Park it Right!
Parking policy for smart cities

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GEF Sustran training course
Nairobi
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“Parklet” in Antwerp
More parking demand

More vehicles attracted
First of all, parking is a commodity, not a right. It comes with a price.

I bought a car but the government hasn’t given me a free place to park!

I bought an air conditioner but the government hasn’t given me a free house in which to install it!
There is unending demand if parking is provided for free
Is multistory parking the solution?

- 3,000 space parking structure planned for CBD
  - In addition to 6,100 existing spaces in CBD
- Nairobi County will cover cost of land

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Nairobi County plans seven-storey automated parking facility

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City Hall has advertised for tenders to construct a Sh4 billion multi-storied car park that will add 3,000 parking spaces in the central business district.

The building, which will also have commercial and office space, will be situated on the Sunken Car Park land adjacent to the Aga Khan Walk and Harambee Avenue.

County Executive for Land, Housing and Physical Planning Tom Odongo said the initial design would be a 17-storey structure, which could go up to 30 floors depending on projected investors' returns.

"So far, what we want is a seven-storey podium which is predominantly a car park. Then we have a tower which is mixed use. This will have offices, restaurants and recreational facilities," Mr Odongo said. He added that the development would be a public private partnership (PPP) with the county providing the land while investors put up capital.

The investors would build, operate and transfer the structure to the county within agreed timelines, but the period would not exceed 30 years.

Parking will be charged based on the amount of time spent rather than the current system where motorists pay a flat daily fee of Sh300. This will provide relief to those who come to the CBD for shorter periods.

"You must have a model of charging that can allow both short-term and long-term parking. Short-term is traffic that is just coming in to do either shopping or something in town and get out," said Mr Odongo.
Regulate the street first

- Unless parking user fee on streets around multi-level parking structure is equal to or more than fee charged for parking in the structure, such structures cannot be financially viable.
How Nairobi residents travel to work

- Public transport: 52%
- Walk & cycle: 41%
- Car: 7%

Masaoe et al 2011
What should the government provide?

Car parking spaces for a few?

OR

Walking, cycling & public transport for all?
Parking policy: Old school

1. Increase in private vehicle use is a given.
2. Parking is a public good. People need it.
3. Govt constantly increases supply of subsidized public parking space—especially through multi-level parking.
4. Govt pushes private buildings to create more private parking space through regulation.
5. Govt creates more road infrastructure to cater to the ever increasing number of vehicles attracted to parking.
Parking policy: Smart cities

1. It is impossible to cater to unending parking demand.

2. Parking is a commodity, not a public right

3. Restrict total supply of parking in every zone: paid parking (on/off street) and private parking (in buildings)

4. Govt charges high user fee for available parking spaces to dissuade excessive motor vehicle usage

5. Govt spends the substantial revenue generated to improve public transport and walking/cycling facilities for all citizens
Get accurate parking data
Inventory of parking spaces
Parking occupancy

Available parking spaces: 726
Occupied parking spaces: 318
Parking occupancy: Dar es Salaam

On-street
Parking occupancy: Dar es Salaam

[Map showing parking occupancy and garage/lot size with legends]

- **Occupancy**
  - Red: Above or equal to 90%
  - Yellow: Above or equal to 70% and below 90%
  - Green: Below 70%

- **Garage/Lot Size**
  - Less than 25 spaces
  - 25-99 spaces
  - 100-149 spaces
  - 150 spaces or more

[Map area with streets and parking occupancy indicators]
Define clear parking rules
Create clear parking & no-parking zones
Customer information

Website
- Real time occupancy
- Parking fee levels at all on- and-off-street paid parking locations
- Account section with the ability to create account and recharge prepaid balance
Get the prices right
Parking fees: international comparison

![Barter 2010](image)
Searching for a parking space

• Cruising for parking contributes to ~30% of congested traffic

• In Nairobi:
  – Average time spent searching for parking: 32 min
  – 13% of respondents had spent over 1 hr searching at least once in previous year
Performance pricing

