

Developing a model to select and rank sustainable workplace mobility plan measures



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Transportation demand management is

influencing people's behavior



to use the existing infrastructure

in more efficient ways.

Mobility Lab™

- Shifting priority away from driving alone
- Improving public transportation
- Educating people about their transportation options
- Collaborating with employers

Workplace Travel Plan (WTP)

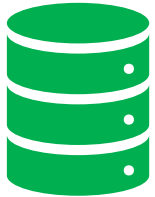


WTP is a package of measures that an employer puts in place to encourage and enable employees to travel to work more sustainably.

Method



Employee Questionnaire
Employer Questionnaire
Site Audit Questionnaire



Measures and
categories

Input data

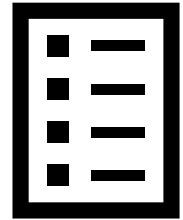
Measures identification and
collection

Database creation

Categorization approaches
Creation of categories

Investigation of mobility surveys
Creation of new questionnaires

Developing connections of
measures and input data

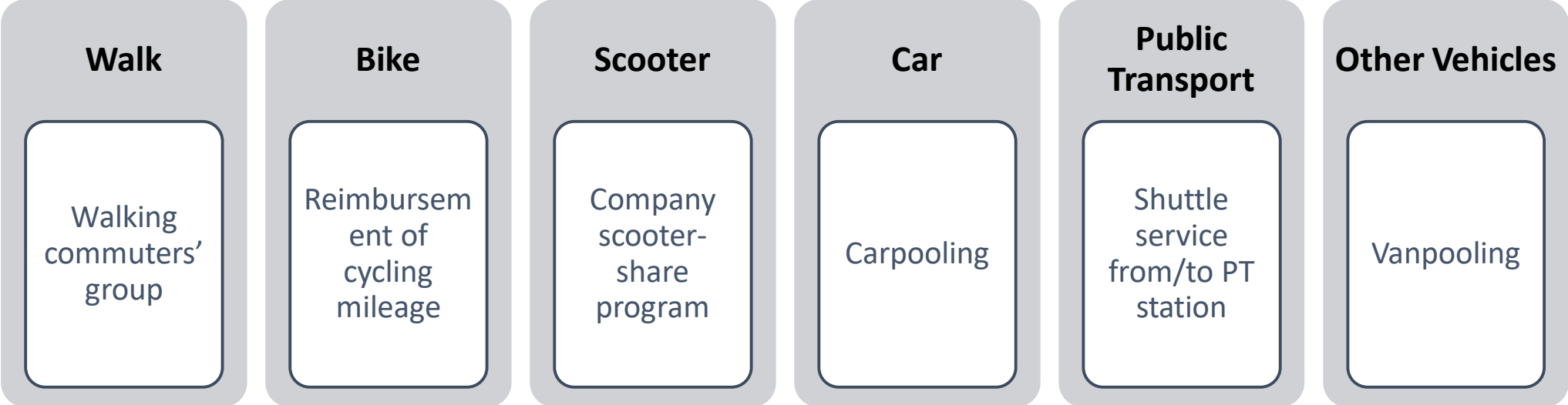


Measures
Ranked

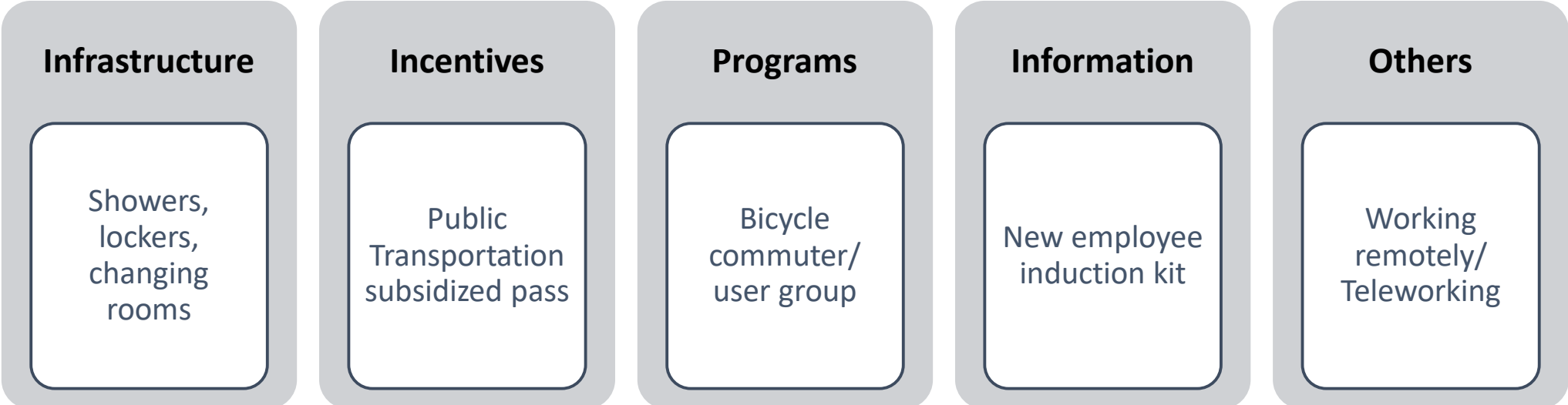
Output data

Categorization

Mode
Type

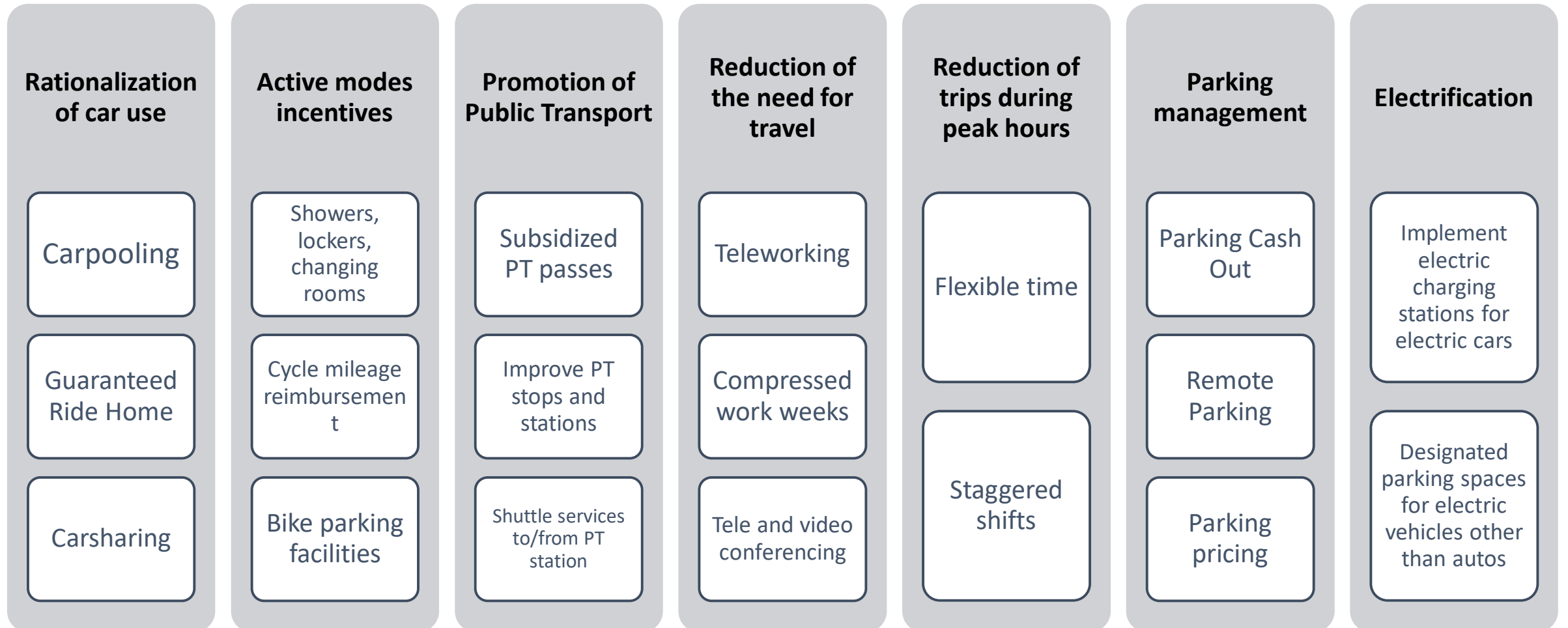


Approach



Categorization

Strategy Cluster



Categorization

Stakeholders

Stakeholders and Level of influence

Municipality

Transport Operator

Private Companies

Urb. Plan. Auth.

