MŰEGYETEM 1782

BUDAPEST UNIVERSITY OF TECHNOLOGY AND ECONOMICS
Faculty of Transportation Engineering and Vehicle Engineering

# Revision of public transport hub Göncz Árpád városközpont

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Source: https://www.agorabudapest.com/hu/#epuletek

# Motivation & Objective

Motivation:

- Major multimodal node (metro, tram, buses)
- Urban development: AGORA, MBH HQ

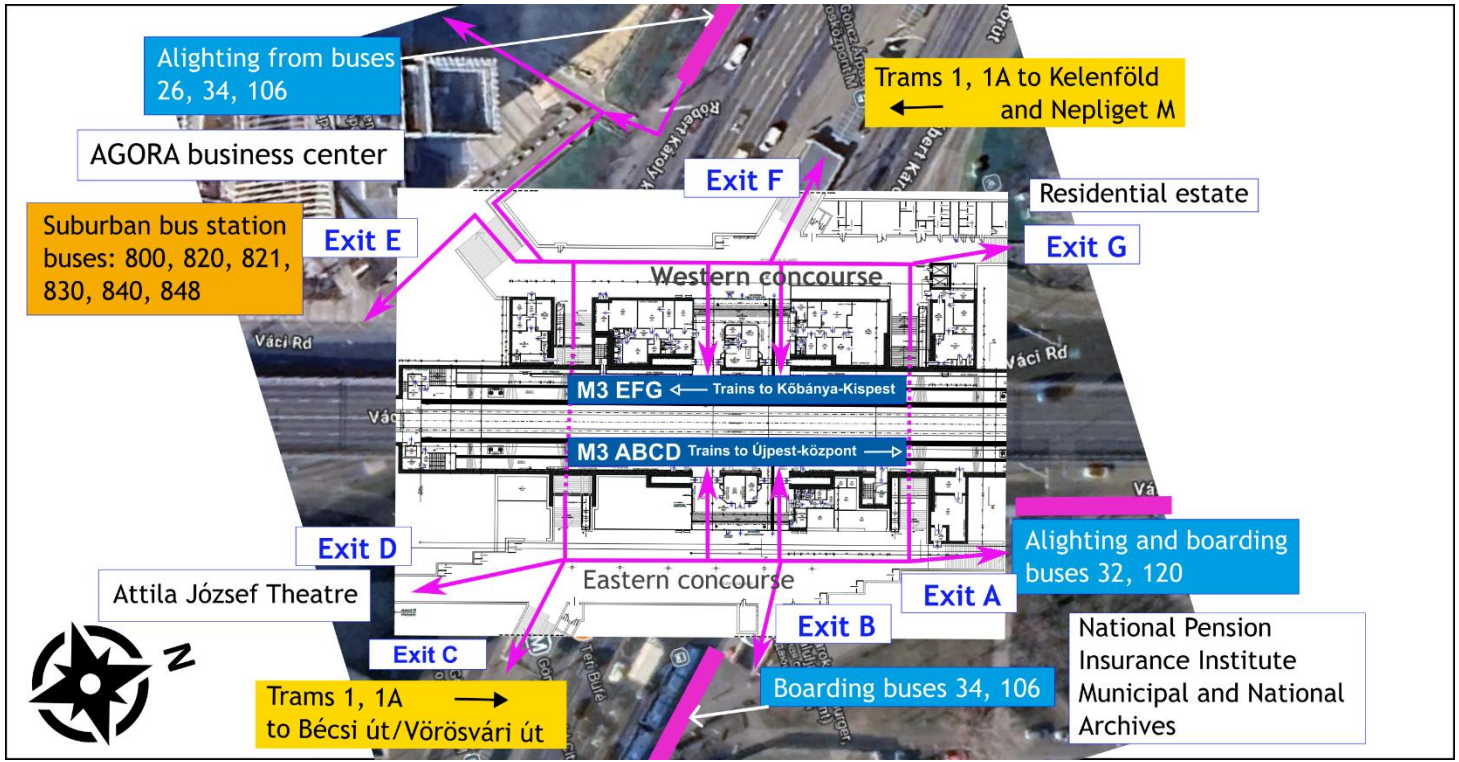
Objective:

