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Understanding freight distribution for a university campus in a data-diverse environment

(Abstract no. 43)
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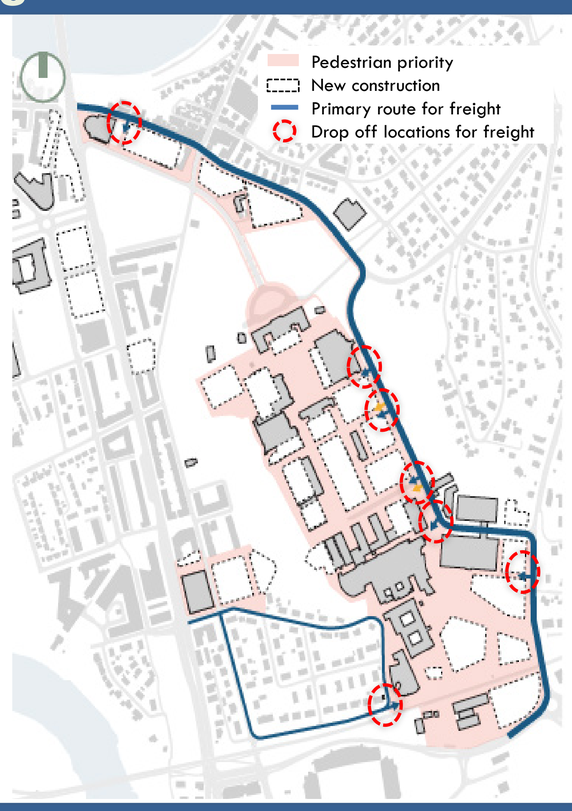
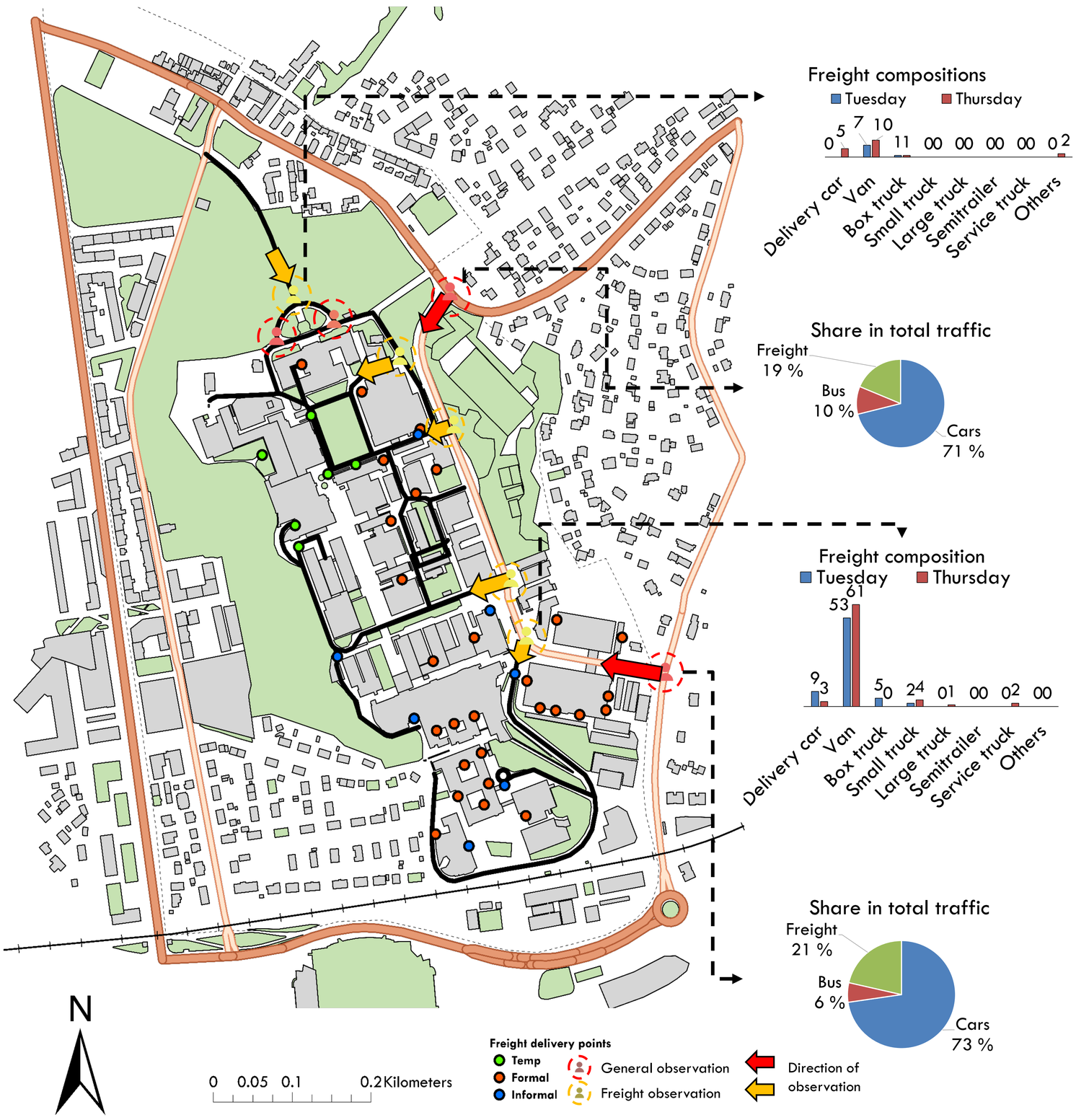
Background

- "Campus Unification" Project provides an opportunity for green mobility
- Restricted vehicular movement
- Priority to pedestrians, bicyclists, and public transit
- "Unintentional" impact on freight
- Objective: map the freight landscape for data-driven planning



Mapping the existing condition



Data Collections (3 sources)

A. Vehicle observation survey

General observations — Freight observations

Delivery car

Box Truck

Small Truck

Large Truck (>2-axles)

Service truck

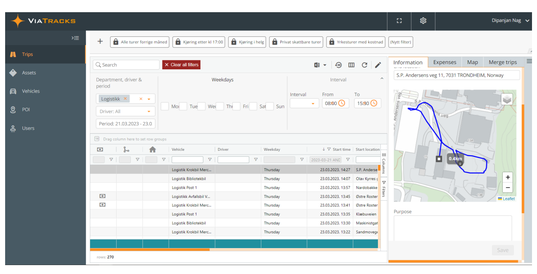
Semitrailer

Van

Others:

B. Stakeholders interview: NTNU logistics team

NTNU Logistics has a fleet of vehicles for internal transport (ca. 30% of all NTNU vehicles)



Access to driving e-logs: show start/final stop locations and route taken (but no intermediate stops)

C. Visual mapping: freight delivery locations

Formal — Informal

Construction (Temporary)

Preliminary Results

- Ca. 20% of vehicles entering campus are considered freight (average of 14 freight vehicles per hour during data collection)
- Vans are the primary freight vehicle
- Service vehicles make up a large percentage of freight vehicles
- Informal delivery locations must be determined by observations
- Temporary construction vehicles and parking must be considered, particularly with long-term campus development/construction plans

Future Steps

- Further data collection on demand side: order and inventory history data
- Further data collection on delivery locations: individual buildings observations and interviews (particularly informal locations)
- Explore driving e-log data for pick up and drop off locations
- Develop recommendations for freight delivery on campus
- Explore opportunities for a digital twin

Scan for contact

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