ITDP | Institute for Transportation & Development Policy

Impact Evaluation of Sustainable Transportation Development in Jakarta

Background

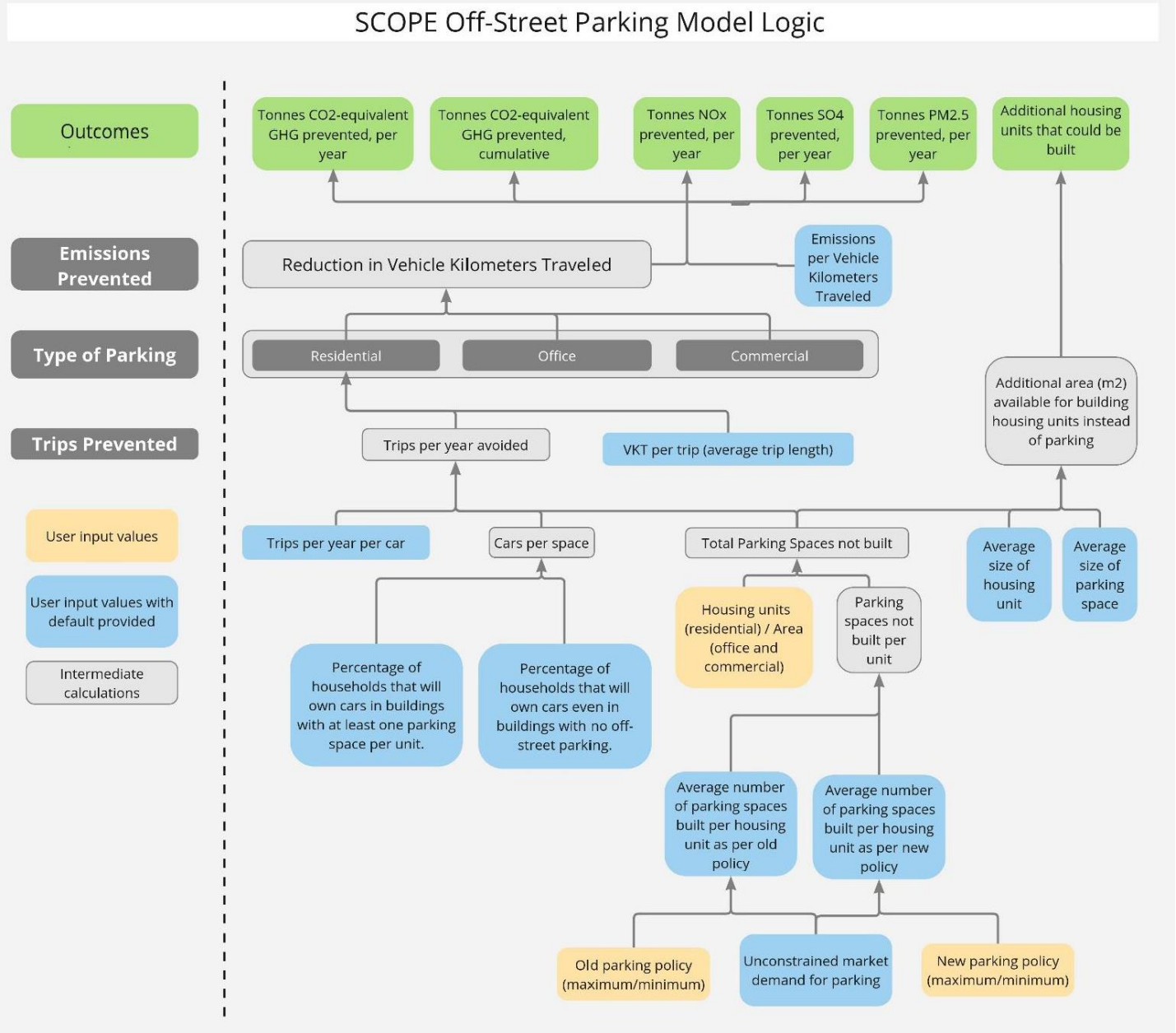
Isu sektor transportasi di Jakarta

- Estimated losses due to congestion reached IDR 65 Trillion (JICA, 2020)
- Jakarta is the city with the highest pollution level in Indonesia, 3x the national standard. Estimated health loss reaches Rp 36.9 Trillion (Vital Strategies, 2020)
- Land transportation is responsible for 58.9% of PM 2.5 and 64.4% of NOx

- The level of public transport use only reached 10% (2023), while in 2045 it is targeted at 55%.

