

Traffic Congestion in Observatory



BY TEAM PENTA

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UCT KNOWLEDGE CO-OP



The UCT Knowledge Co-op facilitated this collaborative project.

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Business Background: Observatory Civic Association



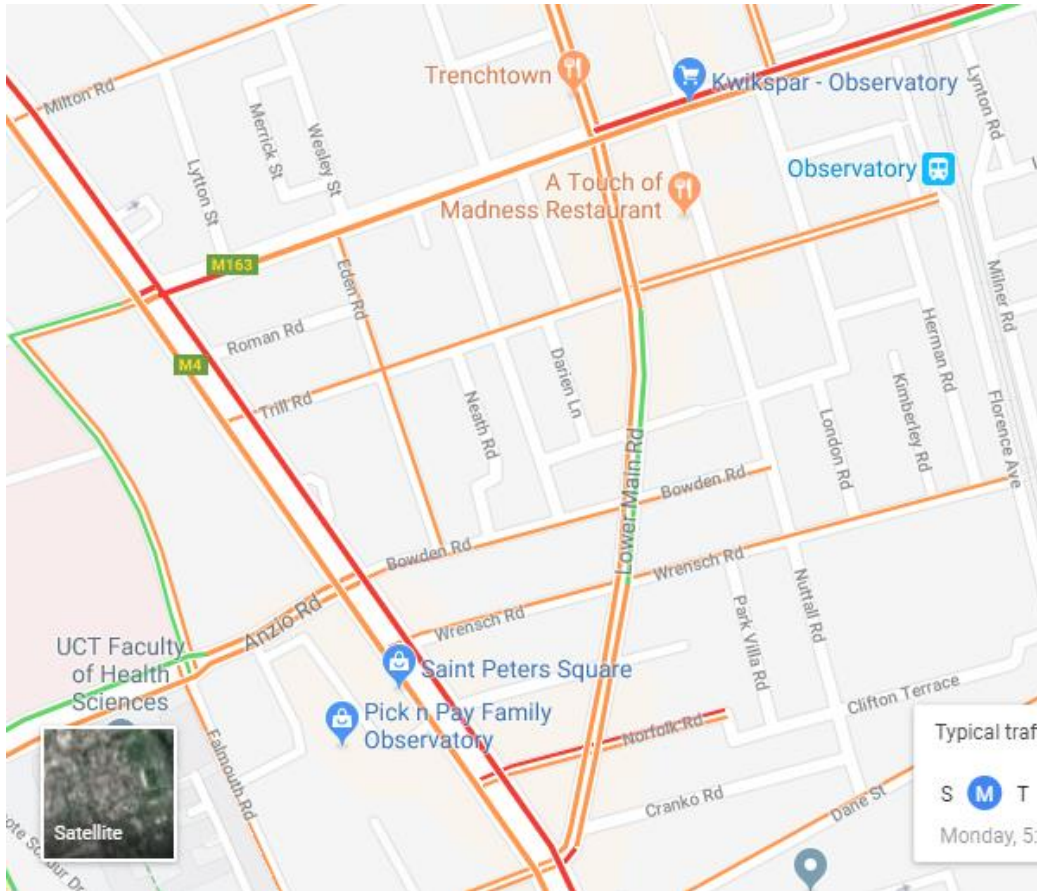
- Non-Political Organisation
- Responsibilities
 - Representing Observatory community
 - Improving Observatory Neighbourhood
- Concerns (within Project Scope)
 - Traffic
 - Parking
- Limited membership size
- International Heritage Status



Business Objectives of the Observatory Civic Association (OCA)



Problem Statement



- Proposal / plan
- Traffic congestion in Observatory
- Traffic & parking management
- Specific to the following area
- Adding value to community

Contributing Factors to Traffic Congestion in Observatory



Narrow Roads



Lack of traffic officers



New developments

Associations With Reduced Traffic Congestion

BENEFITS

- Improved Environmental Factors
- Increased Mental Health
- More Tourists in Observatory
- Monetary Benefits



