Appendix 1a

Customer specification of requirements

Purpose

The City of Bergen is tendering for a digital tool to help the city better manage shared mobility with small electric vehicles in the public right of way through data sharing with private mobility providers.

Definitions

The meaning of some of the terms used in the tender

1. **Operator:** Private mobility provider that rents out small electric vehicles.
2. **Small electric vehicles (SEVs):** Small electric vehicles, e.g., e-scooters, and bicycles with an electric motor (e-bike).
3. **Areas:** Unless more precisely named includes parking areas, no-riding zones, no-parking zones, slow-riding zones and other digitally defined areas with a policy or analysis purpose.
4. **System:** The digital tool/platform/system for managing shared mobility with small electric vehicles.
5. **The city:** City of Bergen, represented by the Agency for Urban Environment

This tender is published by the Agency for Urban Environment, acting as the municipal **Transport Authority** on behalf of the City of Bergen.

Regulation principles and policies for the City of Bergen

The regulation for shared micromobility (the rental of small electric vehicles) in the City of Bergen is based on local regulations passed by the city council on March the 30th, 2022. This local regulation is derived from the national law passed by the parliament on the 18th of June 2021. The local regulations are available for download here [link] (Norwegian language).

The regulation describes a public permit scheme (a form of licencing) where maximum three operators are granted a permit to offer their services in the city for a two-year period.

Licencing periods are defined to be two years, but the first licencing period lasts for 22 months, from June 1st 2022 until April 1st 2024.

The regulation defines four main regulation zones for the city. Zones 1 and 2 have caps on the number of vehicles that needs precise monitoring in real time. Caps for zone 3 and 4 (and total cap) are not set in the regulation but may be set by the city if necessary. Other regulation geofenced zones are not set in the regulation but defined by the city in the regulation system and conveyed to the operators digitally via MDS Policy API.

To monitor compliance with caps, no-go- slow- and no-parking zones, the city requires the operators to share real time data through MDS Agency API. All endpoints except Agency Stops are required. This data becomes historic when stored and forms the basis for statistics and analytics.

All regulation zones are defined and updated digitally and made available for the operators through the MDS Policy API. This includes zones with caps, no-riding zones, no-parking zones, slow-zones and zones / areas dedicated to parking. Zones can be permanent or temporary and set to be valid at only certain times of the day or week. The zones are dynamic and may be changed by the city when

needed. The operators are notified of important changes and are required to have the zones updated in their systems / apps within the following workday, unless another deadline is defined by the city.

Description

The system digitally monitors SEVs and manages policies. The system also provides the city with insights and analysis based on the collected mobility data.

Main functions required:

- **Regulation.** Features to enable regulation. Enables Bergen to manage SEVs in the public right of way. Such as sending policies to operators and using real time data for monitoring and control.
- **Analytics**. Features for insights and analytics. Receiving and saving real-time data enables the city to analyse current and historic use patters. This provides information such that Bergen can better regulate and plan transport.

Technical aspects required:

- Must integrate with bergenskart.no, the municipality's public map service. This is to have an open map showing the areas to the public. Link to map
- Handle two-way data sharing through the MDS Policy API and the MDS Agency API (Mobility Data Standard).
    - At the start the system must be up to date on Release 1.0.0 or higher.
    - Newer releases of the MDS standard must be implemented within 90 days of being requested from the city, unless a longer deadline is specified.

Criteria

The city will evaluate both features and ease of use of the system. The features the city wants are split into three parts:

1. **Must-have**. Minimum requirements for the system. Lacking any of these features disqualifies from the tender. The quality of these features will be evaluated.
2. **Should-have**. Features that are more important to the city than nice-to-have features.
3. **Nice-to-have**. Features the city considers an asset.

The should-have and nice-to-have features mentioned below is not an exhaustive list. They are meant to give an idea of what Bergen is looking for. Other features not listed that aids in fulfilling the needs of Bergen may be put into one of the categories by the city when evaluating the offer.

Features for evaluation

In addition to features described blow, suppliers may submit a descriptive roadmap for upcoming features. They might be evaluated positively, but not at the same level as an equivalent feature already implemented.

