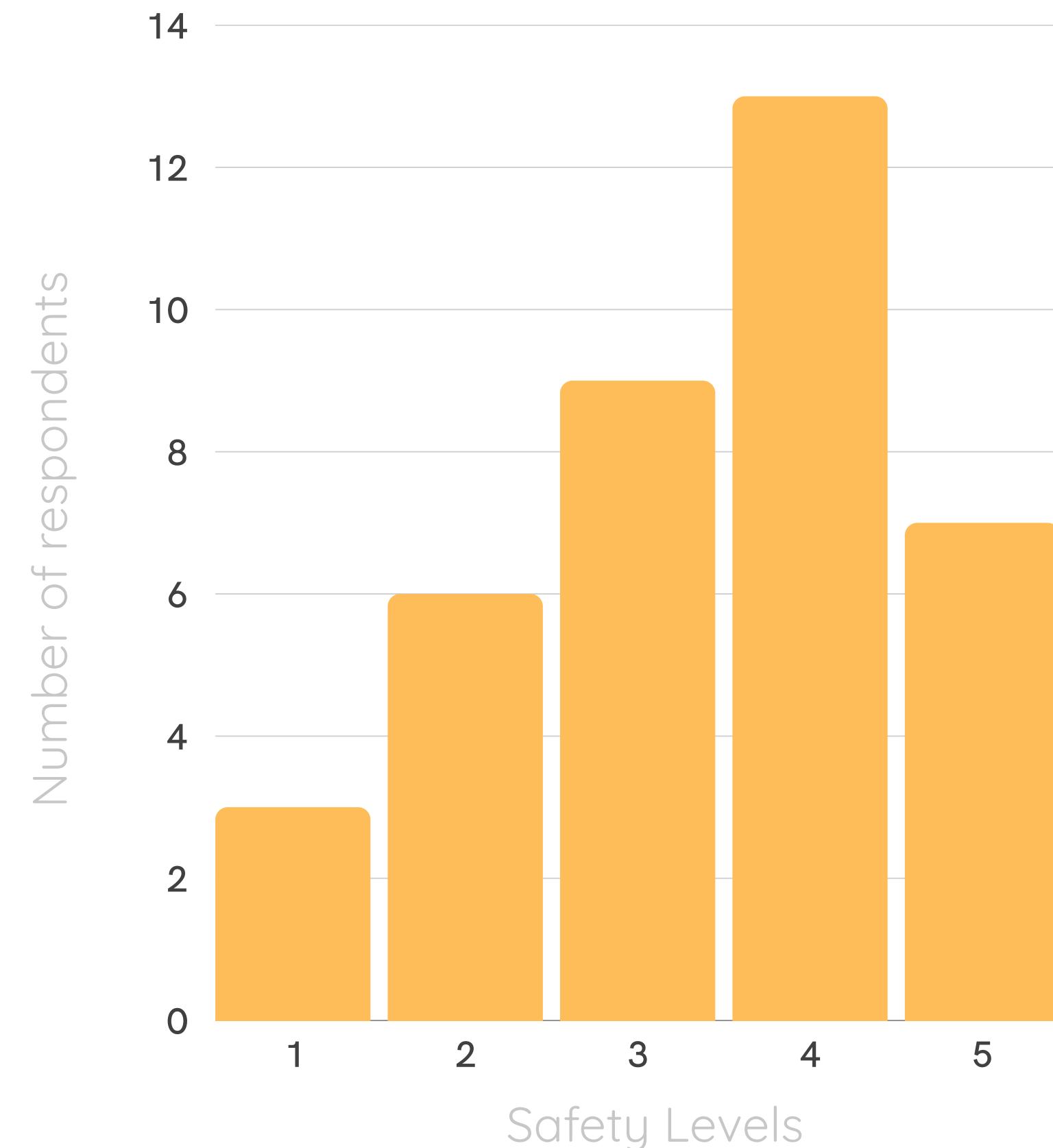
# Perceived Safety Level

## Key Insights:

- MOST PEOPLE GAVE A SCORE OF 4 OR 5, WHICH MEANS **THEY FEEL QUITE SAFE**
- SOME PEOPLE GAVE A SCORE OF 3 OR LESS, WHICH SHOWS THAT **THERE ARE STILL PROBLEMS IN SOME AREAS**