RISKS

- Residents not taking initiative in acquiring parking disks
- Visitors are unwilling to pay for parking
- Corruption by parking assistants



Proposed Solution: Residence Disk



Development Costs		Year 0	Year 1	Year 2	Year 3
Handheld parking meters		-280000			
Residence disk production		-6000			
Database creation		-2000			
Parking marshal attire and equipment		3600			
Parking marshal screening		-6000			
Total		-290400			
Operational Costs		Year 0	Year 1	Year 2	Year 3
Parking marshal salary			-1095000	-1095000	-1095000
Administration wages			-10400	-5200	-2600
Equipment maintenance			-10000	-12000	-14400
Total		0	-1115400	-1112200	-1112000
Benefits		Year 0	Year 1	Year 2	Year 3
Parking fee revenue			1460000	1387000	1241000
OCA membership revenue			25000	45000	60000
Total		0	1485000	1432000	1301000
Cost Benefit Analysis		Year 0	Year 1	Year 2	Year 3
PV factor 2.5% [rate of return = 6.5(interest)-4(inflation)]		1	0.97561	0.951814	0.928599
Developmental Costs		-290400	0	0	0
Operational Costs		0	-1115400	-1112200	-1112000
Total Costs		-290400	-1115400	-1112200	-1112000
Benefits Derived		0	1485000	1432000	1301000
Net benefits		-290400	369600	319800	189000
Costs (time adjusted)		-290400	-1088195	-1058608	-1032603
Benefits Derived (time adjusted)		0	1448780	1362998	1208108
Net Present Value		-290400	360585	304390	175505
Cumulative Net Benefits (time adjusted)		-290400	70185	374576	550081
Return on Investment	15.85%				
Net present value	550080.9				
Internal Rate of Return	99.03%				
Payback Period	~9 months				

Costs

Benefits

SHORT TERM

- Revenue from parking disks
- Reduction of vehicle theft
- Ease in stolen vehicle recovery
- Increase in OCA membership size

LONG TERM

- Profit from parking disks
- Data from parking meters



Risks

- Residents not taking initiative in acquiring parking disks
- Residents have a negative attitude towards the application process of acquiring parking disks
- Visitors are unwilling to pay for parking
- Corruption by parking assistants



Stakeholder Impacts

The OCA	The City of Cape Town	NGOs
<ul style="list-style-type: none">• Increased number of members in the OCA• Responsible for printing and distribution of parking disks• Public recognition	<ul style="list-style-type: none">• Grant permission to the OCA to implement residence disks	<ul style="list-style-type: none">• Receive donations from OCA acquired from parking revenue

Stakeholder Impacts (continued)

Observatory residents	Visitors (including tourists)	Businesses	Parking Assistants
<ul style="list-style-type: none">• Reduced congestion	<ul style="list-style-type: none">• Reduced congestion• Money needed for parking	<ul style="list-style-type: none">• Reduced congestion• Customers charged to park near restaurants	<ul style="list-style-type: none">• Income• Required to learn how to use the handheld parking meter

Challenges

- City boundaries of Observatory vary from OCA-defined boundaries
- Generation of funding required to start and run project
- Determining beneficiary of generated parking revenue
- Monetary aspect may jeopardize relationship between OCA and City of Cape Town
- Retaining good relationship with Observatory residents



Project Objectives

- Creating a specification of residence disk and handheld parking meter system, which will act as an implementation plan.
- Create a residence disk prototype that will implement security measures to minimize the probability of forgery and corruption.



Project Objectives

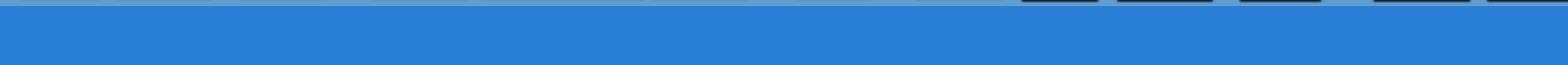


- Conduct a community survey to have a better understanding of how to implement the system such that it accommodates the community while also reducing traffic congestion.
- Propose an effective parking fee structure that will incentivize the use of public transport means.

