Number/code: OM/ML8

Title: Bike and electrical scooters sharing

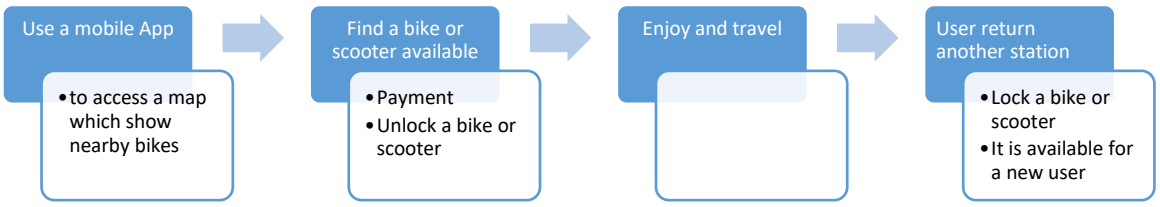
Guidelines section:

	Governance	X	Operational management

	Context of the event		*Procurement*
	Event	X	*Mobility and logistics*
	Stadium management		

Description:

Bicycle-sharing or electrical scooters system is a service in which bicycles or electrical scooters are made for shared use to individuals on a short-term basis for a price or free. A bike or scooter system allow people to borrow a bike from a "station" and return in at another "station" belonging to the same system. Stations are special bike racks that lock the bike, and only release it by computer control. The user enters payment information, and the computer unlocks a bike. The user returns the bike by placing it in the station, which locks it in place. Form many systems, smartphone mapping apps show nearby bikes and open stations.



It is mandatory that there are situations in the vicinity of the stadium.

Environmental benefits:

This system can reduce traffic congesting and consequently reduce air pollution (Carbon emissions) through decreased automobile usage.

Economic benefits:

This system reduces each person's travel costs such as: fuel costs, tolls, the stress of driving and the cost of vehicle repairs.

Applicability and replicability potential

This practice can be applied and replicated to all stadium/cities.

This system is compatible with practice OM/ML1 – Carpooling Initiative or also partnership with public transport sector. An adept, a volunteer, a worker or also a tourist can complement their mobility with both initiatives, depending on the distances you want to travel.

This initiative can be disseminated for example in airports, ticket offices, among others.

Sources

VOISCOOTERS

SANTANDER CYCLES

ENCICLA

Case studies:

VOI SCOOTERS

Voi Scooters was the first e-scooter operator to conduct and publish a full Life Cycle Assessment to understand the climate impact of its e-scooter service. The LCA measures all environmental impacts, direct and indirect, related to transporting one person for one kilometer on an electric scooter. The assessment was conducted by EY and mapped out all emissions linked to delivering the service.

EY's full life-cycle assessment of Voi's Paris operations showed that Voi's service emits 35g of CO_2 equivalent per person per kilometer in Paris, France. The main contributors to these emissions are the production and transport of the e-scooters from production sites to Europe. Emissions from usage and operations have been significantly decreased, 0.3g and 1.1g, respectively, thanks to the use of cargo bikes and e-vans powered by renewable energy. Voi's strong focus on repairs, reuse of spare parts and recycling of materials enabled the production impact to be offset significantly.

In Q1 2019, the life-cycle assessment of Voi's Paris service measured CO_2 equivalent per person per kilometer at 121g, for early-generation scooters, a 12-month scooter lifespan and combustion engine operations. In Q3 2019, emissions decreased to 68g. Multiple factors contributed to this reduction, such as higher scooter lifespan, increased utilization and fully electric operations using e-vans. In Q1 2020, the transition to a fully swappable battery scooter fleet, which enables cargo bike operations and increased lifespan further reduced the emissions by 51% to 35g $CO_{2\text{-eq.}}$ per person per kilometer. The Voiager 3 has an estimated lifespan of 24 months; nearly 90% of it is made of easily recyclable materials, enabling high recycling rates for scooter parts that cannot be reused (99% or above recycling rate for aluminum, steel and plastic, and a 70% recycling rate for lithium-ion batteries). Combined, these initiatives reduced Voi's emissions by 71% in Paris since its launch in January 2019.

Comparing life-cycle assessments of different transport modes is not straightforward given varying assumptions and limited studies on life-cycle impact of transport modes. The study revealed that on average, in Paris, the CO_2 impact of Voi's service is similar to that of public transport. In particular, based on available data, the report stated that Voi's per person CO_2 impact in Paris is above the metro

(12–23 g), roughly on par with that of an electric bus (16–48 g), and less than a train and a diesel bus. E-scooters are well below cars.

Source:

https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/automotive-and-transportation/automotive-transportation-pdfs/ey-micromobility-moving-cities-into-a-sustainable-future.pdf

MOBILITY LAB

From September 2018 to December 2019, the County Board in Arlington launched a demonstration project (pilot) intended to evaluate the community impacts of dockless electric-assist (e)-bikes and electric stand-up scooters, together referred to in the pilot program as shared mobility devices (SMDs).

By doing so, Arlington County joined many other cities, such as Portland, Oregon and Santa Monica, California, in piloting SMDs in their respective jurisdictions. Results from pilot programs undertaken in these cities indicate the potential for SMDs to advance sustainability, promote equity, and increase accessibility and mobility.

The report supports evidence that SMDs provide a viable complement to the County's transportation ecosystem that increases mobility options and provides potential sustainability benefits. In terms of advancing sustainability, SMDs could act as a complement to a multimodal system, promoting transit use and decreasing the need to own a car or travel by car, especially for short trips.

For instance, according to a survey carried out within this study, 38% of SMD riders indicated using less services such as Uber and 31% using less their personal cars. In terms of impact on walking, 17% of respondents said they walked less often which is not surprising, although another 11% of respondents also said they walked more, ostensibly to pick up SMDs from nearby locations.

Overall, results of the pilot confirm that SMDs are popular, with high number of trips and adoption, they are positively perceived by those who use them and provide sustainability and equity benefits as they increase active transportation and access.

There remain some challenges with the integration of SMDs in Arlington that will need to be addressed, including safety concerns from the standpoint of riders, pedestrians and drivers pointing to the need for more adequate infrastructure (e.g. protected bike lanes).

Source:

https://1105am3mju9f3st1xn20q6ek-wpengine.netdna-ssl.com/wp-content/uploads/2019/11/ARL_SMD_Evaluation-Final-Report-1112-vff-2.pdf