Parking Management

ITDP Off Street Parking SCOPE Tools



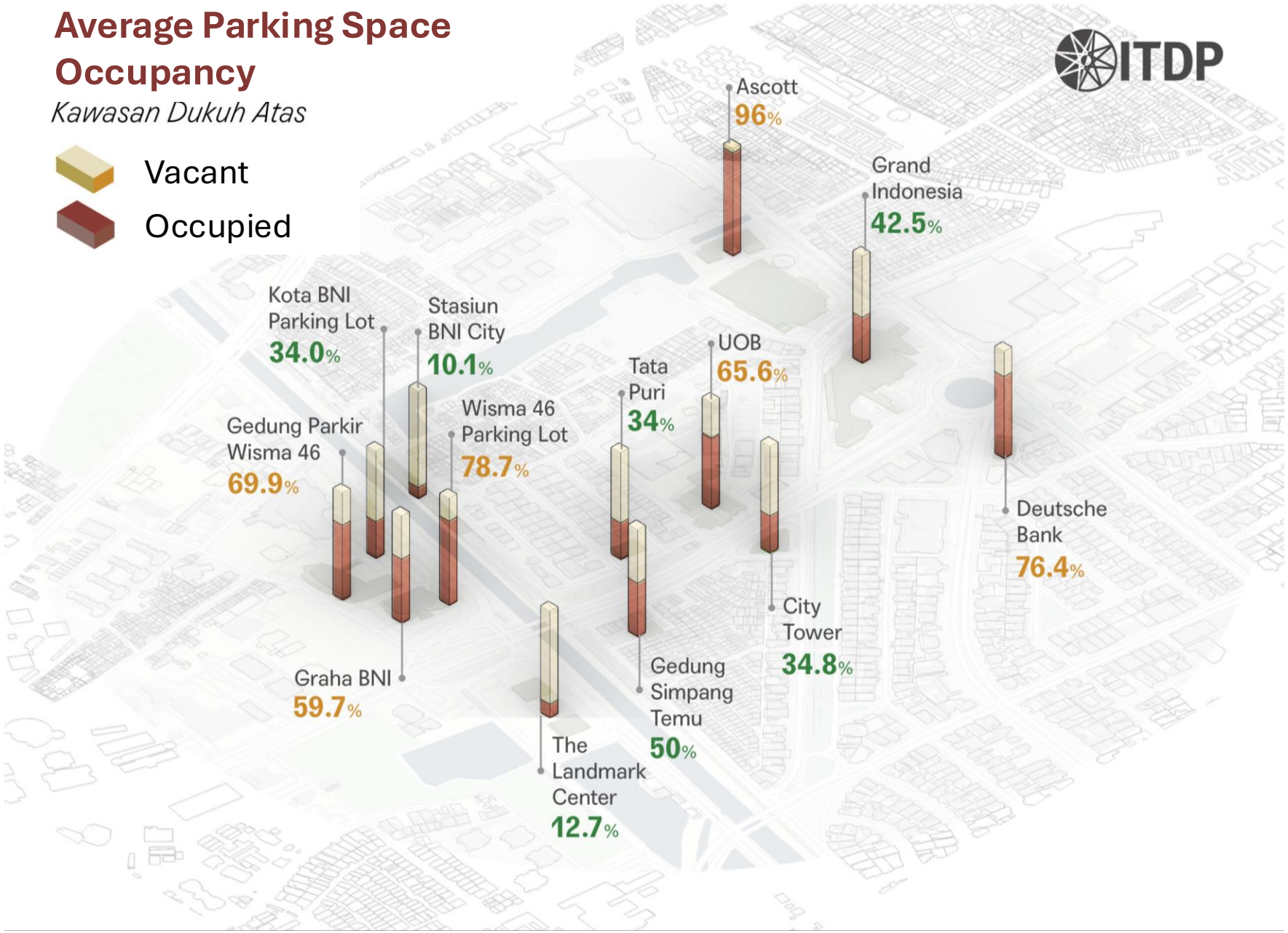
Evaluation Introduction		
Year of policy implementation	2024	
City or district name	Jakarta	
Country or world region (choose from dropdown)	Other EUR/Asia	
Population growth rate	0,57%	growth per year
Growth rate of office space	0,10%	growth per year
Growth rate of commercial (retail, restaurant, etc.) space	0,10%	growth per year
Car emissions factors (choose one from dropdown)	Default emission factors for your region	
Working days per year	240	days per year
Commercial activity days per year	365	days per year