Prototyping

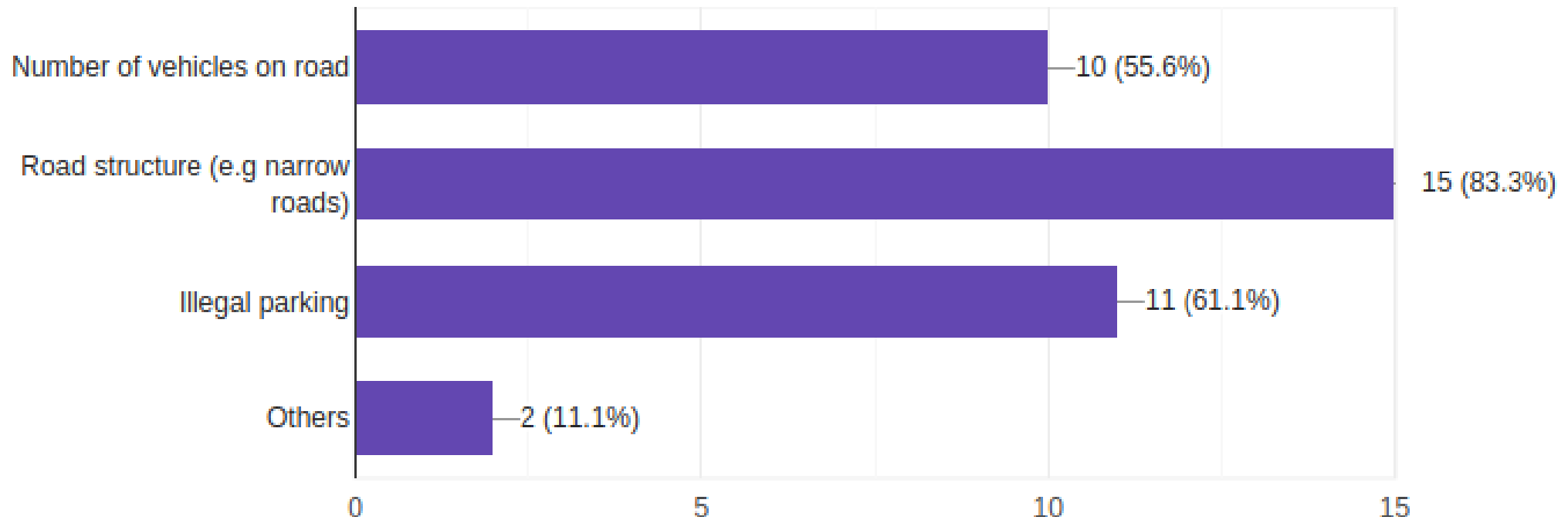


Testing



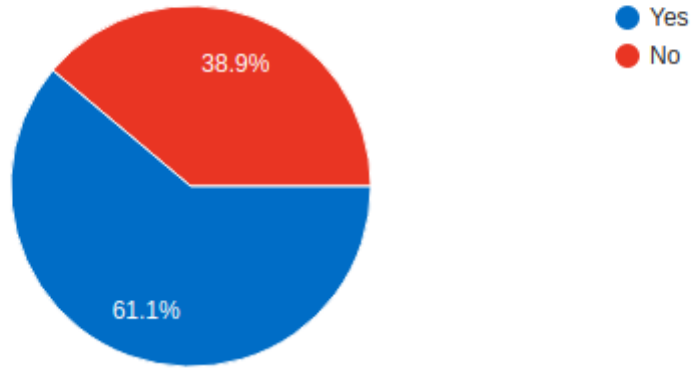
12. What would you consider as the main cause for traffic congestion in Observatory? Multiple answers allowed.

