



City Architecture for  
Tomorrow Challenge

## TMF CATCH Overview of Findings

February 13, 2023

## CATCH Overview

The City Architecture for Tomorrow Challenge (CATCH) was designed to promote freedom of mobility in Kuala Lumpur through the introduction of connected, data-driven solutions

### CATCH Problem Statement

Encourage freedom of mobility through the proficient usage of city infrastructure through a dynamic, intelligent, data-driven & connected solution toward sustainable development and shared prosperity

### Trial Implementation Stage Objective

Create sustainable impacts to the city's mobility efficiency through the data-driven and innovative solutions providing **"Mobility for All"** and **improve the quality of life of the residents of Kuala Lumpur**

Organizer:



Strategic partners:



# Overview of Kerb Solution

Kerb is a parking management platform that successfully facilitated over 2,000 bookings and achieved 100% utilization rate within one month of operation

## SOLUTION OVERVIEW



**Parking aggregation & booking**  
Allows drivers to book parking spaces, including those with EV chargers



**Automated entry and parking management**  
Enables hands-free entry and exit, payment and invoicing for all customers



**Data collection**  
Allows operators to monitor vehicles parked

## NEXT STEPS

- Conducted initial discussions with DBKL for further roll out of solution (e.g. outdoor parking)
- DBKL and Kerb to further consider details of this collaboration

## KEY FINDINGS

**2,000+**

**Bookings at LRT Gombak and LRT Ampang within 3 months**



**100%**

**Utilization after 17 days in LRT Gombak and after 27 days in LRT Ampang**



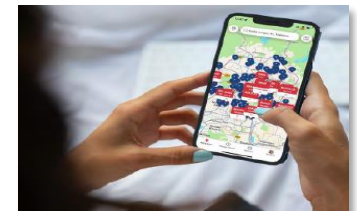
**79%**

**Customer retention rate at DBKL car parks** Majority being commuters who park and take public transportation to the office



**96%**

**Customer satisfaction rate** regarding Kerb's multiple payment options and ability to view parking availability



# Overview of Numina Solution

Numina is a privacy-first computer vision solution that identified risks to pedestrian safety as well as opportunities to reduce congestion by potentially optimizing signals and regulations

## STEPS

### Sensor installation

Install sensors at areas where it would be helpful to analyze vehicle and pedestrian behavior

### Data collection

Allow sensor to collect anonymized data on volume by vehicle type, potential conflict points between pedestrians and drivers, etc.

### Data visualization & analysis

Visualize data collected to generate insights on traffic volume, dangerous behaviors, etc.

## NEXT STEPS



Initial discussions with DBKL led to agreement that further discussions with other DBKL agencies may be needed to socialize and refine recommendations

## KEY FINDINGS

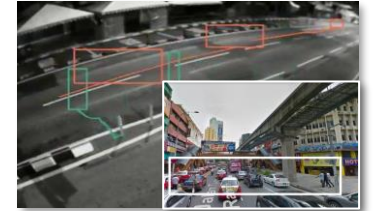
Jalan Chow Kit

**307**

### Pedestrians crossing mid block per hour, weekdays

Avg. weekday high: 11:00AM, 789 / hr  
Avg. weekend high: 11:00AM, 836 / hr

*Opportunity to re-evaluate mechanisms to redirect pedestrians to existing cross walk*



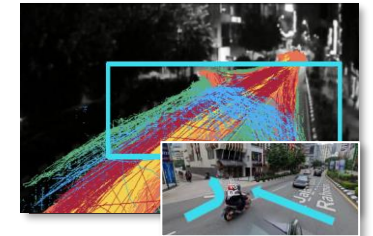
Lorong Gombak

**3k**

### Dangerous crossing behaviors

923 bicyclists and 2,212 pedestrians were found engaging in dangerous crossing behaviors along Jalan Tuanku Abdul Rahman and Lorong Tuanku Abdul Rahman

*Opportunity to consider installation of cross walks or bike turning lanes*



Bukit Bintang Crossing

**900**

### Cars passing per hour at 8:00 AM, weekdays

Car traffic peaks at 8:00 AM on weekdays, with pedestrian traffic steadily increasing peaking at 18:00 and 21:00

*Opportunity to optimize traffic light signals to reduce congestion*



Pavilion Mall Crosswalk

**27k**

### Pedestrians crossing at Pavilion Mall Crosswalk at 2:00PM on weekends

Weekend pedestrian activity peaks at 2:00 PM  
Weekday pedestrian activity peaks at 5:00 PM

*Opportunity to evaluate pedestrian-safety operations especially during afternoons*



## Reference: Key benefits to DBKL and Kuala Lumpur

By utilizing advanced technology and applying these to actual situations, Kerb and Numina are able to bring significant benefits to both DBKL and to Kuala Lumpur as a whole

### KERB SOLUTION BENEFITS

#### BENEFITS TO DBKL

##### **Increased revenue & utilization**

Increase in car park utilization & revenue given ability to see and book available parking space

##### **Data collection & usage**

Collection of car park user data and potential analysis (e.g. analyzing patterns, predicting parking usage to support planning, etc.)

##### **Reputational benefit**

Recognition for DBKL as an entity focused on improving citizen welfare through technology

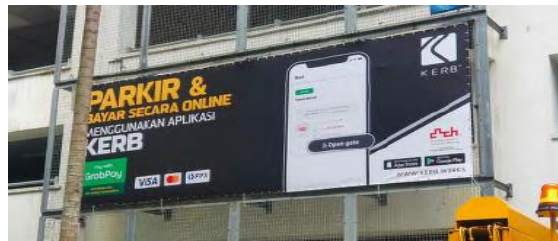
#### BENEFITS TO KUALA LUMPUR

##### **Increased efficiency and reduced congestion**

Less time spent searching for parking

##### **Increased availability**

More parking space visible and available for booking



### NUMINA SOLUTION BENEFITS

#### BENEFITS TO DBKL

##### **Risk identification and early action leading to cost savings**

Opportunity to identify risks to safety, transport efficiency, etc. and engage in early counter measures

##### **Opportunity to utilize innovation and data to improve traffic situation, manage infrastructure, and enhance city planning**

##### **Potential increase in efficiency and safety leading to reputational benefit**

#### BENEFITS TO KUALA LUMPUR

##### **Increased safety**

Improvement through countermeasures to be developed by government following Numina's findings and recommendations

##### **Increased efficiency**

Improvement in transport efficiency (e.g. traffic light signal timing, bus schedule timing, etc.) through enhanced planning, guided by Numina sensor data