Mandatory user input	Estimate or assumption that may be replaced by user input	Data from a database	Output

Parking Issues

Average Parking Space Occupancy

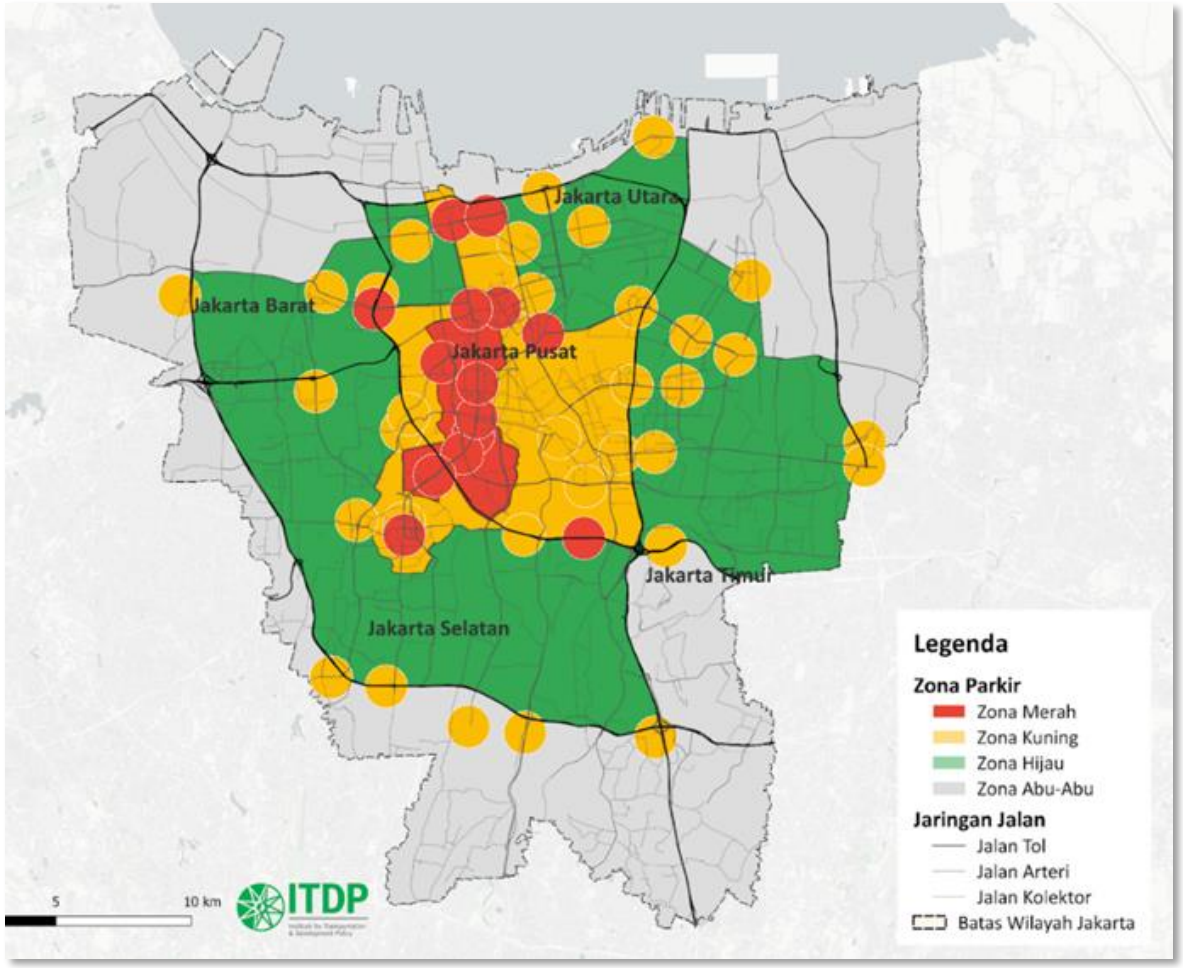
Kawasan Dukuh Atas



The ITDP Indonesia survey (2024) noted that the occupancy rate of parking spaces inside buildings **only reached 80% on weekdays**. In 2022, the figures were even lower: **41% for cars and 58% for motorcycles.**