18 responses



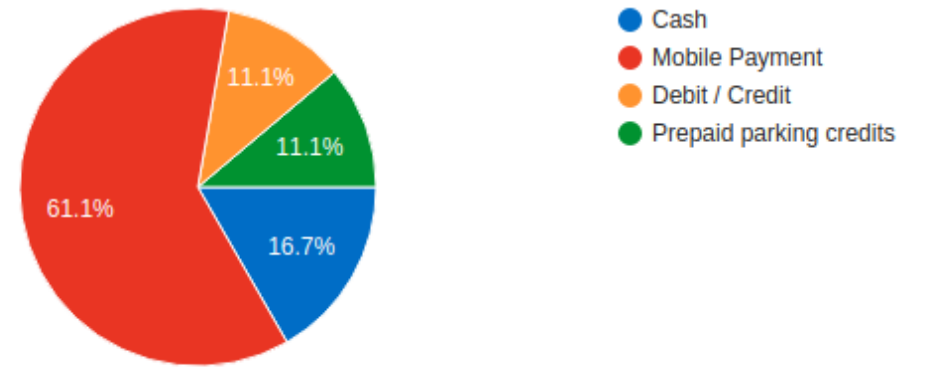
15. Do you still keep cash on hand when travelling in Observatory?

18 responses



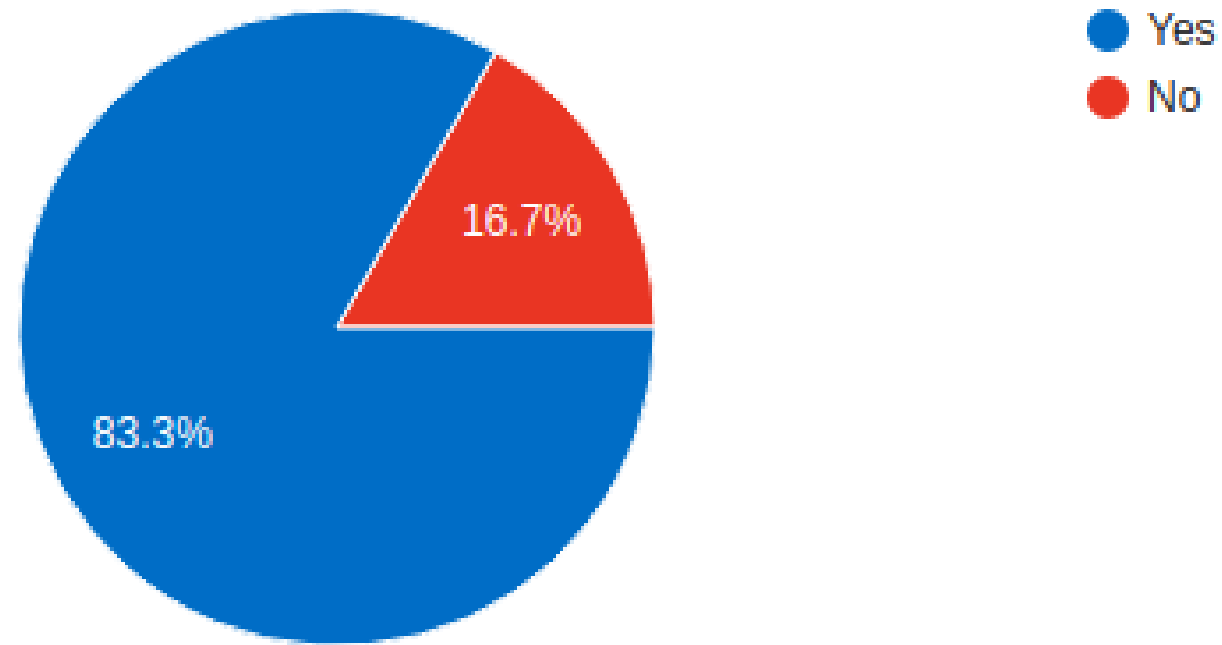
13. What would be your preferred payment method for parking?

18 responses



16. Would you take the initiative of acquiring a free-parking residence disk?

18 responses



19. Would you feel safer in the presence of parking marshals?

18 responses