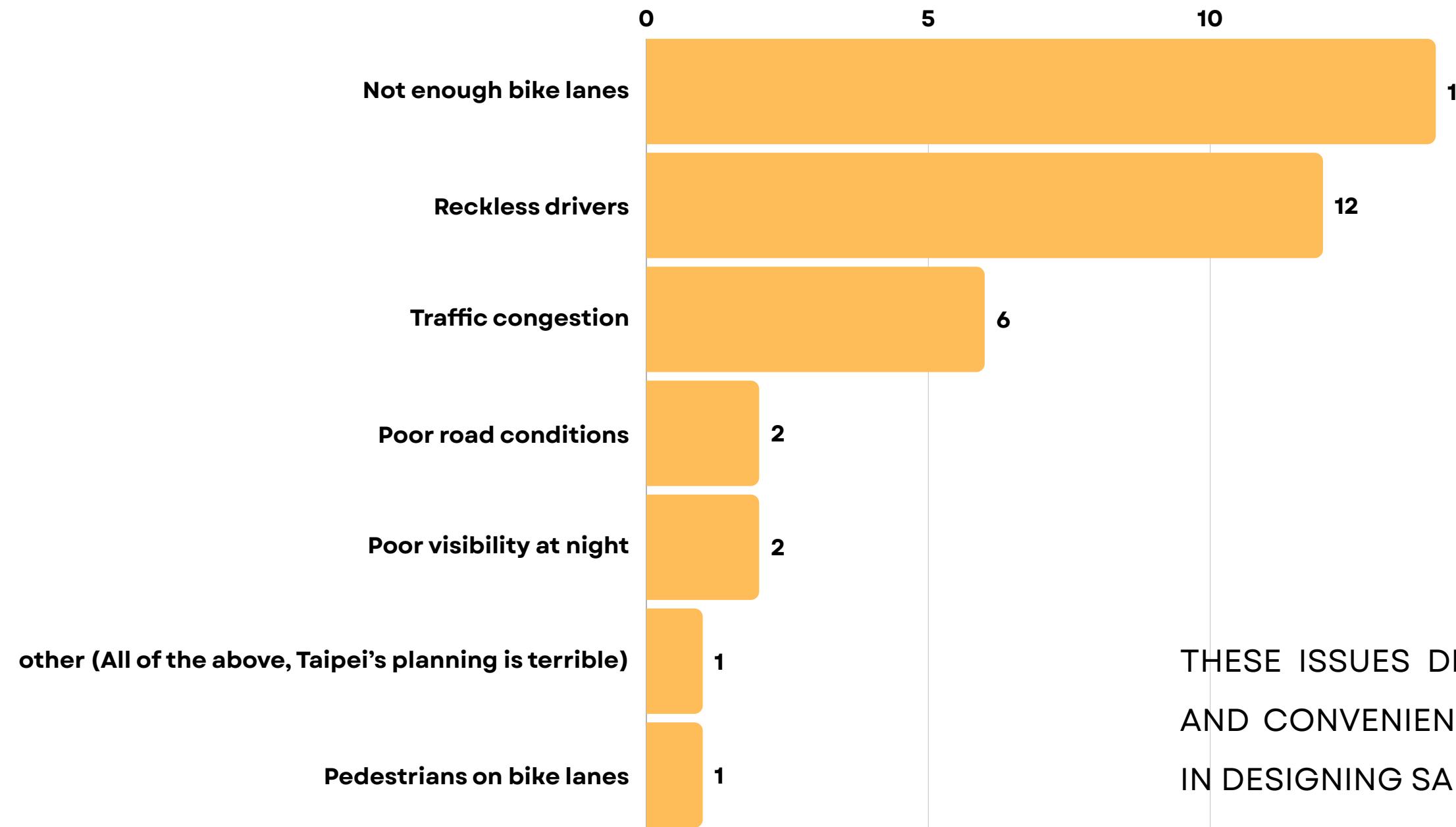
## Conclusion:

- WE CAN UNDERSTAND HOW USERS FEEL ABOUT SAFETY. IT CAN ALSO HELP US FIND WAYS TO IMPROVE BIKE ROUTES AND TRAFFIC SYSTEMS



Survey Results:

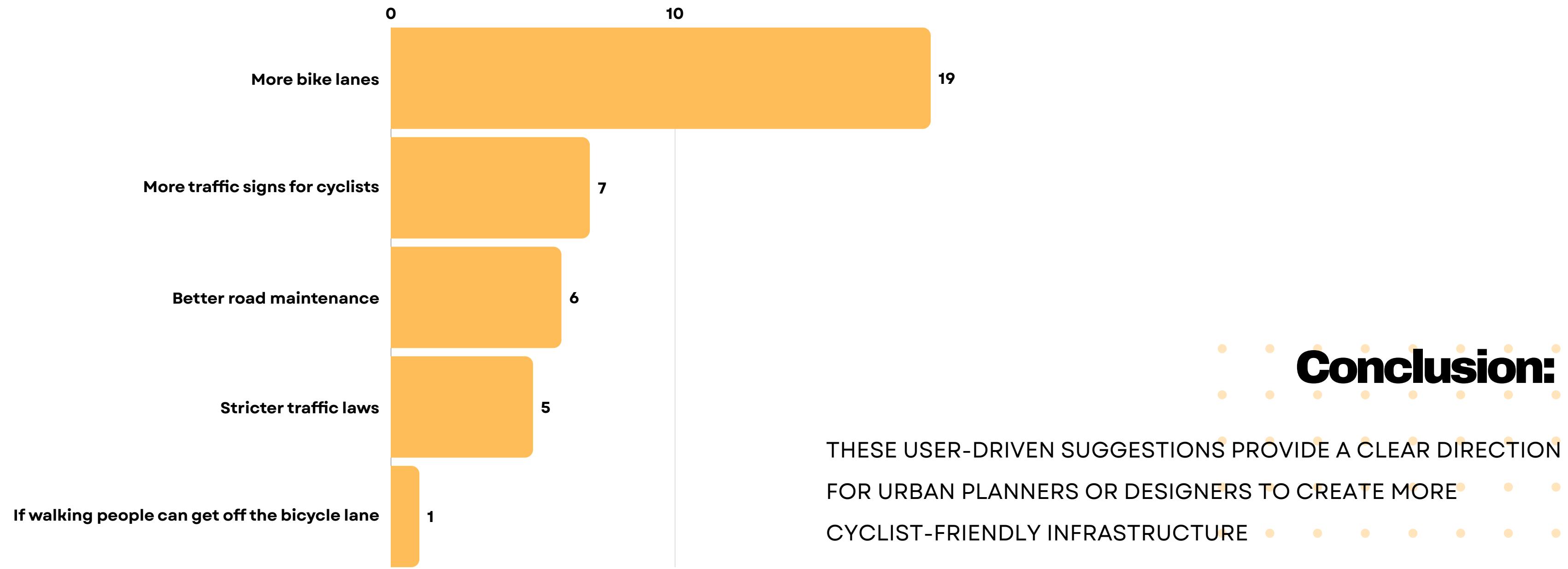
# Key Concerns & Barriers



Conclusion:  
THESE ISSUES DIRECTLY INFLUENCE USERS' SENSE OF SAFETY  
AND CONVENIENCE, AND ADDRESSING THEM WILL BE CRUCIAL  
IN DESIGNING SAFER BIKE ROUTES.

Survey Results:

# User Suggestions for Safer Cycling



Survey Results:

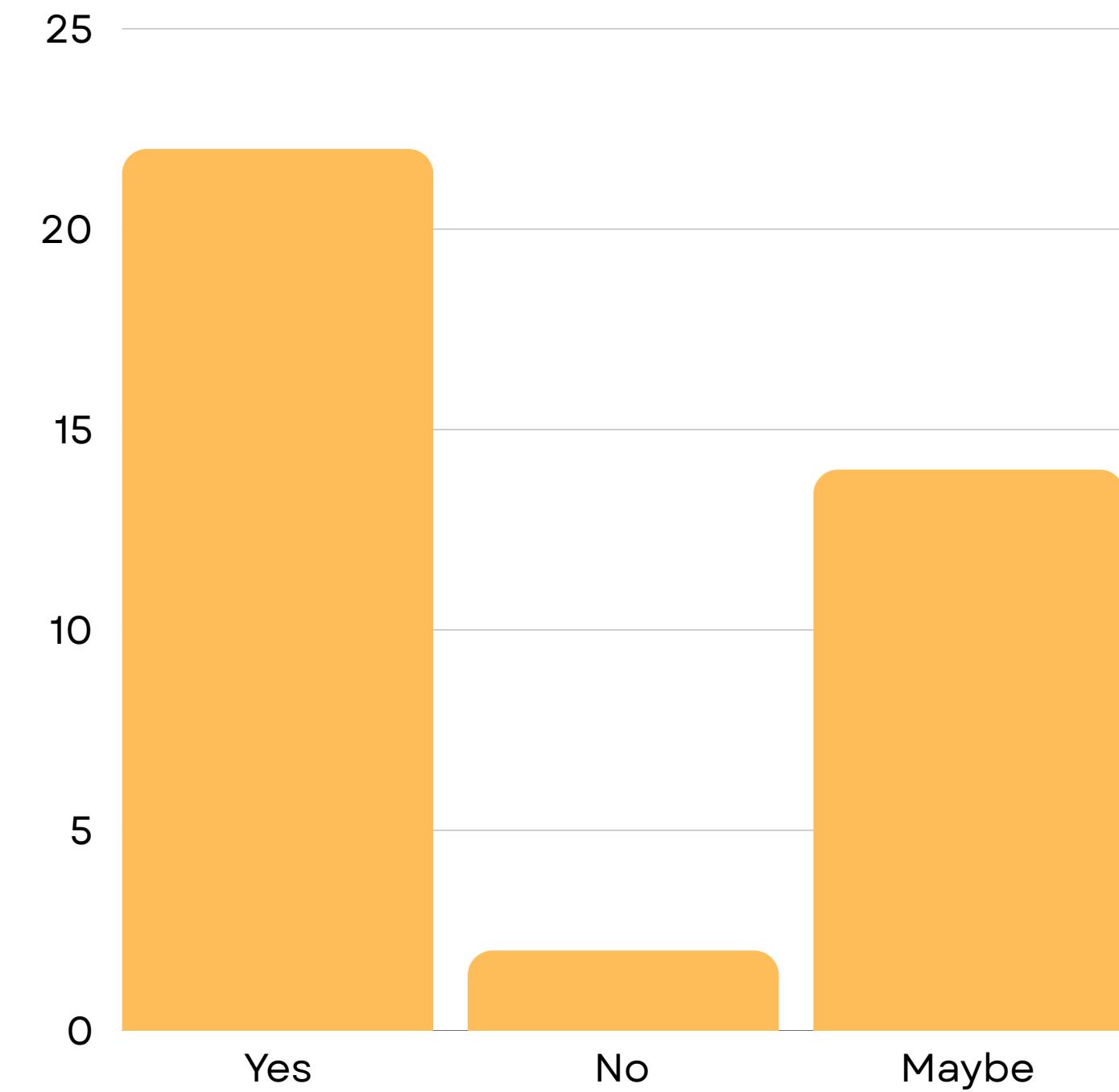
# Demand for Smart Navigation for Safe Routes