- Increase fees in areas with high demand

Grosvenor Square in London

No meters

Meter price: £

Meter price: £££££
Performance pricing

Blockwise fee revision in San Francisco
Performance pricing

Budapest parking zones

KES 155 / hr

KES 93 / hr

KES 62 / hr
High demand  ➔ High use fee
(Not more supply!)
Nairobi parking rates

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<th>Fee (KES)</th>
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- Parking rates should be proportional to time
- On-street rate should be higher than off-street rate
Ring fencing of parking revenue

• **London** Freedom passes: elderly and disabled ride public transport free

• **Barcelona**: 100% of surplus from on-street parking fees used to fund the Bicing cycle sharing system

• **Antwerp, Budapest**: Parking fine revenue invested in public transport
On-street parking operations
Nairobi motorists go into cashless parking

NO MORE INCONVENIENCE: After a successful pilot project, the new system will reduce the time Nairobi motorists previously spent in obtaining parking tickets manually. COURTESY PICTURE
PPP structure for parking operations

Government:
- All income from on-street parking; real-time data

Private operator:
- Investment, Implementation, Operations
- Fixed monthly fee with incentives and penalties

Parking system:
- Payment

Vehicle user:
- Payment
Real-time system monitoring to reduce leakage
IT-based enforcement
Paris on-street parking supply trend

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of On-Street Parking Spaces</th>
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<tr>
<td>2003</td>
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<td>2004</td>
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<td>2005</td>
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<td>2006</td>
<td>160,000</td>
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<td>2007</td>
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Overall on-street parking supply was reduced by 9% (14,300 spaces)

4,000 spaces removed to make space for 1,451 new Velib stations (public cycle sharing system with 20,000 bicycles)
100 km of new cycle tracks
335,000 bollards installed to prevent parking on footpaths
Introduction of parking fees

95% of free spots were turned into paid parking spaces

Impact of Paris parking reforms

Vehicle kilometers traveled (VKT), Weekdays, 7am - 9pm, (2003-2007)

VKT: ↓ by 13%
Share of private vehicles in traffic: ↓ 68% to 60%
Car to cycle shift: 5%

Off-street parking
Swiss Re building, London

- 48,000 sq m of commercial space
- 5 parking spaces, all for disabled
- Required parking in Nairobi:
  - 1,200 car parking spaces

60% larger building
Parking requirements

CBD office

Beijing
Singapore
Dhaka
Hong Kong
Guangzhou
Taipei
Seoul
Hanoi
Jakarta
Manila
Kuala Lumpur
Bangkok
Nairobi

Other office

Beijing
Singapore
Dhaka
Hong Kong
Guangzhou
Taipei
Seoul
Hanoi
Jakarta
Manila
Kuala Lumpur
Bangkok
Nairobi

Mall

Beijing
Singapore
Dhaka
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Guangzhou
Taipei
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Jakarta
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Kuala Lumpur
Bangkok
Nairobi

Spaces per 100 sq m
1 parking space (23 - 28 sq m) (with associated driveway)

= Dining space for 15 people

= Office space for 4 people

= 1 affordable housing unit
Paris

- Minimum parking requirement: none if building is within 500 m of a metro station
- Maximum allowed parking: one car space per 100 m² of floor area
Zürich

Public transport access

Zones for reductions in off-street parking caps/reqs
Ahmedabad, India

BRT & corridors in CBD:
• 5.4 FAR
• No parking required

Rest of the city:
• 1.2-2.7 FAR

BRT & corridors
• 4.0 FAR
Supply caps

• Zurich:
  – Caps apply in central areas
  – Outside the area where caps apply, parking only permitted if the street network has sufficient capacity and pollution from the new vehicles will not violate air quality standards

• Hamburg: total parking supply in the central business district capped at 30,000 spaces in 1976

• Amsterdam: one on-street parking space removed for every off-street space created
Nairobi BRT network: opportunity for parking reform
Next steps for Nairobi

• On-street parking:
  – Adopt performance-based fees
  – Strengthen and expand cashless system

• Off-street parking:
  – Remove minimum parking requirements
  – Adopt parking supply cap in areas where the road network is already saturated (e.g., CBD)
Questions?