redesign hub for accessibility & efficiency



Source: https://www.agorabudapest.com/hu/#epuletek

# Current state of the hub

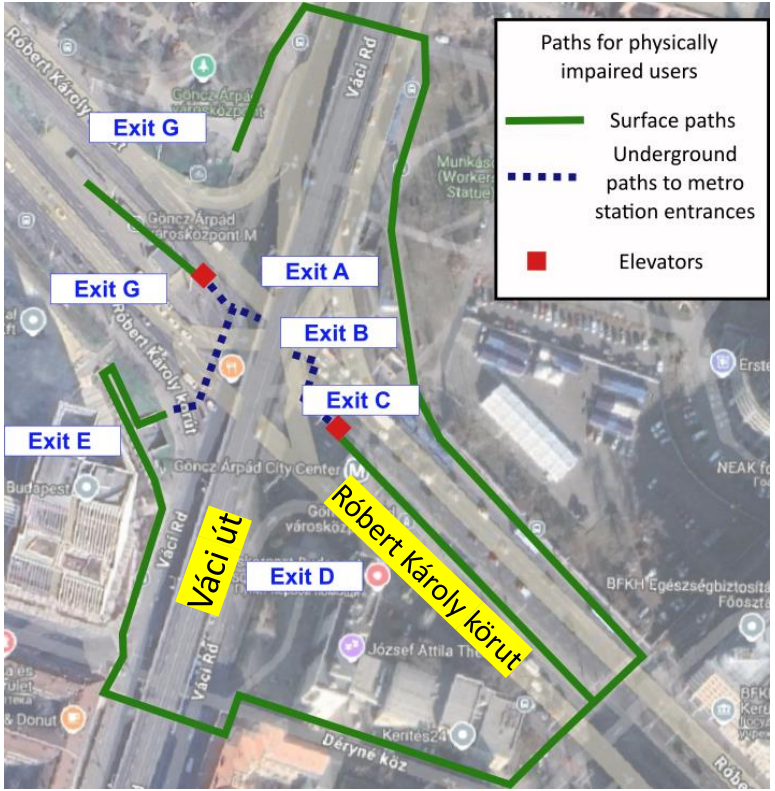




Source: [1], Google Maps

# Identified Challenges – Pedestrian infrastructure

- Lack of barrier-free access
