Incremental light rail planning
Argumentations, approaches and projects

Dr. Rob van der Bijl
RVDB – Urban Planning & Lightrail.nl
Amsterdam, Netherlands

Bergen, Norway, April 2017
Independent urban planner (since 1987)

Station Maashaven, RET, Rotterdam 1992-1996
Independent urban planner (since 1987)

Go Dutch Cycling
Amsterdam – Wijkbesteden
Our cities and projects
Dr. Rob van der Bijl
Amsterdam, Netherlands
January 2014

www.lightrail.nl/bicycles

Dutch Cycling Embassy
> www.dutchcycling.nl
> info@dutchcycling.nl

International City Cycling Assessment

Rob van der Bijl
Bergen, Norway, April 2017
Incremental light rail planning
Approaches and examples
Dutch Rail Export (2013-...)  
Showcases, pilots, projects

Light rail  
Station environments  
Rail maintenance  
And more ...

www.dutchrailsector.com
Dutch Rail Sector

Dutch Rail Export (2013-...)
Showcase light rail
RandstadRail

Boosting public transport
Transit Oriented Development
Iconic viaduct in The Hague
Dutch Rail Export (2013-...)  
Showcase light rail  
Maintenance Utrecht assets

Keeping availability & reliability  
Maintaining safety levels  
Optimising life-cycle costs

![Light Rail Asset Management](image)

**Dutch Rail Sector**

Rob van der Bijl  
Bergen, Norway, April 2017  
Incremental light rail planning  
Approaches and examples
Dutch Rail Export (2013-...)  
Pilot light rail  
Indonesia  

Various cities (e.g. Surabaya)  
Dutch knowledge/experiences  
Input for planning processes
Dutch Rail Export (2013-...)  
Pilot (light) rail - bicycle  
Taiwan

Cycling connected to stations  
Hubs and urban hot spots  
Workshop Kaohsiung
Lessons from 61 light rail projects (2017)

Published by Elsevier
Based on Dutch original
www.lightrail.nl/61xlightrail/
Some projects

### Sintropher (2008-2014)
Various tramway projects in Europe

- Valenciennes
- Blackpool
- Nijmegen-Kleve
- And more

Lille, 2009
Some projects

Aruba
One Happy Island

Arutram (Aruba, 2009-2012)
Small tramway project

Upgrading downtown
Iconic and green
Though wrong vehicles

Oranjestad, 2012
RandstadRail (NL, 1986-2006)
Regional-urban light rail project

‘Tram-train’
Two systems!

A very long history!
Some projects

Utrecht Uithoflijn (NL, 2007-....)
Regional-urban light rail project

Under construction
Phase 1: opening 2018

Involved in many ways:
- project organisation (2007-2008)
- argumentation phase 2 (2017)
Some projects

Groningen RegioTram (NL, 1995 / 2002-2012 / 2013)

Phase 1:
Urban tram system (2 lines)

Investment: 300 million euro
Contract: DBFMO+
Planning: 2002-2010
Tendering: 2010 -2012
Killed: 2012
Some projects

Groningen RegioTram (NL, 1995 / 2002-2012 / 2013)

Phase 2: Regional tram-train system

Also cancelled (2012).
Some projects

Groningen RegioTram (NL, 1995 / 2002-2012 / 2013)

A second life?
Regional starter system
Study (2013)
Eventually not successful
No political support
Some projects

Groningen RegioRail (NL, 1999 / 2005-2020)

Regional train system
Additional bus system

In operation
In planning
Under construction

Raamwerk RegioRail 2020 koppeling regionale spoorlijnen

Rob van der Bijl
Bergen, Norway, April 2017
Incremental light rail planning
Approaches and examples
Why light rail? Why public transport?

Comprehensive argumentation!

Effective mobility
Efficient city
Economy
Equity
Environment

5xE

Why light rail? Why public transport?
Effective mobility (1/5)

Good transport:
= Meeting demand
= Optimizing operational costs
= ...
= Use of (public) space
= ...
= Traffic design and planning

Why light rail? Why public transport?
Why light rail? Why public transport?

**Efficient city (2/5)**

All kinds of opportunities ...
And (indirect!) impacts:
=Quality of the city
= ...
=Livability
=Safety
=Image & perception of the city
=Urban planning & design
Why light rail? Why public transport?