Listed in the sub-chapters below are features in the system or actions a user may perform in the system:

Regulation and monitoring

A) Must-haves
   1. User profiles for authorized persons using the tool
   2. Show live location of SEVs not on a trip
   3. Digitally define areas with polygons
      i. The city can set the maximum velocity of the SEVs in slow-riding zones
      ii. The city can custom name areas
      iii. Parking areas can exist inside no-parking zones
   4. Monitor the daily average number of SEVs per operator in areas with a vehicle cap
   5. Aerial or satellite photo as a map layer option

B) Should-haves
   1. Adjust one area independent of the others
   2. Set areas as inactive (and re-activate when needed)
   3. Slow-riding zones can be set as active for custom times. E.g., Mon.-Fri.
   4. Possibility to write internal notes / comments on areas
   5. Areas can have multiple policies. E.g., slow + no-parking

C) Nice-to-haves
   1. Orthophoto as a map layer option
   2. User profiles can have different levels of access / editing rights
   3. Possibility to import geographical features. E.g., GeoJSON-files
   4. A log on changes to an area. E.g.:
      i. when it was created
      ii. when the geometry last was changed
      iii. which user performed the change
   5. Functionality that lets citizens report SEVs that are not correctly parked

The should-have and nice-to-have features mentioned is not an exhaustive list. Other features not listed will also be evaluated.

Analytics

A) Must-haves

Display the following data from the operators. It must be possible choose a custom period of time of data, e.g., January 5th to March 14th. It must be possible to see the data from individual operators and the total from all operators.

   1. Number of trips
   2. Average and/or median trip distance
   3. Average and/or median trip duration
   4. Number of SEVs
   5. Trips per SEV per day
   6. SEVs in the public right of way
   7. Graph displaying the number of SEVs over a period of time
   8. Graph displaying the number of trips over a period of time

B) Should-haves
   1. Heatmap over historic data on parked SEVs
   2. Define areas without policies that track the number of SEVs

3. Graph displaying the distribution of trips by
    i. duration
    ii. distance
    iii. time of day
    iv. days
4. Percentage of time SEVs are available when in public right of way
5. The City of Bergen uses the app “Feilparkering” and task manager from Nivel AS, allowing citizens and municipal officers to report wrongly parked vehicles. The system should be able to integrate with this application, to allow updated MDS vehicle states as well as statistics and analytics from the data collected.

C) Nice-to-haves
1. Quick selection of time periods. E.g., last week, last month, etc.
2. Ability to group areas
3. Public dashboard with aggregated data

The should-have and nice-to-have features mentioned is not an exhaustive list. Other features not listed will also be evaluated.

Support

The offer must describe the level of support included. It is possible to offer several options of service level with a different cost. Bergen will then consider the option that most fit their needs.

Use case scenarios

The applicants must submit a step-by-step user guide on how to use their tool to implement the following scenarios. The purpose is that with the guides, someone who has never used the tool before should be able to implement the scenarios. They showcase the functionalities and the user-friendliness of the system, and will be evaluated as a part of criteria A.a “Quality of system”.

Scenario 1

The city wants to regulate the area shown in Figure 1 with the following rules:

- The orange box is a no-parking zone. It is not possible to end a ride expect for at designated parking areas. It is to be named “No-parking – Lyder Sagens”.
- The green box is a designated parking area. It is the only place it’s possible to end a ride inside the orange box. It is to be named “P-area – Fosswinckel 1".
- The purple box is an inactive designated parking area. The city plans to create a parking area here but has yet to do so. The area is not visible to users. It is to be named “P-area – Fosswinckel 2".
- The blue box is a slow zone. Here the speed is limited to 12 kph, Mon-Fri 07:30 – 16:30. It is to be named “Slow - Fosswinckel”.