Government

NGO's/Associations

Local community

General complexity

Questions

Q1

Q2

Q3

Q4

Q5

Q6

Q7

Q8

Time frame

Implementation phase

Short term

Medium term

Long term

Financial demand

Financial incentives

Parking cash out

Subsidized PT pass

Monetary cost

Lockers, showers

Bicycle commuter group

Investment periodicity

No investment

One-time investment

Regular investment

Occasional investment

Investment level

No investment

Low investment

High investment

Very high investment

Measure classification example

Introduce Parking Pricing

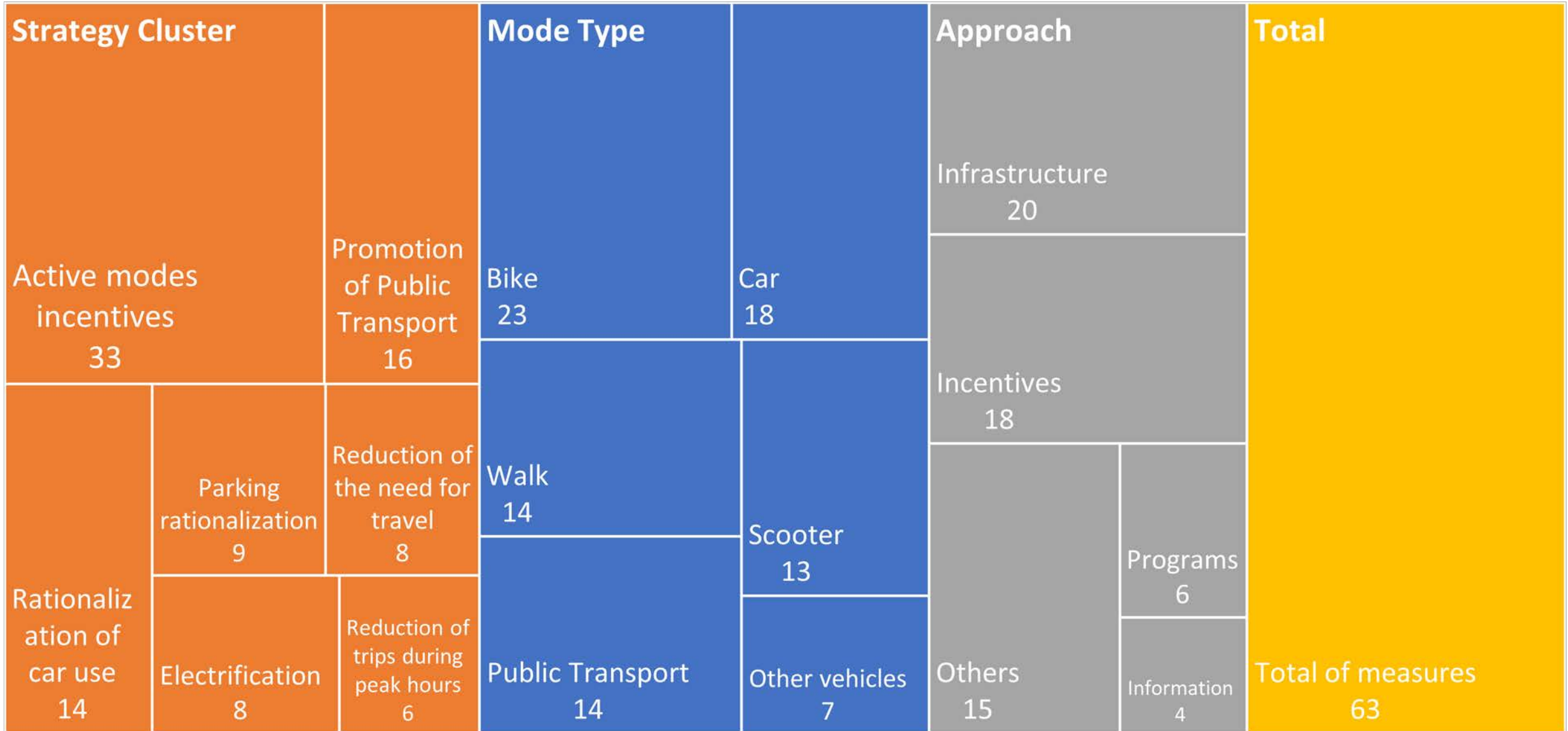


Description	Parking Pricing means that motorists pay directly for using the company's parking facilities.
Mode type	Car
Strategy cluster	Parking rationalization
Approach	Others
	Financial Incentives
Financial demand	No
	Monetary Cost?
	Yes
	Investment Periodicity
	One-time investment
	Investment Level
	High
	Investment Level Reasons
	Costs might involve placing a barrier system, electronic ticketing, card/permit recognition, or safety cameras.
Implementation phase	Medium-term
	Must this measure be managed regularly?
	Yes
	Does this measure require a change in the physical workplace space?
	Yes
	Does this measure require allocating employees to implement it?
	Yes
	Does this measure require allocating employees to manage it?
	Yes
	Does this measure require hiring external services to implement it?
	Yes
	Does this measure require hiring external services to manage it?
	No
	Does this measure depend only on the employer/workplace?
	Yes
	Does this measure affect more than just the company's employees?
	No
Stakeholders	Municipality
	None
	Transport operator
	None
	Private companies
	None
	Urban planning authority
	None
	Government
	None
	NGOs/ Associations
	None
	Local community
	None

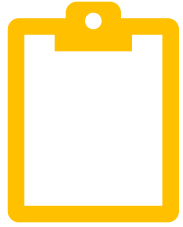
Results

Number of measures per categories

■ Mode Type
 ■ Strategy Cluster