There are around 30,000 parking spaces inside office buildings and residential areas—**equivalent to 37 times the size of a football field.**

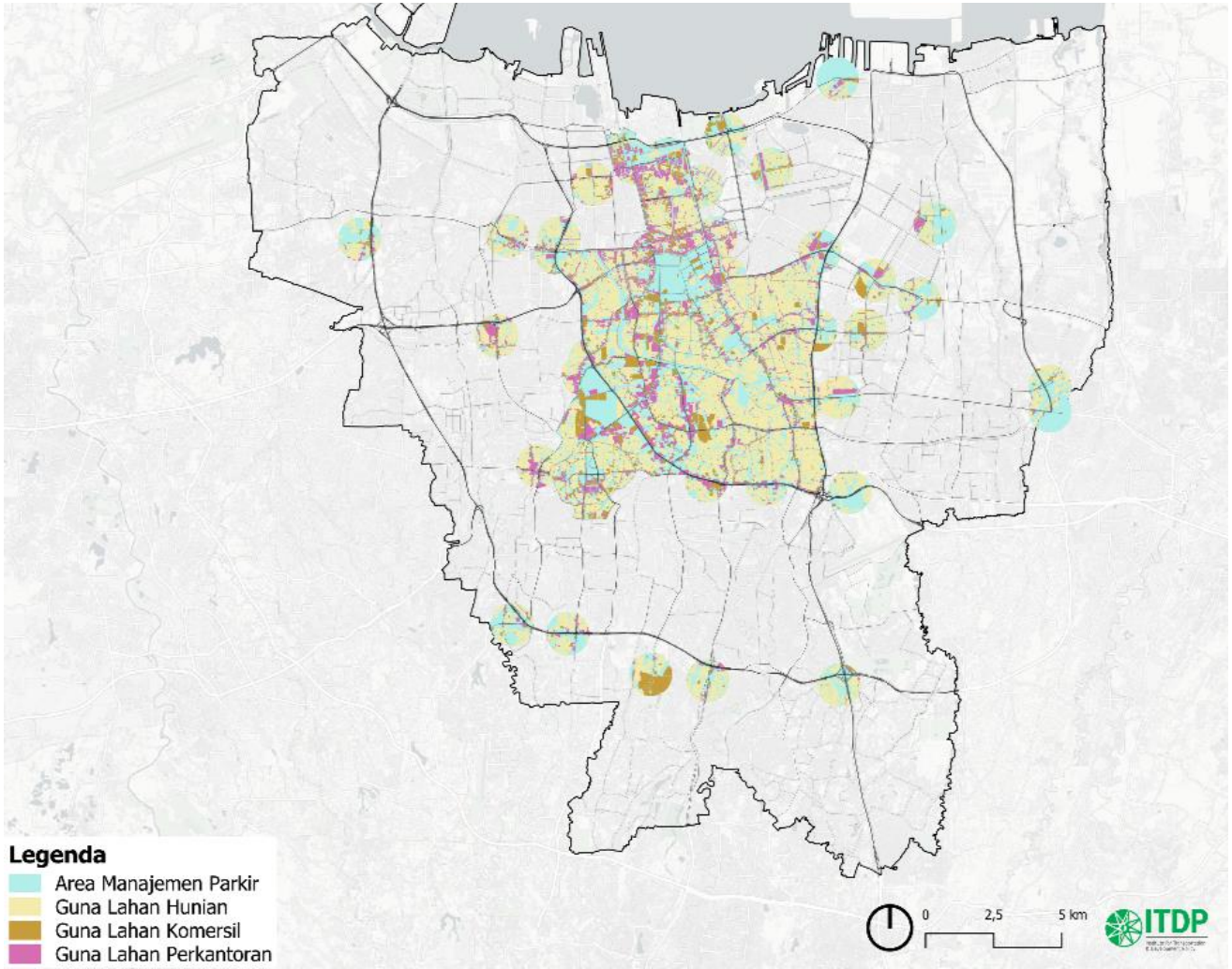
Recommendation Overview



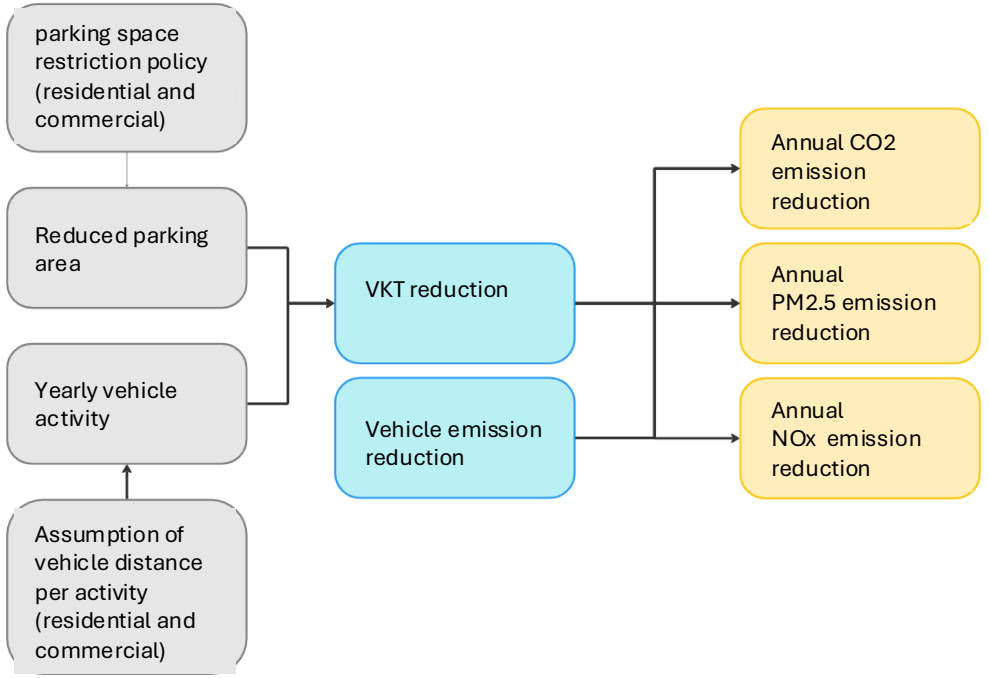
Zone	Criteria	Policy
Red	• Alternative sustainable transportation modes and the most complete push policy intervention. • TOD areas can be categorized into the red zone.	Red zones will apply the most restrictive policies • Rates are 2.2 - 2.9x higher than the posted rate • No on-street parking • Maximum parking 30 minutes - 1 hour • Maximum amount of off-street parking is the same or less