- Complex navigation
- Long transfers

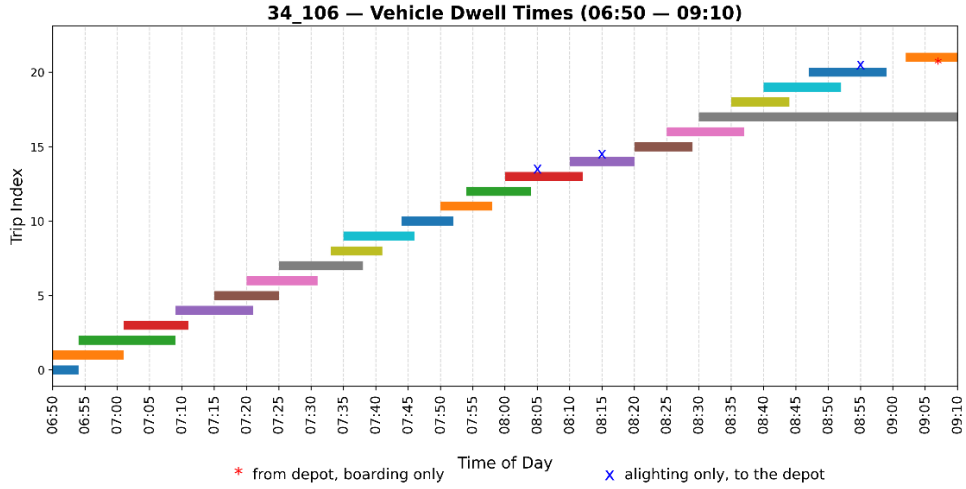



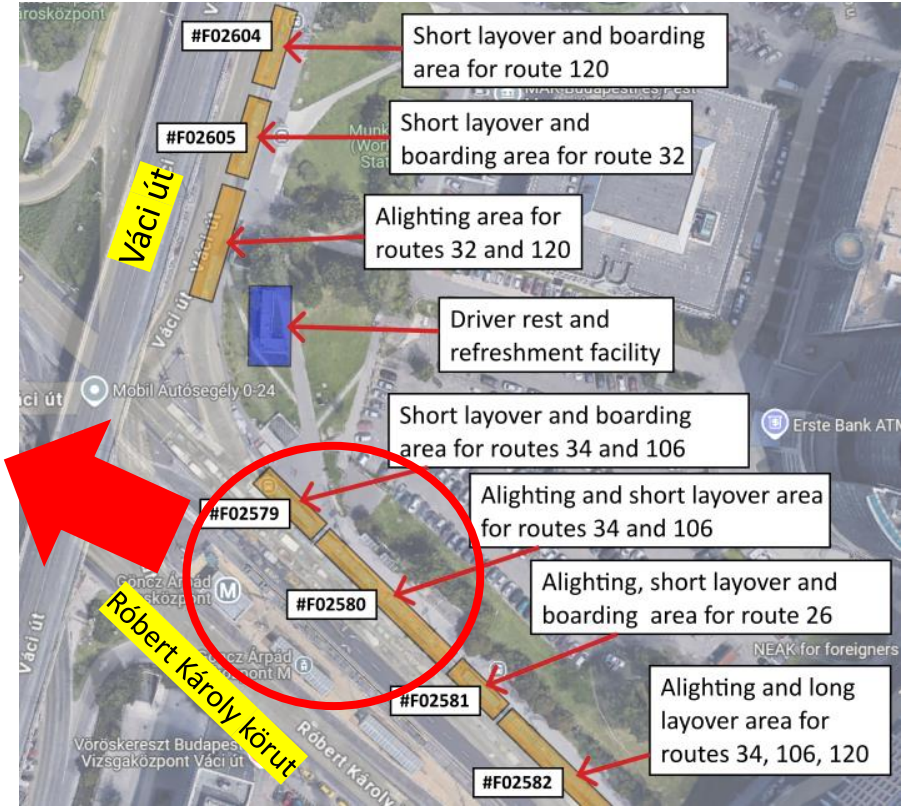


Source: Google Maps

# Identified Challenges - Urban bus infrastructure

## Undeveloped bus layover facilities



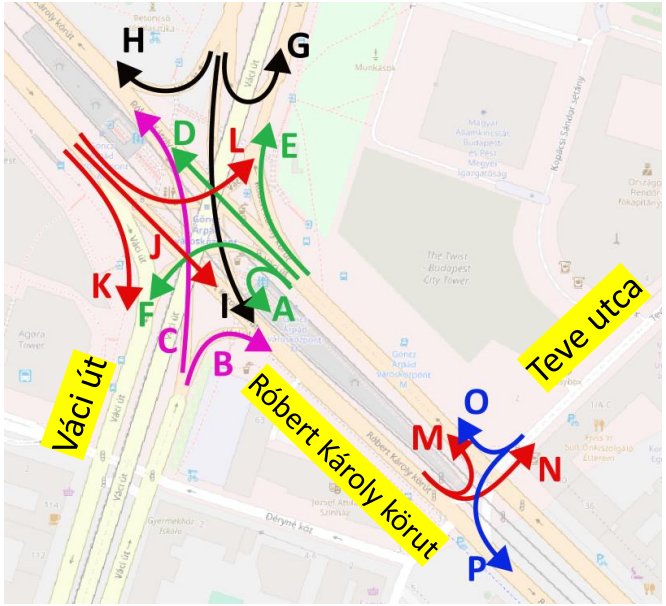


