



# The Langemunt case

## Using inland waterways for the last-mile servicing of an inner-city construction site in Ghent

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# Inner-city construction sites: culprit and victim

- The average construction site generates 80 (heavy) truck transports
- In city centres, they affect general mobility and well-being
  - Pollution, noise, congestion
  - Parking space (Ghent 2014: 8% of total capacity)
- At the same time, construction companies and developers experience certain issues
  - Sites cannot be reached or trucks are stuck in traffic
  - No parking near the site
  - Hardly any space to place dumpsters, etc
  - Opposition from residents, shopkeepers,...



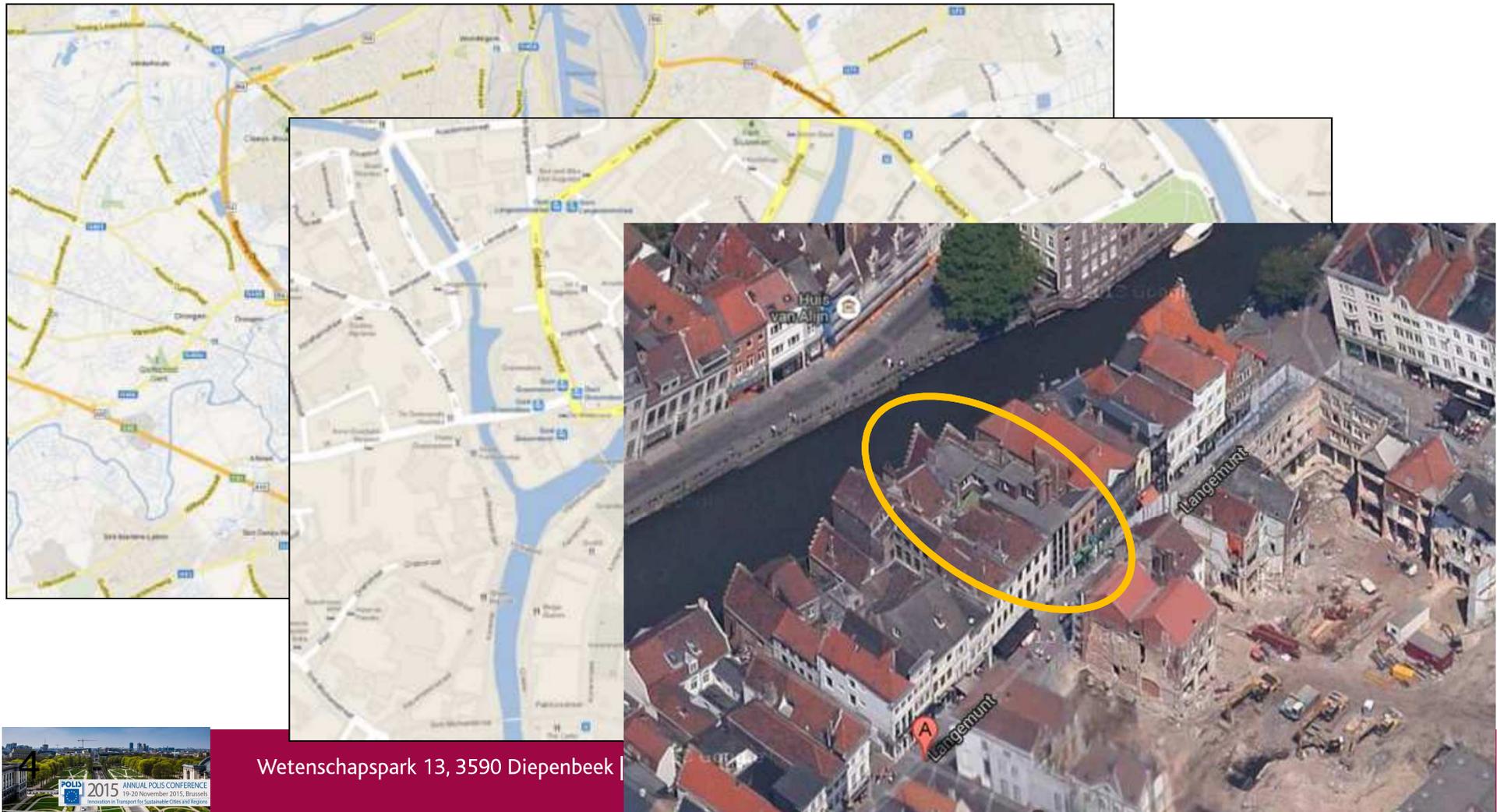
# What happened previously: Distribouw

- Flemish waterway managers encourage the modal shift of unitized building materials to IWT
- 2010-2011: “Build over Water”: 12,000 tons of unitized materials are shipped during real-life trials in co-operation with 6 producers
- 2012-2015: Support of the roll-out of a hub-to-hub and hub-and-spoke network called “Distribouw” as an EFRO-project
- 2014: specific trial cases (last-mile IWT and milk-run setup)



# The Langemunt case

Reconversion of two medieval houses in the historical centre of Ghent



# Site location

- Locked-in construction site
  - Pedestrian shopping area
  - Other (large) construction sites in the immediate vicinity
  - Available space very limited



- But: site can be reached from the back using the historic waterways
  - Yet: very small waterway (locks, draft, bridges)



# Objectives of the pilot

- Financed by the waterway manager, the city council and the real estate developer
- Executed by VIM
- The goal is to determine costs and benefits for the public and private parties involved if IWT is used
- Investigate feasibility and best practices for last-mile delivery of construction materials using IWT
  - Which vessel size/type?
  - Effects on number of trucks in the city?
  - Operational bottlenecks?
  - Effects on the planning of the works?