## Key Insights:

- A TOTAL OF 36 OUT OF 38 RESPONDENTS (94%) SHOWING A STRONG INTEREST IN A SAFETY-FOCUSED BIKE NAVIGATION APP

## Conclusion:

THIS SUPPORTS THE IDEA OF DEVELOPING A DIGITAL TOOL TO IMPROVE CYCLING SAFETY IN TAIPEI



# Possible Design Ideas



## Government

By creating a map that identifies areas with the highest number of bicycle accidents, we could highlight where new bike lanes or improved traffic control measures are most needed.



## Pedestrain

By providing information to pedestrians, we could aim to raise awareness and promote safer interactions with cyclists.



## Bike Rider

To support bike riders, we could offer resources such as maps of safe bicycle routes and general safety information to encourage safer, more informed riding.

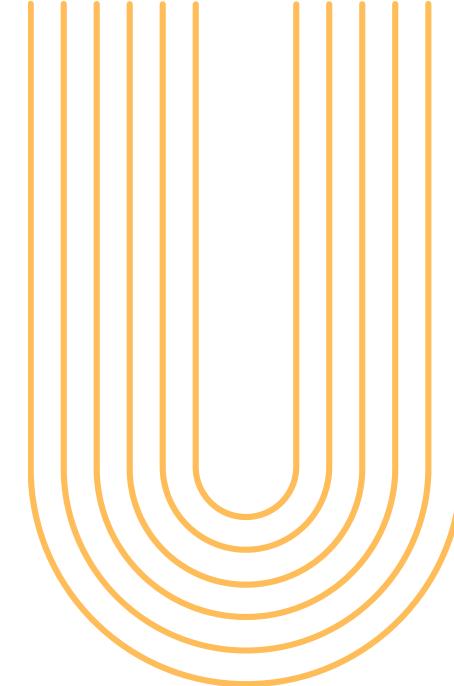
# Target Group - main users



## Daily and Weekly YouBike Commuters

- **How often they ride:** Most people use a bicycle every day or every week
- **Why they ride:** Most use it for going to school or work
- **Type of bicycle:** They often use YouBike
- **Time of riding:** They usually ride during rush hours (morning or evening)
- **Age:** 18–34 years old
- **Location:** Around NTUT, MRT stations, and main roads

# Design Concept



## Goals:

To help cyclists in Taipei find **the safest routes** by using **real-time data, accident history, and user reports**

## Design Style:

- Clean, simple, and easy to use
- Uses icons, maps, and bright color signals (green = safe, red = danger)
- Mobile-first layout with big buttons for easy access while biking

## Key Features:

- 🌐 **Smart Route Planner** – Shows the safest way using accident data
- ⚡ **Real-Time Hazard Alerts** – Warns users about traffic, construction, or poor road conditions
- 🚲 **Bike-Friendly Maps** – Highlights existing bike lanes and danger zones
- 💬 **Community Reporting** – Lets users report unsafe areas or problems on the road
- 🌙 **Night-Safe Mode** – Suggests well-lit and safer routes for night riders

# **Thank you**

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