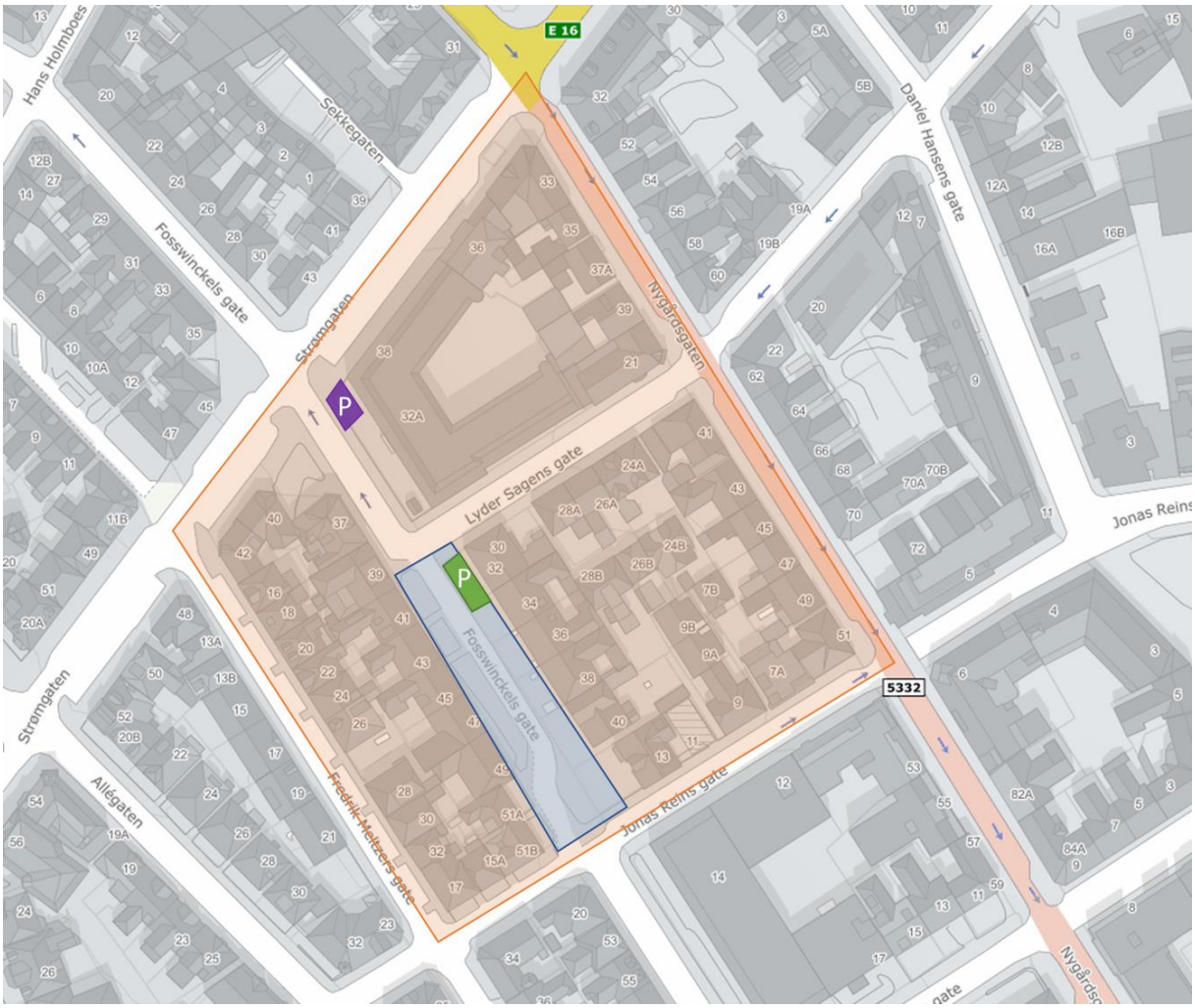

Figure 1: Scenario 1

The location of the area is an example. The user guide may be generalized in another place/neighbourhood.

Scenario 2

The city currently has the situation as on the left side of Figure 2Figure 2: Scenario 2, Left: Current, Right: .

- The red box is a no-go/no-ride zone where users can't ride the SEVs. It is named "No- go - Møhlenpris".
- Green box is as in scenario 1. It's named "P-area – Welhavens"

The city wants to relocate the parking area to the situation on the right side of Figure 2 and therefore has to change the shape of the no-go zone to allow access to the new location.

- The no-go zone is reshaped and renamed to "No-go - Møhlenpris 2022"
- A new parking area (green) is created and named "P-area – P. Hansteens"
- Previous parking area (purple) is set as inactive.