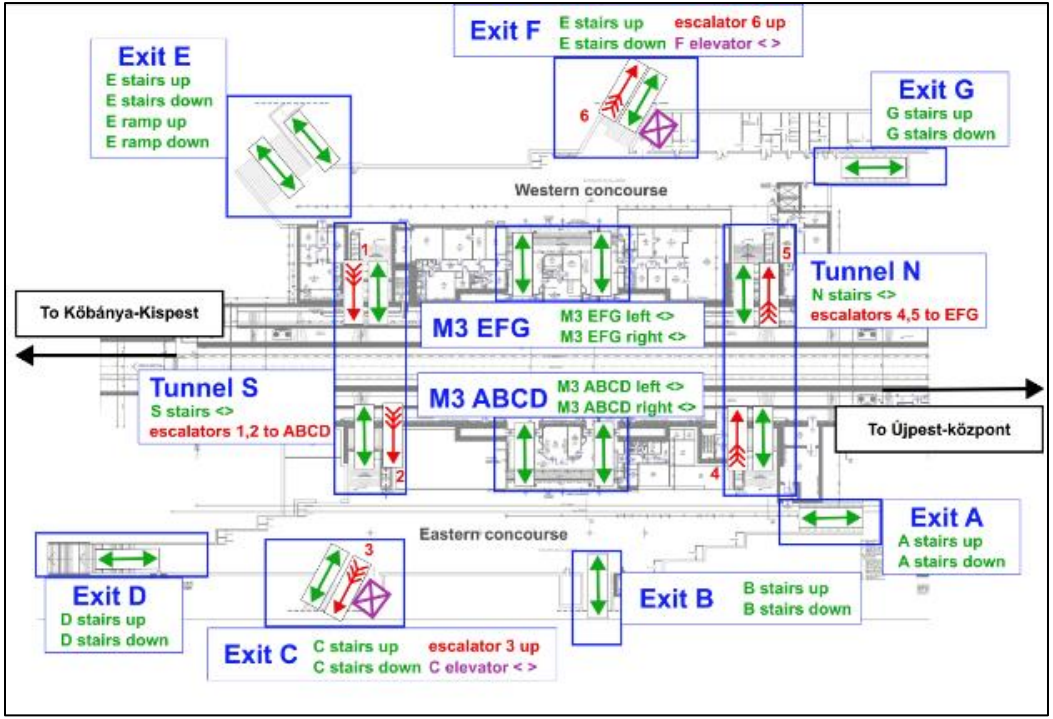
Source: Google Maps

# Methodology - Surveys

Field surveys: Oct 2024 – Mar 2025

Data: pedestrian/vehicle counts, signals

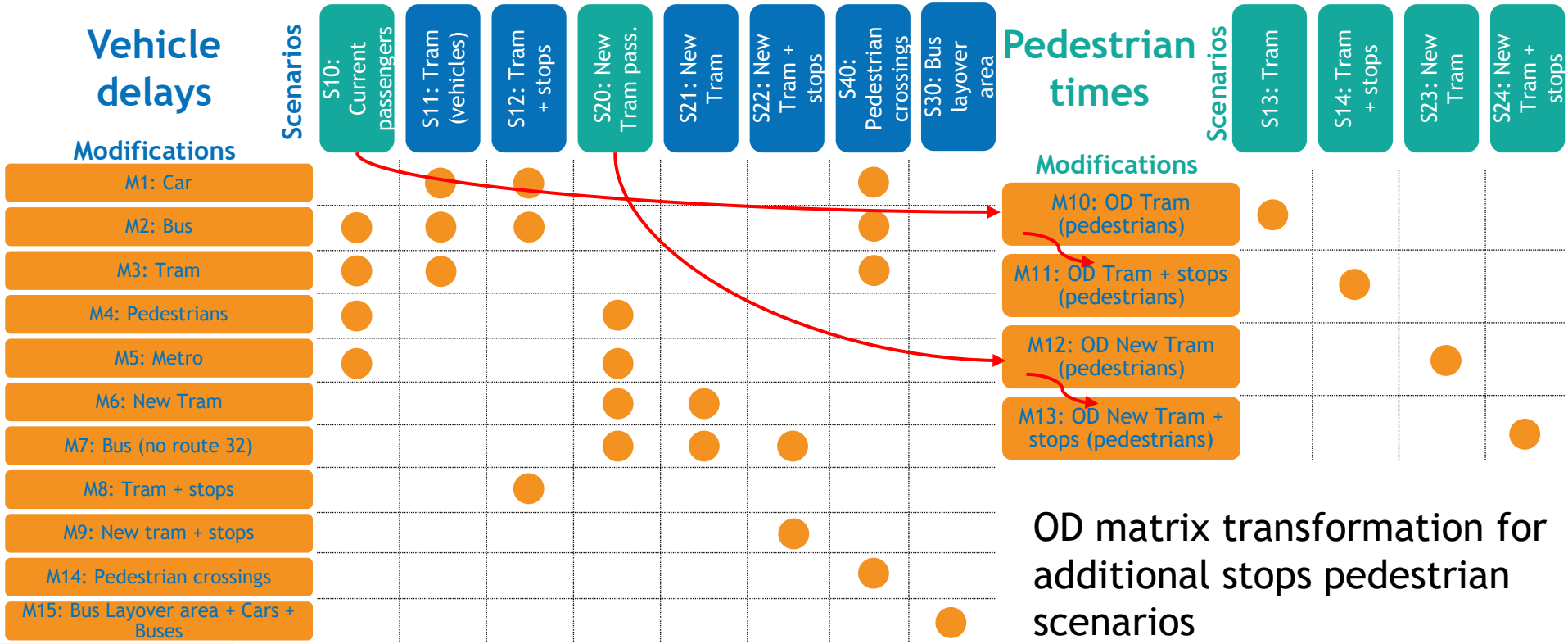





Source: openstreetmap.org, [1]

