UNDERJORDISKA RÖRLEDNINGAR OCH JÄRNVÄGSINFRASTRUKTUR (PipeXrail)

Konsekvenser och begränsningar av ledningsbrott

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Projektets syfte och deltagande organisationer:

The purpose of this study is to identify failure modes and their consequences at the crossing of pipelines with railway corridors by:

(I) Identify and investigate causes of the piping failures of pipeline and railway/road interaction. (II) Analysis of failure consequences. (III) Proposes tools and techniques for monitoring, diagnostic and prognostic. (IV) Suggest technical solutions to overcome the problems of building and maintaining pipelines under railway.

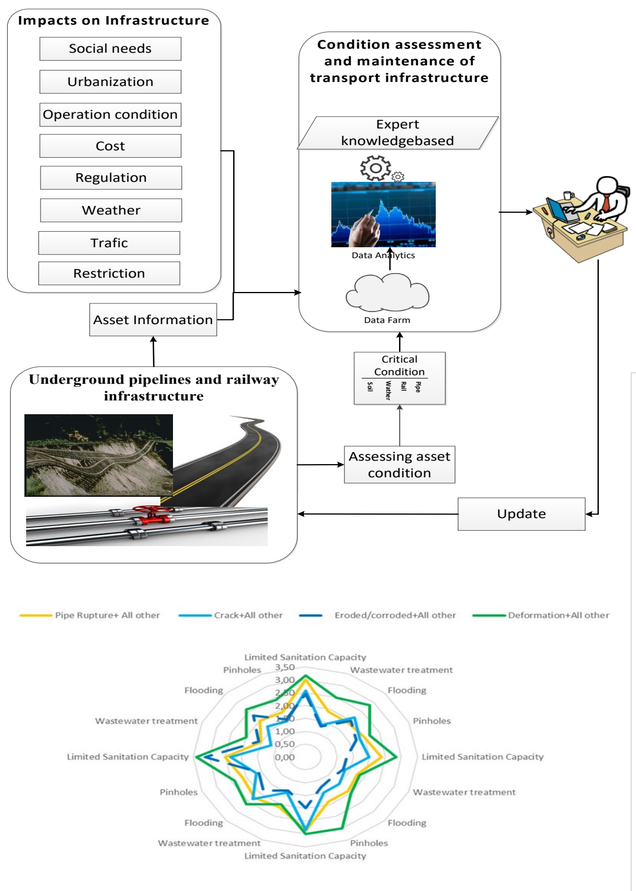
Actors:
Luleå University of Technology, JVTC, Stormwater&Sewers, Aarsleff Rörteknik AB

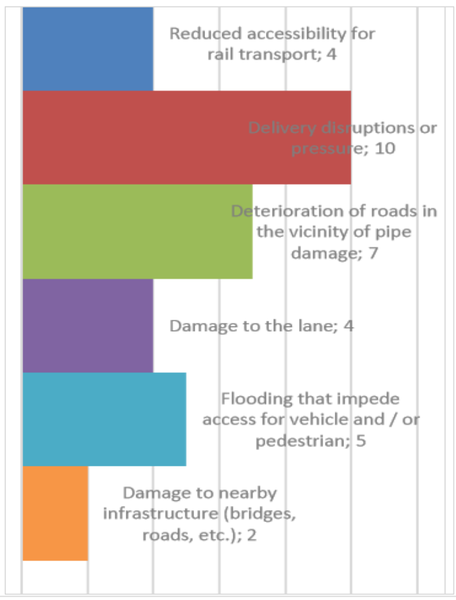
Vad och vilka behövs för att nå hela vägen till innovation?

- Better collaboration between Municipalities

  There is a need to establish integrated data infrastructure among municipalities for pipeline failure and condition monitoring data in order to perform predictive maintenance.

- Utilization of Internet of Things and digitalization concept to have more accurate pipeline health status estimation in real-time.



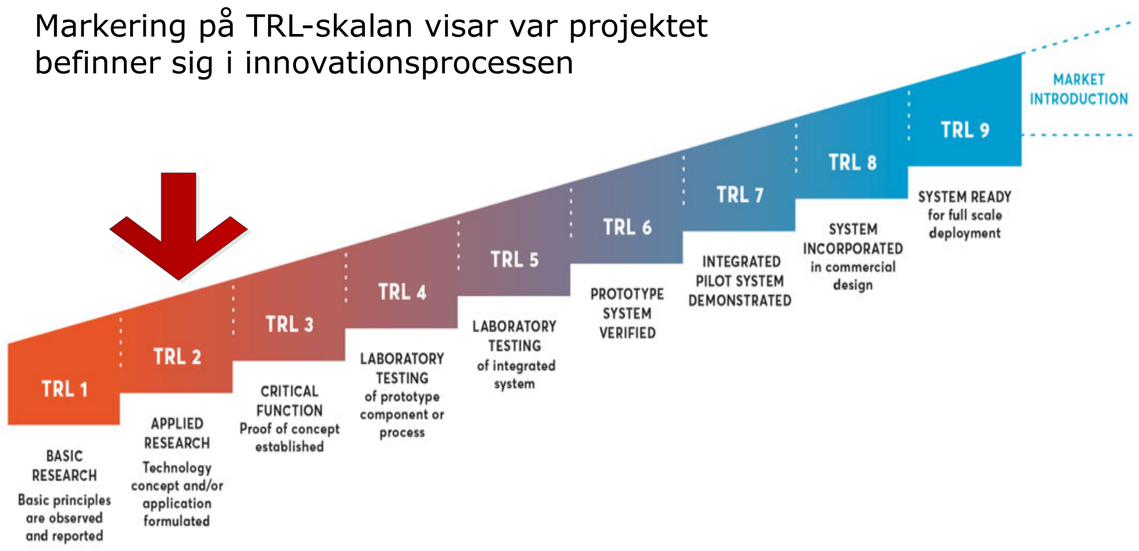


Innovation betyder förnyelse. Vari ligger det nya?

- Proposing appropriate tools and techniques for diagnostic and prognostic of pipeline under railway infrastructure using data-driven methods for mitigation of failure consequences of current and future transport infrastructure.

- Proposing a risk assessment framework based on identified failure modes.

Markering på TRL-skalan visar var projektet befinner sig i innovationsprocessen



Mål i InfraSweden2030 som projektet avser bidra till:

This project relates to the main focus areas of InfraSweden2030 in next generation of condition assessment and maintenance of transport infrastructure using data-driven maintenance methods and proposes assessment methods in terms of diagnosis of prognosis for lifelines (5th and 3rd points in Table 1 in the InfraSweden 2030 call, 2016).

Förväntade resultat:

- Better understanding of failure correlation between railways and pipelines at cross section.
- Reduce the operation and maintenance costs of pipelines and transport infrastructure
- Reduce disruption to traffic infrastructure. Have less disruption to the neighboring business, as well as saving energy and resources.

Redan uppnådda resultat:

- The scale of the problem, have been identified
- The failure mechanism and related consequences have been studied.
- Appropriate data-driven tools and techniques for diagnostic and prognostic of pipeline at cross section have been proposed

Förväntade nyttor och för vem:

Utilization of proposed approach will lead to have better services to the customers (from pipeline and transport perspective for instance: improve safety, reduce disruption of traffic & inconvenience to society, reduce environmental impacts and shortage of resources).

- All municipalities that have railway infrastructure in their vicinity.
- Trafikverket, TRV.
- Water supply and construction companies.

INFRA SWEDEN 2030

Med stöd från:
VINNOVA
Energimyndigheten
FORMAS
STRATEGISKA INNOVATIONS-PROGRAM