BUD_01: To improve the efficiency and convenience of PT service

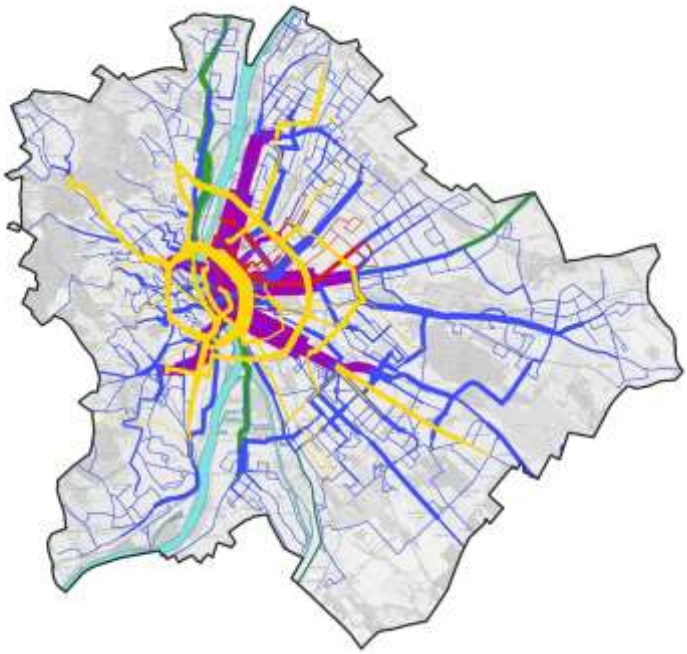
Description of the measure and main outcomes expected

In general, a data-based decision-making process based on measured passenger numbers is not a requirement of the process for public transport service planning on a regular basis. BKK already has a macroscopic strategic transport model, but it is not (or just partly) capable of supporting the operation validation/optimization of public transport services. The Model is based on a complex system of different data sources, including traffic counting data, spatial data, infrastructure data, traffic behavior data and other data from external sources. This data should be updated regularly to ensure reliable transport planning. In this measure, the BKK will investigate the possible development solution of the model, which can strengthen the reliability of the model in the aspect of operational public transport planning.

Measure outputs:

Data collection for the update the Unified Transport Model (e.g. household survey)

Macroscopic model updated and validated based on the results of the data collection



1. Figure: Result of public transport assignment in EFM

Preparation of the measure

BKK is working on the Public Transport Network Strategy for Budapest, which is a sub-strategy of the city's SUMP. This UPPER measure supports the goals of this sub-strategy, as the operational modeling of public transport modifications is its backbone and must be reliable. To make the public transport layer of the model more reliable for operational modifications, a comprehensive update is necessary.

One of the most important parts of this update is collecting reliable data from citizens – specifically, when, how much, and how they are traveling. Travel habits have changed during the COVID pandemic, as evidenced by the difference in passenger numbers compared to pre-COVID levels. We know that this is partly due to the increase in remote work, but we lack detailed data on this. To better understand the changed travel habits, a large-scale household survey must be conducted in Budapest and its surrounding areas. This household survey must be representative in terms of area, household size, and age.

Based on BKK's experiences from previous household surveys and discussions with experts, it was decided that a sample of 12,000 households would be sufficient. A technical description has been prepared, and through an open tender, BKK has selected a company to implement the household survey, following the predefined criteria, between May and July 2024. The survey has started with larger households, where school-aged children are most likely to be living.

Challenges & Mitigations

From a technical point of view, it was clear what kind of data should be collected, but implementing a large-scale household survey like this is also challenging. We usually prefer to use data from late Spring or early Autumn, as this represents “average working day data.” Due to the municipal elections in Hungary in early June 2024, public opinion research companies were busy, and such companies are needed for this household survey. Finally, the tender was successful, and data collection started in late May, beginning with households with school-aged children to avoid surveying them during the summer break period.

Next steps towards implementation

The complex model update will be finished in late 2024. Until then, data will be collected from several other sources, including the results of the Hungarian census (2022), which provide data about the number of inhabitants in different zones, cross-section traffic data from loop detectors and cameras, public transport boarding numbers, a company database that provides data about workplaces in different zones, and other minor data sources.

Once the model update is ready, the modeling results applied in the Public Transport Network Strategy will be reviewed and, where necessary, updated based on the results of the updated model. Furthermore, individual network modifications will also be investigated by the new model, and decisions about implementation will be made based on the model's results. This will lead to more reliable and data-driven decisions than previously.