  - Which public parties (police, fire brigade, tourism,..) have to be informed and/or involved?



# Execution of the pilot

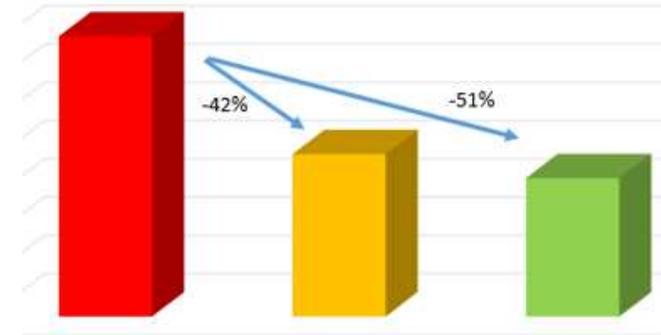
- March-Juli 2014: 10 transports
  - Delivery of construction materials
  - Removal of rubble, wood and waste
- Use of barge with built-in, light-weight hydraulic crane and a small pusher
- High intensity of communication and coordination required
- Issues with water levels, locks,..
- In total 253 tons of cargo moved using IWT



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# Operational costs



- Quite high, because:
  - Limited supply of suitable vessels
  - Vessels had to be relocated from other regions
  - Manning regulations (2 people at all times)
  - Adjustment of barge (cranes)
- so costs can be reduced dramatically if:
  - Crane from the construction site can be used, vessels are available in the area and can be operated (self-propelling) without the used of a pusher = 42% reduction
  - More vessels of this type are available or long-term lease/rent = further 9% reduction



# Operational benefits



- 75 truck transports in the heart of the city avoided (congestion, noise, pollution, safety,..)
- The surface of the barge offered a practical operational space buffer which improved speed of operations
- No public space taken up by dumpsters, parked trucks,.. which was of essence to the shop keepers in the area
- Experience with “smart construction logistics”, with a thorough planning of the supply chain, resulted in an improvement of speed and continuity of construction operations



# Lessons learned

- Handling costs can be decreased if, when more than one construction site is in the area, the use of gantry cranes or quay space can be shared
- Precise planning required for the execution of transports (locks) and intensive communication required (many parties involved)
- Local authorities and waterway managers should take up an active role in facilitating the use of IWW (licences, use in public works, mobility policy, dredging, cargo quays..)



# Impression (3'30")



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