 ■ Approach
 ■ Total



Questionnaires



Employee Questionnaire

- Current mode share of company's commuting trips;
- Reasons for employee mode choice;
- Preferences and opinions of other modes.

How much do you prefer each mode of transport?

Select the main reasons for choosing your primary way of commuting.

Do you own a car? Bike? Regular PT Pass?



Employer Questionnaire

- Policies in place related to employee mobility;
- Employer preferences and willingness, and financial possibilities.

Does the workplace provide free or subsidized public transportation passes to employees?

Does the workplace offer financial incentives for carpooling?

Does the workplace charge for parking?



Site Audit Questionnaire

- Assessment of workplace physical infrastructure;
- Assessment of workplace surroundings conditions.

Does the company have a private parking lot?

Are showers and lockers provided on-site to employees?

Are roads, cycle lanes and paths or shared paths serving the site conducive to cycling?

Connections and ranking

Question #	Question	Answer Type	Answer
2.4	Are there bicycle parking spaces available for employees? (bicycle racks or bicycle lockers)	Yes/No	No

Measure / Question	2.4
04	1.1
14	1.1

Encouragement factor

Measure #	1 - Parking								Final measure factor
	1.1	1.1.1	1.1.2	1.1.3	1.1.4	1.1.5	1.1.6	n	
01	1	1	1	1	1	1	1	F1n	1.1
02	1	1	1	1	1	0.9	1	F2n	0.9
03	1	1	1	1	0.9	1	1.1	F3n	0.99
04	1	1	1	1	1	1	1	F4n	0.99
05	1	1	1	1	1	1	1	F5n	1
06	1	1	1	1	1	1	1	F6n	1.1
A	FA1.1	FA1.1.1	FA1.1.2	FA1.1.3	FA1.1.4	FA1.1.5	FA1.1.6	FAn	

Factor Table for Site Audit

$$MF_A = \left[\left(\prod_{Q=1}^n F_{AQ} \right)_{\text{Site Audit}} \times \left(\prod_{Q=1}^n F_{AQ} \right)_{\text{Employer Quest.}} \times \left(\prod_{Q=1}^n F_{AQ} \right)_{\text{Employee Quest.}} \right]$$

MF_A is the final measure factor for measure A; F_{AQ} is the factor value of measure A for question Q.

