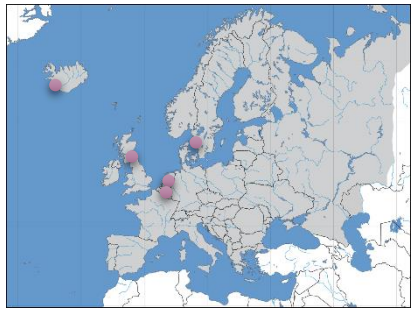
Traffic signal system in Reykjavik capital area

Final presentation, 9 October 2020

Scope of project

- Analyse the current traffic signal system and internal working processes for the Reykjavik capital area.
- Compare Reykjavik's traffic signal systems with a number of other cities:
  - resources
  - operation
  - control
  - identifying common and best practice
- Highlight pros and cons of different systems and identify development paths for Reykjavik going forward.
- Key questions.
  - Can the existing traffic signal system support new transport strategies?
  - Do system improvements need to be made?
  - Are appropriate internal processes in place?



Comparison cities

Gothenburg, Sweden

- Population: 600 000
- Signalised intersections: 100
- Main supplier: Swarco

Edinburgh, United Kingdom

- Population: 550 000
- Signalised intersections: 610
- Main supplier: Siemens

Almelo, the Netherlands

- Population: 70 000
- Signalised intersections: 44
- Main supplier: Dynniq and Vialis

Ghent, Belgium

- Population: 260 000
- Signalised intersections: 94
- Main supplier: Swarco and Siemens

Benchmarking – Business processes

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- Traffic signal management decision making processes including planning, design, operation and maintenance occur in isolation.
- Ghent and Almelo have regular meetings with stakeholder groups.
- Reykjavik has strategic planning documents that should be broken down to specific goals.
- Important that Reykjavik continues investment in connecting traffic signal controllers to the central control system.
- A lifecycle improvement process and associated roles should be defined and clearly distributed within the organization between departments.

Benchmarking – Systems and technology

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- Reykjavik has systems and hardware which are at the forefront of current technology – only Almelo is further ahead.
- Untapped potential of the traffic management system in Reykjavik.
- Siemens are stable/robust supplier offering well integrated systems.
- Siemens employ open protocols allowing future development path with third party applications.
- Important to deploy and operate adaptive control systems at an appropriate level.
- Potential for out-sourcing maintenance to allow in-house staff to focus on other issues.

Benchmarking – Performance and measurement

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- None of the cities demonstrated a structured approach to measuring the performance of their traffic signal systems.
- Gothenburg and Ghent have limited performance measurement of cycle times and maintenance response times.
- In Reykjavik performance measures are not connected to city or national goals or objectives.
- Functionality exists in the management software for measuring performance.
- Important to involve other stakeholders in performance evaluation.

Benchmarking – Organisation and workforce

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- Similar performance across the cities
- All cities have small number of highly skilled staff – differences in deployment.
- Almost all aspects of traffic signal related work in Reykjavik are performed in-house.
- Important for Reykjavik to improve level of redundancy within the organisation.
- Other cities define requirements and perform quality assurance on work conducted by external suppliers and consultants.
- Important to clearly define work roles, staff development schemes and career development paths.

Benchmarking – Culture

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- Similar performance across the five cities.
- Other cities are better at performing public consultation when conducting projects.
- Traffic signals generally suffer from a lack of awareness amongst policy makers and the public.
- Opportunity for Reykjavik to appoint a traffic signals “champion”.

Benchmarking – Collaboration

Reykjavik	Gothenburg	Almelo	Edinburgh	Ghent
				

- Reykjavik performed poorly compared to the other cities.
- Opportunities exist to improve sharing and collaboration around data from the traffic signal management system.
- Increase participation in R&D projects within the European Union.
- Other cities use external funding to finance development instead of using their own funding or as a complement to their own research budgets.
- The City and Vegagerdin could usefully produce a joint white paper outlining collaboration objectives.

Identified areas for improvement – Priority actions

Business Processes

- Develop strategic plan with clear goals for system performance
- Integrate traffic signal operations into regional long-term plan

Systems and Technology

- Proceed with chosen technical development path
- Use existing system functionality to meet strategic goals
- Look towards ITS technology for the longer term +5 years, where appropriate

Performance and Measurement

- Define relevant KPI's
- Define structured process for measuring performance
- Develop life-cycle status plan to manage upgrades

Identified areas for improvement – Priority actions

Organisation and Workforce

- Staffing levels to match strategic plan and provide appropriate levels of redundancy
- Optimise staffing levels in the future and out-source where appropriate

Collaboration

- Follow-up and evaluate performance in cooperation with key stakeholders
- Increase external cooperation by participating in European R&D projects

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