Yellow	• TOD areas can be categorized into the yellow zone. • It is required to have 1 (one) public transportation service and is not included in the electronic fee road (JBE) implementation area.	• Rates are 1.35-1.7x higher than prescribed rates • Maximum parking duration 1-2 hours • No on-street parking
Green	Served by at least 1 (one) feeder public transportation.	Reduction of minimum parking requirements.
Gray	Zones that are not served by public transportation, are not accessible by walking or cycling, and are located in the outer zones of the KRE.	N/A

Impact Assessment

Environmental

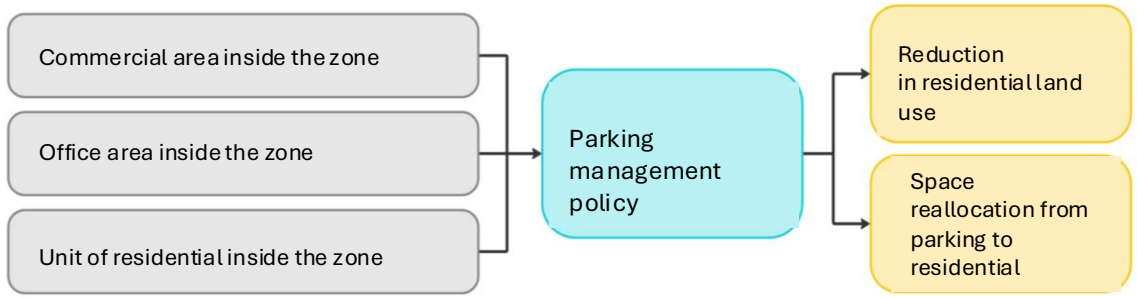


Year	Accumulative carbon emission reduction (000 tons)	NOx accumuative (ton)	PM 2.5 accumulative(ton)
2024	N/A (first year of implementation)		
2030	490	150	18