Example application



Fictional Site Audit
Questionnaire

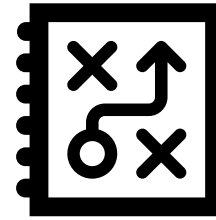
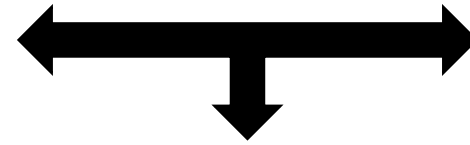
Number	Question	Answer
<u>1</u>	<u>Car Parking and Parking Issues</u>	
1.1	Does the company have a private parking lot?	Yes
1.1.1	Total number of parking spaces	50
1.1.2	Are there designated spaces for carpooling?	No
1.1.3	Are there designated spaces for company cars?	No
1.1.4	Are there designated spaces for electric cars?	Yes
1.1.5	Does it have electric charging stations?	Yes

Measure	
#	Description
42	Designated parking spaces for carpooling vehicles in company's parking lot
56	Designated parking spaces for company car in the company's parking lot
1	Support infrastructure for pedestrians and bicyclists like showers, lockers and changing rooms
11	Enhance public bicycle infrastructure in the urban core or surroundings of workplace
34	Introduce or increase flextime
43	Parking Cash Out

Research
summary



Employee Questionnaire
Employer Questionnaire
Site Audit Questionnaire



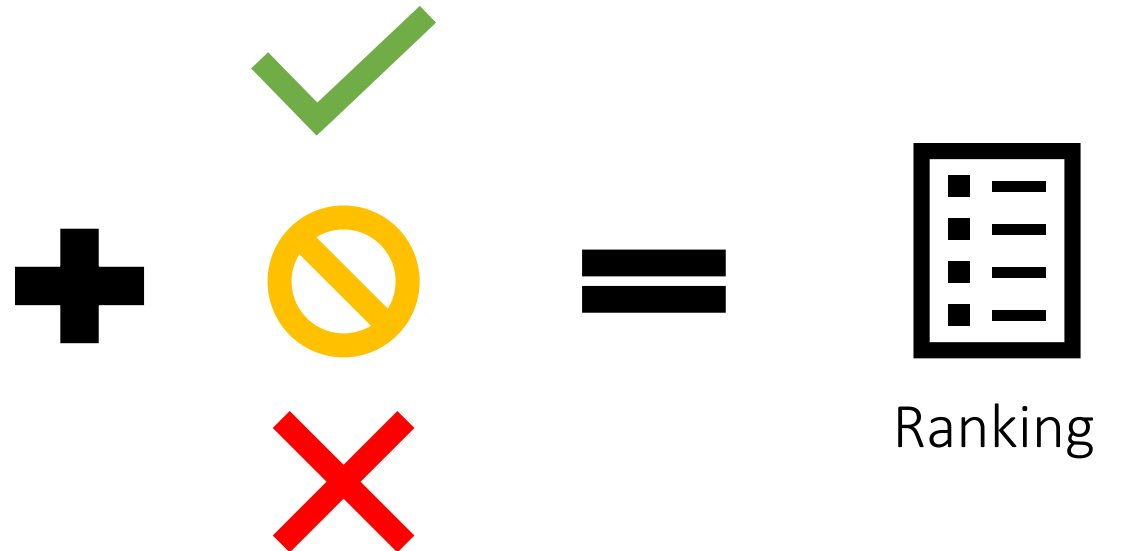
Connections

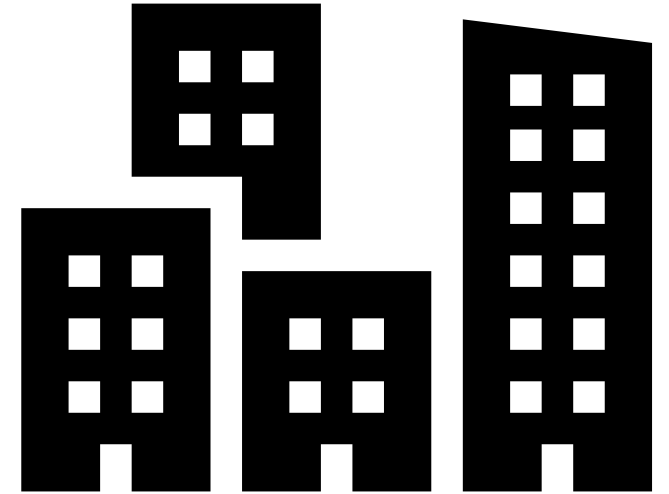


Measures and
categories

	<ul style="list-style-type: none">• Encouragement• Discouragement• Disabling
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Factor table





Thank you for your attention!

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