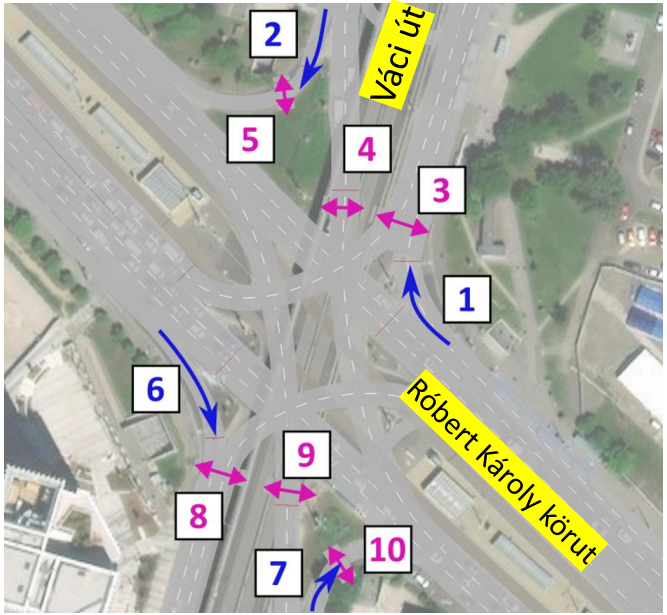
# Methodology - Modelling

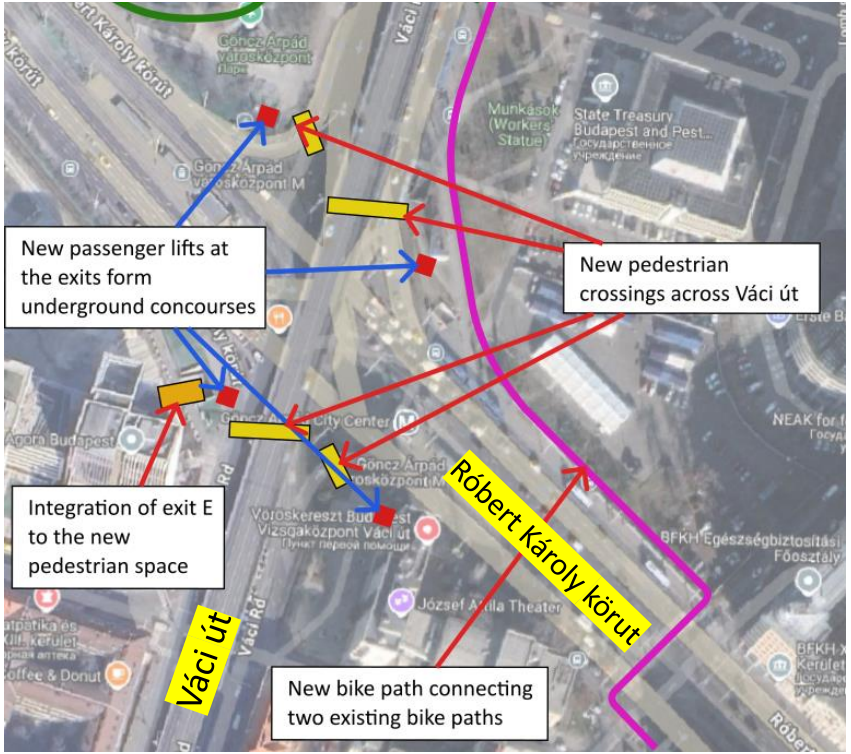



OD matrix transformation for additional stops pedestrian scenarios

# Infrastructure & Operational Proposals – Soft Mobility

- Elevators, new pedestrian crossings
- Soft mobility: bike lanes, zones



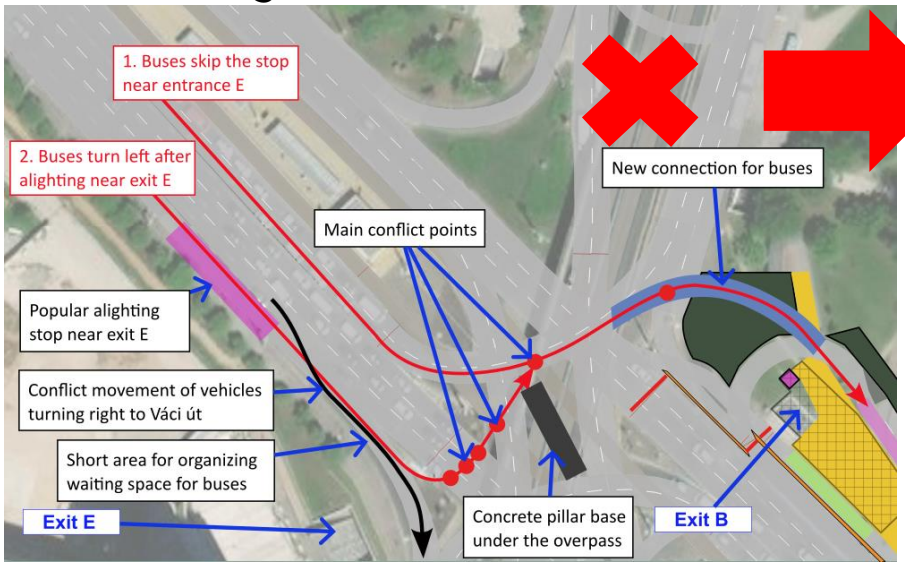



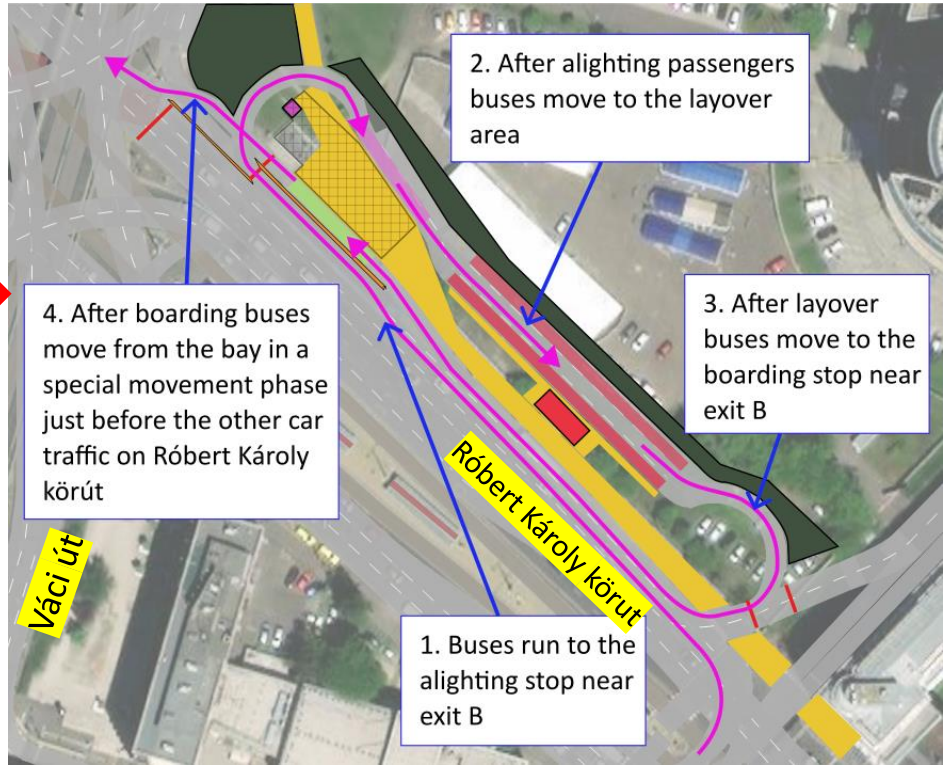


Source: Microsoft Bing maps

# Infrastructure & Operational Proposals - Urban buses

- Changes in bus movements to layover area
- Longer uninterrupted driver rest
- Safer right turn from Teve utca