Impact Assessment

Housing Unit



Reduction of parking space in residential land use	2025	2026	2027	2028	2029	2030
Total unit	12,74	12,81	12,885	12,96	13,03	13,1

Space reallocation in the zone	Parking Space Unit (PSU) ratio	Total of PSU in the zone	Total area for parking (2.5 x 5 m per PSU)	Unit area	Total unit from conversion of parking
25.356.394 m2	0,8 PSU per 100 meters	202.851	2.535.639	36 m2	56.347*

Cycling Infrastructure

ITDP Off Street Bicycle Lane SCOPE Tools

Sketch Model for Predicting Impacts of Protected Bicycle Lane Networks

To use this model, either download it as a .xlsx file and open it in Microsoft Excel, or use Google Sheets to make a copy in your own Drive so that you can edit it: (File -> Make a copy).

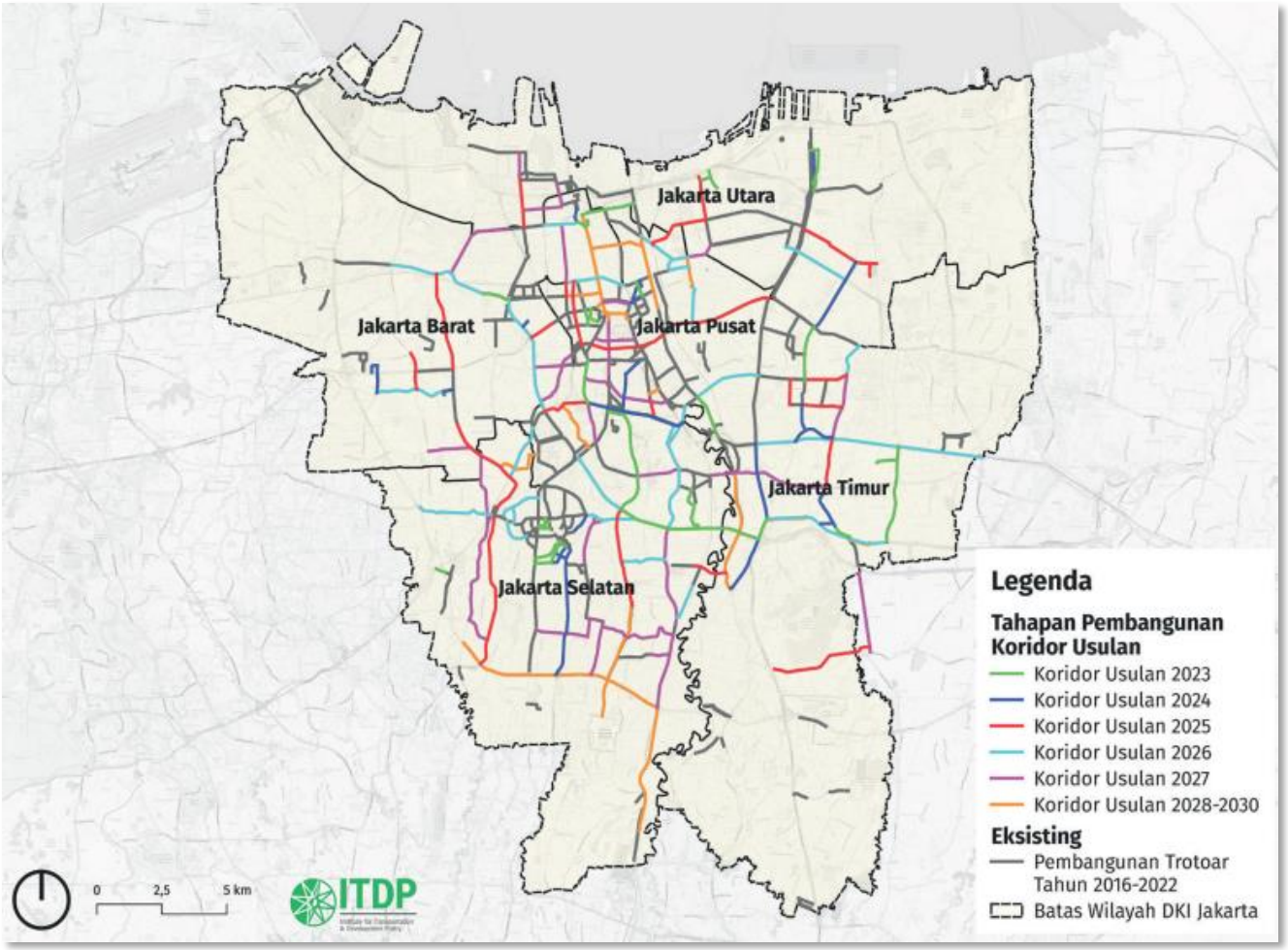
User Inputs

Basic information	City name	Jakarta
	World region (choose one from dropdown)	Other Europe/Asia
	City total population	10.672.100
Bicycle lane network extent: Choose one	People Near protected Bikeways (%) for proposed network (percentage of population within 300m walking distance of a protected bicycle lane)	23%
	OR	
	Length of protected bicycle lane network (km)	

Intermediate calculations	
People Near Bikeways (# of people)	2.454.583
Predicted cycling activity (passenger-km traveled per year on protected cycleways)	**773.193.645**
Modal shift from car	**4,8%**
Modal shift from taxi/ridehailing	**8,3%**
Modal shift from motorcycle	**65,5%**
Total reduction in person-kilometers traveled (pkt) by car	37.308.135
Total reduction in pkt by taxi/ridehailing	64.449.514
Total reduction in pkt by motorcycle	506.658.969

Predicted impacts	
Uncertainty	20,0%
Reduction in GHG emissions (tonnes CO2-eq per year) (min)	**29.000**
Reduction in GHG emissions (tonnes CO2-eq per year) (max)	**44.000**
Reduction in GHG emissions (tonnes CO2-eq per year)	**29000,0 to 44000,0**