**Economy (3/5)**

Effects and tools:
- Land value
- Real estate value
- Retail turnover & quality
- Inward investments
- Employment
- Property development
- ...

Hiawatha Line (Minneapolis-St. Paul), Southeast Corridor (Denver), Blue Line (Charlotte)

“All three transit lines experienced a tremendous amount of new development. Charlotte’s Blue Line had the most development, with approximately 9.8 million square feet of new space between 2005 and 2009.”
Why light rail? Why public transport?

Environment (4/5)

More efficient regarding:
- Energy consumption
- COx emissions
- ...
- Land use

Why light rail? Why public transport?
Why light rail? Why public transport?

**Equity (5/5)**

Social access & connection:
- contra-segregation
- social mobility
- ...
- Empowerment

= Case study: Detroit
= Historic case: LA, Watts

Red Car on last day of service
Los Angeles - Long Beach
April 9, 1961

Los Angeles Riots
Watts, 103rd Street
August 1965 - 1966

Households Without Vehicle
SMART Service Area

Source: American Community Survey, 2006 - 2010

38 to 79%
21 to 37%
9 to 20%
0 to 8%

Proposed BRT Route
Detroit Boundary

Rob van der Bijl
Bergen, Norway, April 2017

Incremental light rail planning
Approaches and examples
Why light rail? Why public transport?

Comprehensive argumentation: part 2!

=personal & public safety
=legibility
=affordability
=accessibility
=reliability
=speed
=comfort

Transport Poverty
Our project (2016-2018) entails 4 case studies assigned by the four big cities
Amsterdam, Rotterdam, The Hague, Utrecht

www.favas.net
Initiative is no project

An example:
Nijmegen-Kleve (Sintropher) was basically:
a feasibility study, not yet a project.

Without clear political support.
And no efficient focus.
What is a project?

Project’s basic characteristics

=Obvious scope
=Plan and strategy (‘Plan B’ available!)
=Citizens involvement
=Mature design/engineering
=Sound political decisions and stakeholder involvement
=Funding decision
=Stakeholder management
=Availability of long term view
Too many unfortunately. Some examples (alphabetically):

Aachen (twice!), Bristol, Hamburg (twice!), Groningen, La Réunion, Kiel, Leiden (RijnGouwelijn), Luxembourg (2004), Leeds, Liverpool, London (2 schemes), Reims (1995), South Hampshire, Stavanger, Utrecht (1995), Zwolle-Kampen, ... (and more)

Also projects which encountered severe setbacks: Dublin, Edinburgh, Jerusalem, Paris (T1), Stockholm (Spårväg City), Saarbrücken, Tel Aviv ... (and more)
Main reasons and risks to be discussed traditionally, and fundamentally (part 1):

Scope, interfaces, content, design/engineering, technology, safety.
Financing, funding, business case
Justification (transport, economy, ..., cost-benefits)
Decision-making politics and administration
Stakeholder involvement
Citizens involvement

RegioTram Groningen
Netherlands
Main reasons and risks to be discussed traditionally, and fundamentally (part 2):

Planning and (project-)organisation
Tendering, contracting
Construction, operation

Technocratic attitude
Conceiving the planning process as a rational process
Project focus & context (place, social, time)
Illusion of total control: believe in rational planning
Illusion of total control: technocratic contracting
Reasons for failure & Risk assessment

Illusion of total control: example DBFMO+ RegioTram Groningen

(SRT) Systeem Regiotram Groningen

Infrastructuur
- (1, INF) Inpassing & vormgeving infrastructuur
  - 1.1 TS Tramsysteem
    - 1.1.1 TB Trambaan
    - 1.1.2 Th Tramhaltes
    - 1.1.2.1 Halteobjecten
    - 1.1.3 TS Tracite-systeem
    - 1.1.3.1 Onderdelen
    - 1.1.3.2 Kabelsledeningen
    - 1.1.4 BS Beveiligings-systeem
    - 1.1.5 OT Opstelterrein