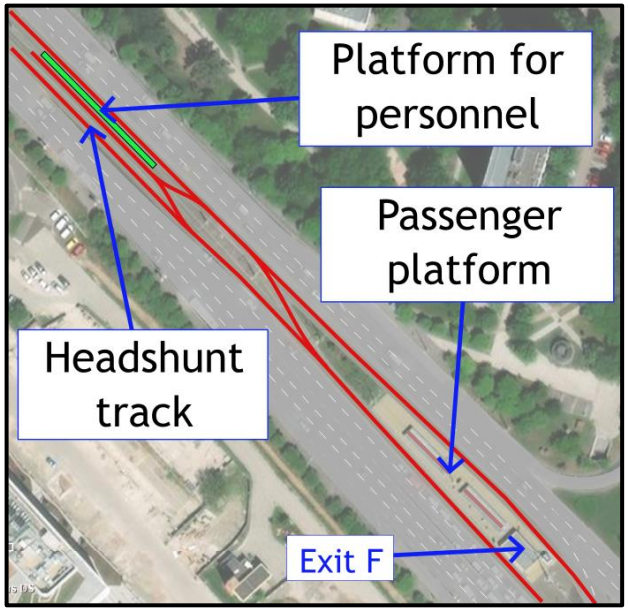



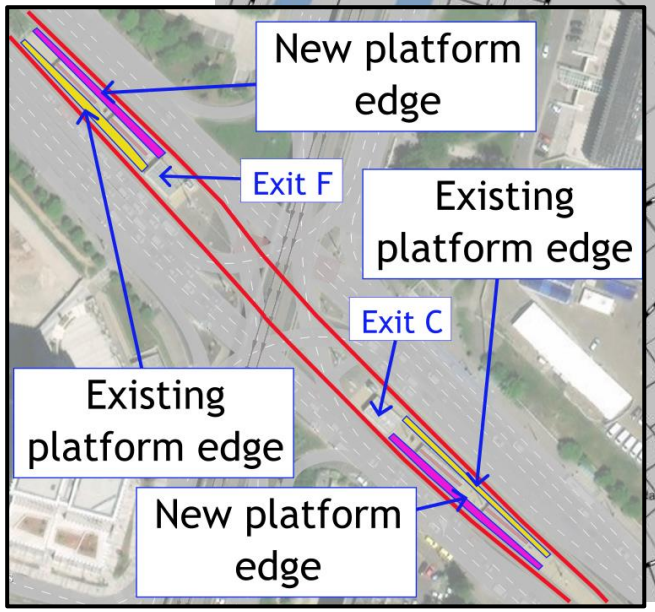


Source: Microsoft Bing maps

# Infrastructure & Operational Proposals - Tram

- Additional tram platform edges
- New tram line & headshunt track