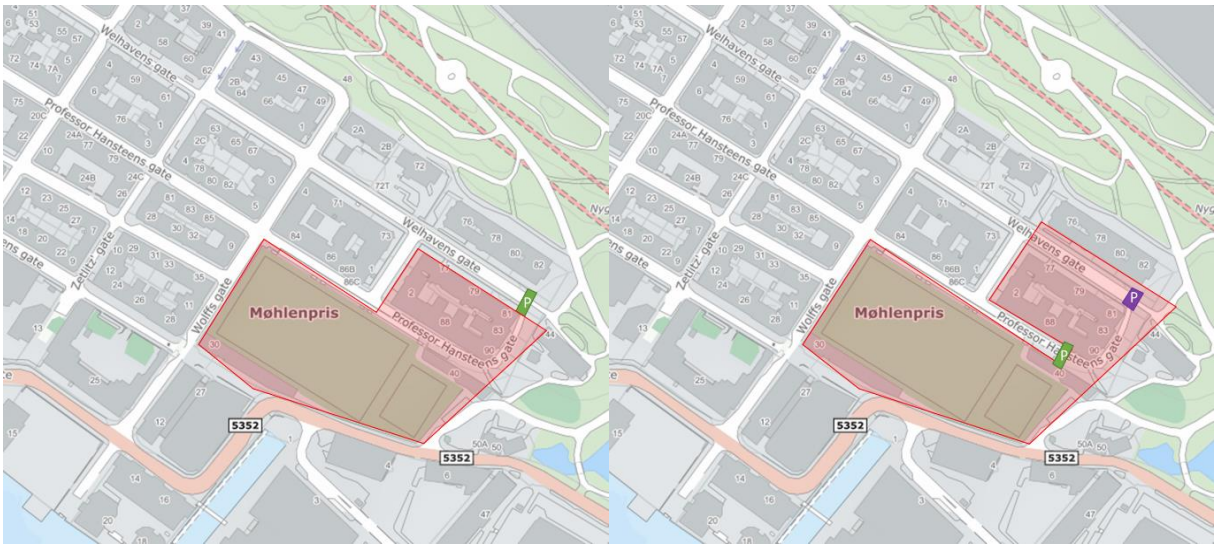

Figure 2: Scenario 2, Left: Current, Right: Future

The location of the area is an example. The user guide may be generalized in another place/neighbourhood. The no-go zone must be of a similar shape.

Scenario 3

The city wants to analyse the development of the number of e-scooters in a suburb. The following applies:

- The blue area is named “Indre Åsane”. It is to track the number of SEVs in the area over time. It is also an area where it’s only possible to end a ride at designated parking areas.
- The orange area is named “Ytre Åsane”. It is to track the number of SEVs over time within the area excluding the SEVs within the blue area.

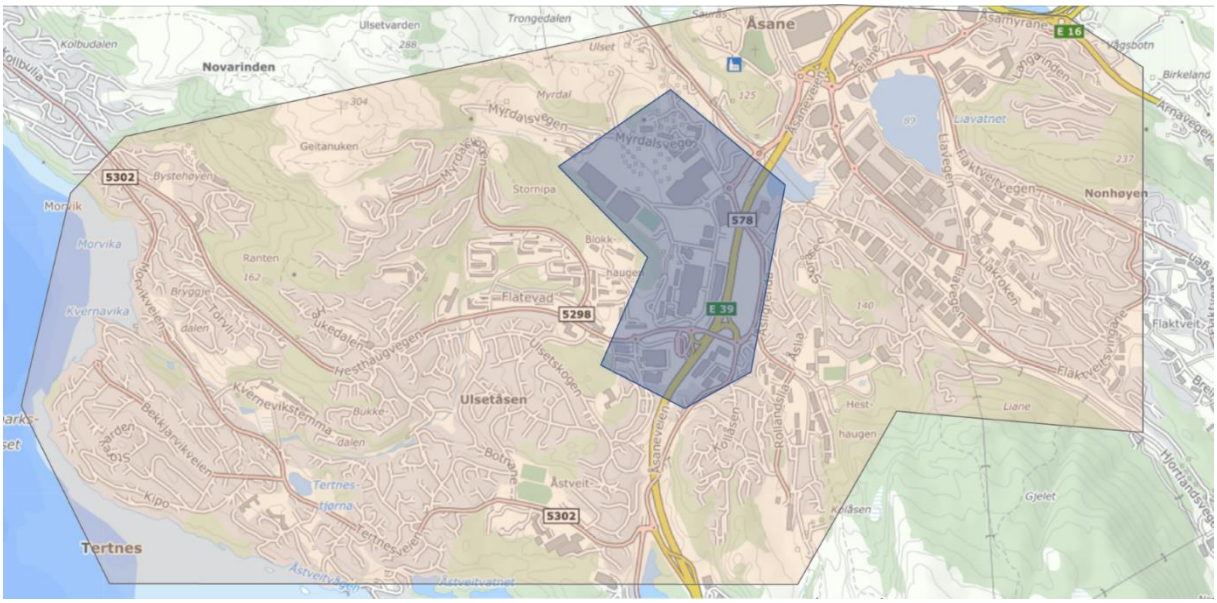

Figure 3: Scenario 3

The user guide may generalize the scenario at another location and use other shapes. The purpose is to analyse/track the number of SEVs in an area, not counting the SEVs located in a smaller area

within the forementioned area. The smaller area can analyse the number of SEVs and be attributed policies.

Data protection

The supplier must describe their routines for data protection and handling of personal data, according to GDPR. The City of Bergen acknowledges that certain real time data shared through the MDS Agency API in special circumstances must be regarded as personal data. The City of Bergen as the data controller has therefore undergone a complete DPIA to manage the risks associated with the processing of potential personal data. There are several ways for the data processor to manage the risks and process data for anonymous storage, and the City of Bergen is open to consider several different ways to achieve this. These are the minimum requirements:

- Anonymization of potentially personal data must take place within maximum 7 days from receiving the data.
- All data received and stored on behalf of the City of Bergen must be stored within the EU / EEA region.
- Access to the system is only possible to authorized persons with their own unique user profile.