- 1.2 WQ Vegg
  - 1.2.1 RB Rijbaan
  - 1.2.2 FP Fietspad
  - 1.2.3 VP Voetpad

- 1.3 CO Constructies
  - 1.3.1 Kunstwerken
  - 1.3.2 Gebouwen

- 1.4 ST Straatmeubilair
  - 1.4.1 Openbare verlichting
  - 1.4.2 Informations-display
    - 1.4.2.1 Afvalbakken
    - 1.4.2.2 Afvalcontainer

- 1.5 GR Groen
  - 1.5.1 Bomen
  - 1.5.2 Hagen
  - 1.5.3 Heester
  - 1.5.4 Gras
  - 1.5.5 Oesters

- 1.6 CI Ondergrondse infrastructuur
  - 1.6.1 Kabels & leidingen
  - 1.6.2 Railing
    - 1.6.2.1 Bergingrails
    - 1.6.2.2 Hulgaansturingen
  - 1.6.3 Sonisage
  - 1.6.4 Kroon en pannen
  - 1.6.5 Duikers

(2. RM) Rollend materieel
- (3. B&O) Beheer & onderhoud
- (4. VD) Vervoersdienst
- (5. OMG) Omgeving

Rob van der Bijl
Bergen, Norway, April 2017
Incremental light rail planning
Approaches and examples
Towards a new approach of light rail projects

Once all reasons and risks have been determined still the question remains how to deal with them!
Some of my ideas on a new approach (part 1):

Focus on ‘why’ (not primarily on ‘how’ and ‘what’)
Accept and apply incremental planning
Keep it simple! (short term scope minimisation, proven technologies, …)
Project chopping
Create ‘faits accomplis’

Utrecht Uithoflijn
Netherlands
Towards a new approach of light rail projects

Once all reasons and risks have been determined still the question remains how to deal with them!
Some of my ideas on a new approach (part 2):

- Socially involved project management
- Unconventional approach towards politics and administration
- Opportunistic stakeholder management
- Elaborate and manage project ‘rind’ (context, future)

**Olsztyn, Poland, Tramwaje.** Our ‘mirror-case’ for Groningen RegioTram.
Eventually the tramway project of Olsztyn has been successful due to a pragmatic and flexible approach.
Towards a new approach of light rail projects

Example: Mulhouse – a better ‘why’

SE DEPLACER AUTREMENT

Vélo

326 kilomètres pour les cyclistes

La Camisa vient d’approuver son schéma directeur cyclable: tant mieux, car les habitants de l’agglomération sont nombreux à réclamer plus de pistes pour les cyclistes. C’est du moins ce qui ressort de l’enquête publique sur le PDU. Cadre de référence, ce schéma directeur prévoit à terme 231km d’itinéraires cyclables en plus des 95km déjà existants.

Mot d’ordre: la continuité

Plusieurs principes soutiennent la démarche, et notamment la notion d’itinéraire, afin d’assurer une continuité sur l’ensemble du territoire grâce à un « maillage » complet. Les tracés se feront dès que possible le long des grands axes de l’agglomération pour répondre à la plupart des besoins de déplacement. Plusieurs niveaux d’itinéraire seront réalisés: les itinéraires str intercommunales, répondant aux besoins de déplacement de courte distance; les itinéraires de proximité desserant les lieux les plus fréquentés; les itinéraires traversant l’ensemble du territoire seront réalisés en priorité.

Actions 24 25
Towards a new approach of light rail projects

Example: Portland Oregon Mulhouse – the best ‘why’
Towards a new approach of light rail projects

Portland also good example of:
Socially involved project management
Unconventional approach towards politics and administration
Elaborating project’s future plus wider context AND: ...
... Smart phasing!
Towards a new approach of light rail projects

Example: Utrecht – some incremental planning
Towards a new approach of light rail projects

Example: Aruba – a very simple project
Towards a new approach of light rail projects

Example: Alicante - chopping or smart phasing
Towards a new approach of light rail projects

Example: “Tijuana Trolley” San Diego (1981) - an irreversible fact
Discussion & Questions

www.lightrail.nl/61xlightrail

RVDB
Urban Planning – www.lightrail.nl/rvdb

LRNL
Lightrail.nl – www.lightrail.nl

DRS
Dutch Rail Sector – www.dutchrailsector.com

Fava
Urban Transformations by Natural Growth – www.favas.net
Thank you!...