PRT Plans in Swedish Cities
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Many PRT studies & activities in Sweden

Mega-study: 15 % higher modal share with PRT

Recent PRT studies in Sweden:

- The Mälar Valley
- Stockholm
- Södertälje
- Uppsala (Boländerna)

Conclusions
Many PRT activities in Sweden:
- Feasibility studies
- Research Projects
- Engineering study in Södertälje
- Test Tracks in Uppsala & Hofors

Many active forces promoting PRT in Sweden:
- 4 Governmental bodies
- 4 driving consultants
- KOMPASS
- 4 Suppliers:
  - Hardware & software providers
A Meta-study: 15 %-units higher modal share with PRT

Transit mode share with PRT - as a function of mode share without PRT (relationship based on 10 case studies with demand models)

Modal split with PRT = 0.86 * Modal split without PRT + 17.5 %

R² = 0.91
Some recent PRT studies in Sweden

- A high-speed PRT inter-urban network for the Mälar Valley
- City of Stockholm
- City of Uppsala
- City of Södertälje
The Mälar Valley Inter-urban high-speed PRT network

Linking local networks, 470 km double track, 200 km/hour
Major findings about PRT:

- Facilitates commuting
- Substantial travel time gains
- Social benefit-cost ratio: 1.35
- Promotes CO2-goals
- Promotes traffic safety
- Promotes efficient land use
The Stockholm PRT system, by SIKA
Linking urban nodes, 160 km track, 75 km/hour
The Stockholm PRT high speed network

**Purpose:** Examine social Costs & Benefits

**Scenarios:**
- Commuter rail link + Road Pricing+ PRT net

**Results:**
- **Direct traffic impacts:**
  - Shorter travel times
  - Shift from cars to podcars & commuter train
  - 35% less passenger car traffic in the morning rush hour
- **Benefit-Cost Ratio:** 0.97 to 1.21
- More detailed analysis is required
- Technology available, but needs development
The City of Södertälje

- 4 railways stations
- 2 commuter rail lines
- 13 urban bus lines
- 16 inter-urban bus lines
- 3 night bus lines
- 162 line-kms
- 14% public transport modal share
- 8% modal share locally
- 25,000 daily trips
PRT feasibility study for Södertälje

PRT-network:
• 43 km track
• 55 stations
• 700 vehicles
• 0-1 min wait time
• 45 km/hour speed

Impacts:
• Publ.Trp.modal share:
  without PRT: 8 %
  with PRT: 19%

To the year 2030:
From 25 000 to 67 500 daily publ.trp. trips by PRT
An engineering PRT study for Södertälje

- PTR for Södertälje – a vision for a sustainable city traffic – technique, design and costs
- Made in 2008-09 by WSP Civils & LogistikCentrum
- 4 phases examined
Design of PRT in Södertälje
A typical PRT station

A PRT station on top of a railway station
Södertälje BOT financing: PRT cheaper than bus: Capital cost: 6.6 m€ per km; total cost: 289 m€-43 km: Cost per trip: Bus: 1.64 €: PRT: 0.82 €

Södertälje annual costs & ticket revenue in M€

- Operating cost
  -22
  -7

- Capital cost:
  -22
  -3

- Ticket revenue:
  -16,5
  12,5
  PRT
  Bus

- Net cost:
  -18
PRT Feasibility study for Boländerna, Uppsala
A PRT Network for Boländerna
9.4 km single-track, 16 stations, 130 vehicles
Only 5% Bus trips in Uppsala today

Modal split at Boländerna in Uppsala today

- Car: 65%
- Walk/Bike: 30%
- Bus: 5%
20% (four times higher) modal split at Boländerna in Uppsala with PRT
Conclusions for Uppsala

- **Modal share up from 5 % to 20 %**
  - From 4 200 (by bus) to 16 000 daily trips (by PRT)
- **BOT financing proposed**
- **Cost per trip:** Bus: 1.80 €, PRT: 1.30 €
- **Benefit-Cost ratio:** 1.1 to 2.1. Average: 1.4
- **Forthcoming decision making:**
  - At present on public consideration
  - A new study will compare bus, LRT and PRT for the entire city of Uppsala
Conclusions: PRT Plans in Swedish Cities:

1. Many feasibility studies
2. Several activities promoting PRT
3. Still: no political decision, yet, but:
   A new governmental task to examine implementation of PRT in cities
4. Mega study shows: modal share up by 15 %- units on average with PRT
5. BOT-Build-Operate & Transfer financing proposed
6. Social benefits often higher than costs
7. Two comparative studies (Bus, LRT & PRT) going on, one for Uppsala, one more general