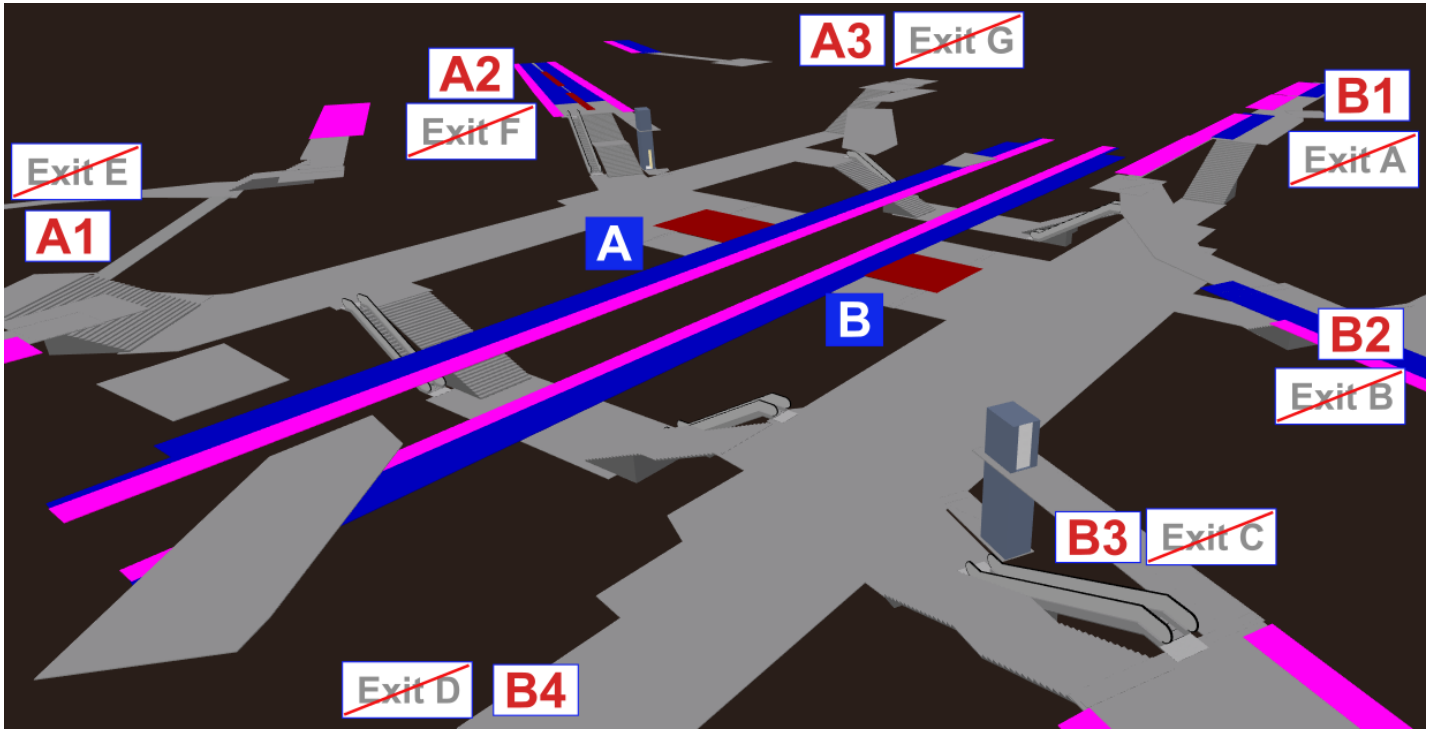








Source: Microsoft Bing maps, [2]

# Information system proposals - Navigation

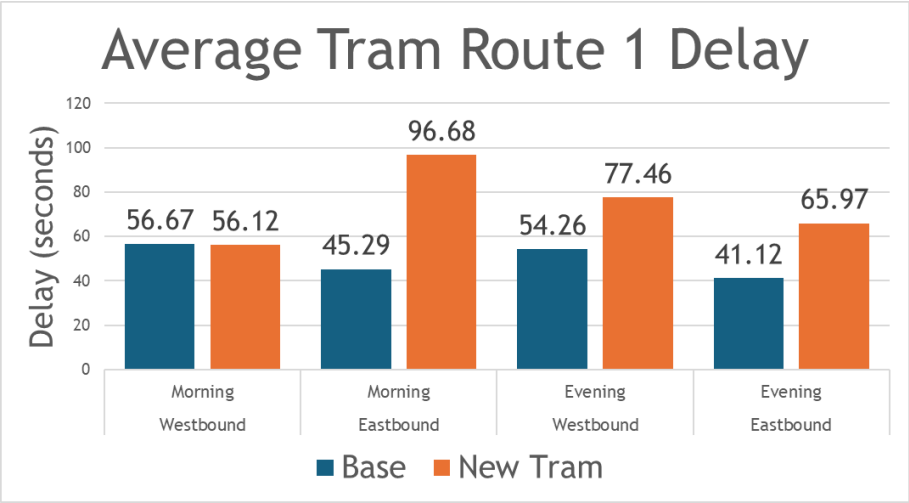




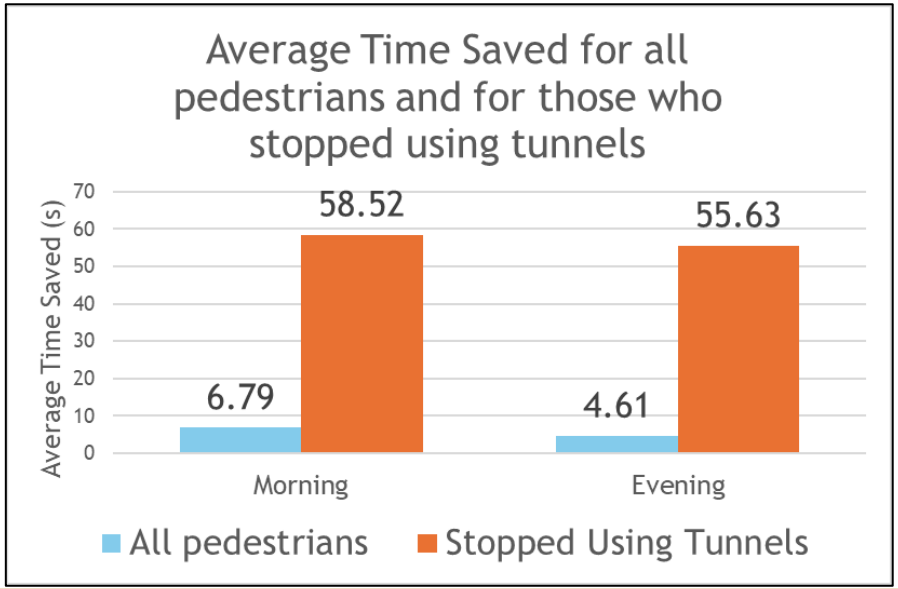
Source:

# Scenario Analysis & Impacts

Tram route 3 extension (S20): increased delays of tram route 1

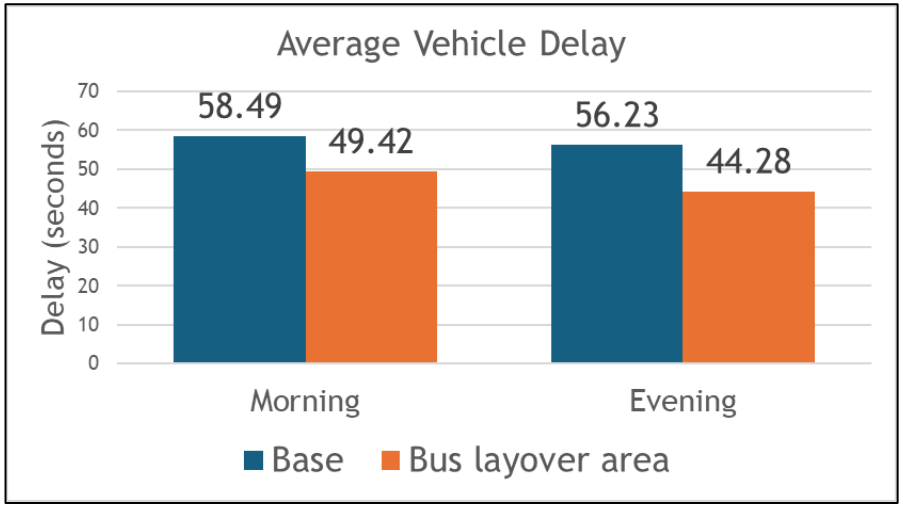



Additional stops (S14): low average time win for all pedestrians, significant time win for pedestrians started avoiding tunnels

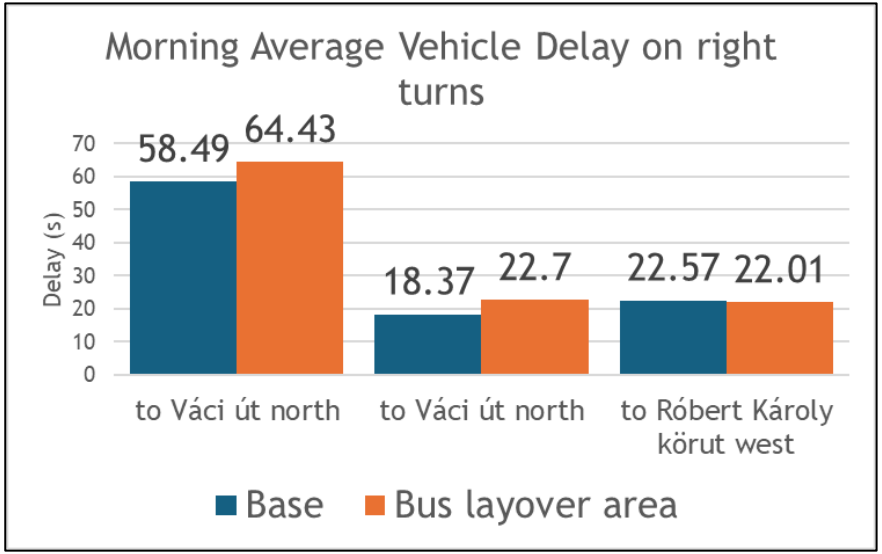


# Scenario Analysis & Impacts

Bus layover area (S30): longer uninterrupted layover time, no delays for other vehicle traffic




Pedestrian crossings (S40): Better access, no significant vehicle delays on right turns with new signal heads



# Conclusion

Göncz Árpád városközpont hub is in need for recent upgrades.

Proposed interventions:

1. Construction of **additional at-grade pedestrian crossings**
2. Construction of **four additional passenger elevators** connecting the underground concourses with surface exits
3. Modification of the transport hub's **navigation system**
4. Launch of the **extension of the tram route** from the outer tram ring



Source: own photo

# References

[1] Márk Árpádné, P. Márk, and L. Kovács, BKV Zrt. Üzemeltető: FŐMTERV - UVATERV KONZORCIUM generáltervező: REKONSTRUKCIÓJA ÉS MEGHOSSZABBÍTÁS ELŐKÉSZÍTÉSE. 2015.

[2] BKK Budapesti Közlekedési Központ Zrt., TRENECON COWI - UTIBER Konzorcium, CÉH ZRt., BFVT Kft., ECORYS Kft., SPECIÁLTERV Kft., TEN-T Zrt. and VÁROSKUTATÁS Kft., “A fővárosi villamoshálózat és trolibuszhálózat egységes fejlesztési koncepciójának megvalósíthatósági tanulmánya, valamint az 1-es villamos Kelenföld vasútállomásig történő meghosszabbításának részletes megvalósíthatósági tanulmánya és egyesített engedély,” BKK Budapesti Közlekedési Központ Zrt, Budapest, 2013. (page 213)

# Thank You! Questions?