Recommendation Overview

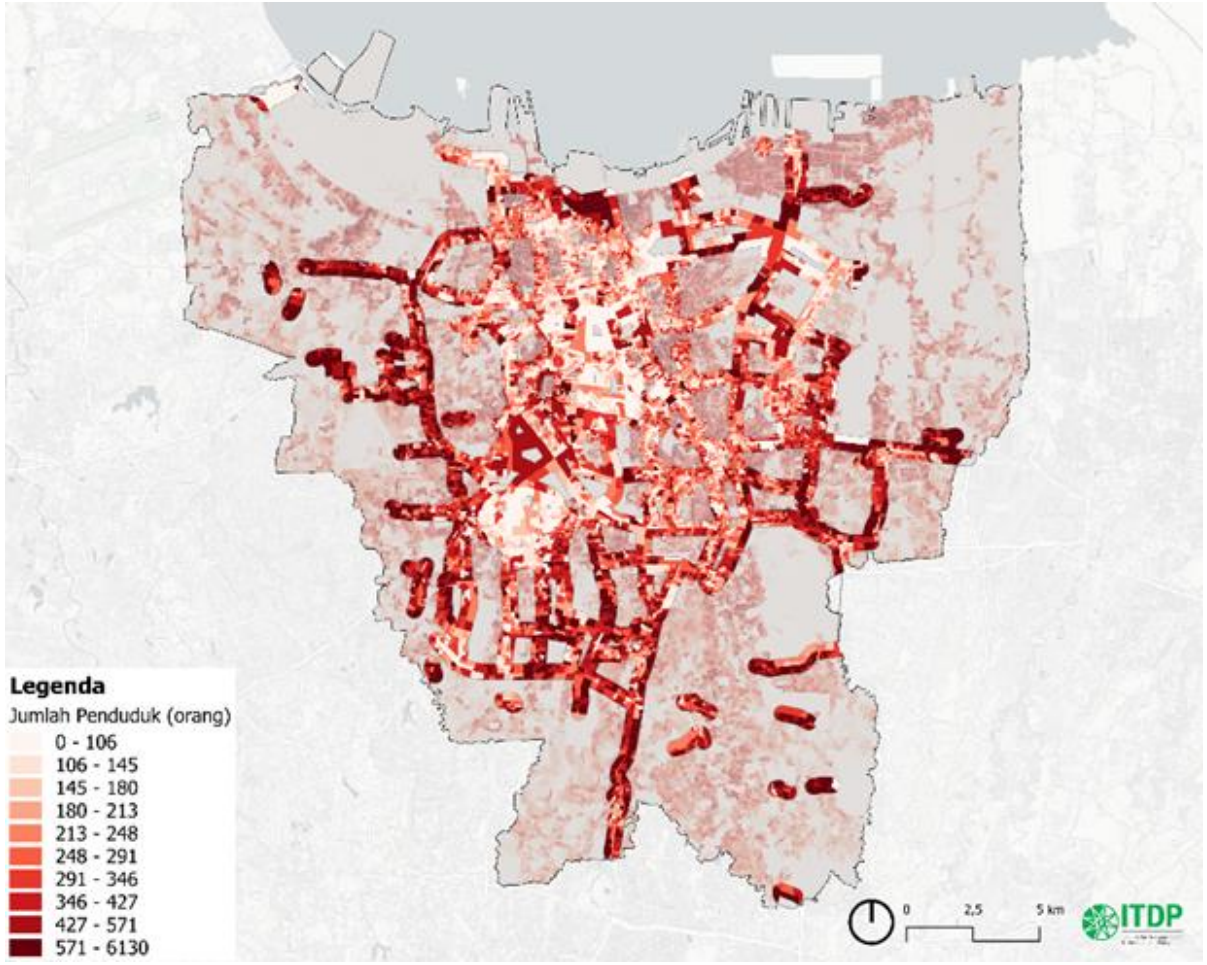


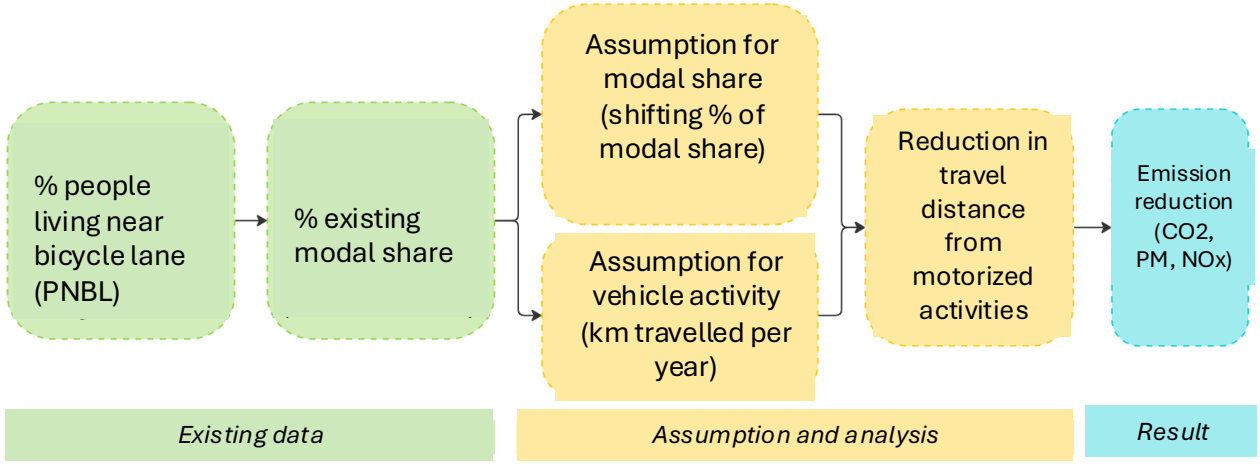
No	Year of construction	Length (m)
1	2023	25.150
2	2024	41.240
3	2025	52.210
4	2026	62.980
5	2027	63.740*
6	2028-2030	42.560**

Infrastructure	Prinsip Utama dan Elemen Desain
Walking	• **Integrated**: connected to neighborhoods, and public transportation nodes in the area. • **Continuous**: uninterrupted; crossing facilities available. • **Safe and Secure**: minimum conflict with vehicles, ensuring a sense of security. • **Accessible**: universal design for all age groups and abilities. • **Direct and Easy**: shortest, most convenient and safe route to the destination.
Cycling	• **Integrated**: consistent, connected origin-destination lanes, with bicycle parking facilities. • **Direct**: quick and close routes, including contra flow lanes and dedicated crossings. • **Safe and Secure**: physical protection, high visibility and speed control. • **Comfortable**: flat surfaces, durable materials and standardized dimensions.

Impact Assessment

Environment





Parameters	2025	2026	2027	2028	2029	2030
CO2 (000 ton)	44	45	44	46	41	35
NOx (ton)	309	307	290	300	263	209
PM2.5 (ton)	2,88	2,87	2,72	2,8	2,47	1,97