Regional Transport and Urban Design Concept of the Greater Berne (2012) - triggered by the Spatial Concept for Switzerland and the Urban Area Project

Urs Gloor
Deputy Head of Mobility Planning, City of Berne, Switzerland
Good example of a coordinated planning
• between the different levels of the public sector (government, cantons, agglomerations and municipalities)
• of urban development and transport
• of sustainable development
Contents

1. Spatial Concept for Switzerland
2. Urban Area Project
3. Example: Regional transport and urban design concept of greater Berne (2012)
Planning instruments

**Bases**
- Projet de territoire Suisse
  - Projets de territoire des territoires d'action
    - Exemples:
      - Conférence métropolitaine zurichoise
      - Projet de territoire du Nord-Ouest de la Suisse
  - Projets de territoire cantonaux
  - Projets de territoire des régions
  - Projets de territoire communaux

**Instruments**
- Exemples:
  - Plans sectoriels
  - Transports
    - Parties Programme et mise en œuvre «Route», «Rail» et «Aviation»
  - Dépôts on couches géologiques profondes
  - Réseaux d'énergie
  - Militaire
  - Surfaces d'assemblage
  - Plans directeurs cantonaux
  - Plans directeurs régionaux
  - Projets d'agglomération
  - Plans d'affectation communaux

**Implementation**
- Exemples:
  - Programme pluriannuel de la nouvelle politique régionale (NPR)
  - Programmes pour l'investissement et la construction
    - Masterplans
    - Plans de quartier
    - Projets-modèles
  - Concessions, autorisations, approbation de plans
  - Projets de construction, approbation
  - Plans et programmes de rénovation
  - Conceptions de développement du paysage
    - Parcs régionaux
    - Parcs d'agglomération
    - Horaires TP
Spatial Concept for Switzerland

Objectifs

- Objectif 1: Préservar la qualité du cadre de vie et la diversité régionale
- Objectif 2: Ménager les ressources naturelles
- Objectif 3: Gérer la mobilité
- Objectif 4: Renforcer la compétitivité
- Objectif 5: Encourager les collaborations

Stratégies

- Stratégie 1: Mettre en place des territoires d'action et renforcer le réseau polycentrique de villes et de communes
  - Carte illustrant la stratégie 1
  - Contributions des trois niveaux de l'État à la stratégie 1

- Stratégie 2: Mettre en valeur le milieu bâti et les paysages
  - Carte illustrant la stratégie 2
  - Contributions des trois niveaux de l'État à la stratégie 2

- Stratégie 3: Coordonner transports, énergie et développement territorial
  - Carte illustrant la stratégie 3
  - Contributions des trois niveaux de l'État à la stratégie 3

Territoires d'action

- Les territoires d'action reposant sur de grands centres urbains
  - L'espace métropolitain de Zurich
  - L'espace métropolitain trinational de Bâle
  - L'espace métropolitain lémanique
  - La Région de la ville fédérale

- Les territoires d'action reposant sur un réseau de villes moyennes et petites
  - Lucerne
  - Città Ticino
  - L'Arc jurassien
  - L'Aarland
  - Le Nord-Est de la Suisse

- Les territoires d'action de l'espace alpin
  - Le Gotthard
  - Les Alpes occidentales
  - Les Alpes orientales
Spatial Concept for Switzerland
Urban Area Project

The federal government has contributed to the sustainable development of Switzerland’s towns and agglomerations since 2001 with its Agglomeration Policy.

To date, this policy has concentrated heavily on coordinating settlement growth and transportation, as well as on improving cooperation at the institutional level within the agglomerations themselves and between the different levels of the public sector.
Urban Area Project

- Goals and conditions
- Competition between urban areas
- Subsidies and performance agreements
Urban Area Project

Goals and conditions:

• Improve the quality of the transport system
• Encourage urban development in the centers
• Increase road safety
• Reduce pollution and resource consumption
Urban Area Project

A kind of competition between urban areas:

• Effects
• Costs
• Planning status
• Results of the monitoring
Example

Regional transport and urban design concept of greater Berne (2012)
Greater Berne

Residents – Inhabitants

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2005</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berne (City in the center, red)</td>
<td>124'400</td>
<td>122'700</td>
<td>-1%</td>
</tr>
<tr>
<td>Communities round the center (orange)</td>
<td>79'000</td>
<td>80'300</td>
<td>+2%</td>
</tr>
<tr>
<td>Agglomeration community (yellow)</td>
<td>119'700</td>
<td>126'400</td>
<td>+7%</td>
</tr>
<tr>
<td>Rural communities (green)</td>
<td>49'600</td>
<td>50'100</td>
<td>+1%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>372'800</td>
<td>381'500</td>
<td>+2%</td>
</tr>
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</table>

Jobs (2nd + 3rd sector)

<table>
<thead>
<tr>
<th></th>
<th>1995</th>
<th>2005</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berne (City in the center, red)</td>
<td>143'800</td>
<td>148'100</td>
<td>+3%</td>
</tr>
<tr>
<td>Communities round the center (orange)</td>
<td>31'100</td>
<td>38'500</td>
<td>+24%</td>
</tr>
<tr>
<td>Agglomeration community (yellow)</td>
<td>39'200</td>
<td>43'300</td>
<td>+10%</td>
</tr>
<tr>
<td>Rural communities (green)</td>
<td>12'600</td>
<td>12'100</td>
<td>-3%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>226'600</td>
<td>242'000</td>
<td>+7%</td>
</tr>
</tbody>
</table>

City in the center
Community round the center
Agglomeration community
Rural community
Greater Berne - Analysis

Building area reserves

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>Grade of public transport quality</th>
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</thead>
<tbody>
<tr>
<td>Zentrum</td>
<td>6%</td>
<td>82%</td>
<td>8%</td>
<td>0%</td>
<td>3%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Kerngemeinden</td>
<td>1%</td>
<td>62%</td>
<td>33%</td>
<td>3%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Agglomerationsgemeinden</td>
<td>0%</td>
<td>21%</td>
<td>34%</td>
<td>29%</td>
<td>8%</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td>Agglomeration gemäss BFS</td>
<td>1%</td>
<td>44%</td>
<td>29%</td>
<td>17%</td>
<td>5%</td>
<td>1%</td>
<td>3%</td>
</tr>
<tr>
<td>Ländliche Gemeinden</td>
<td>0%</td>
<td>0%</td>
<td>9%</td>
<td>20%</td>
<td>26%</td>
<td>8%</td>
<td>38%</td>
</tr>
<tr>
<td>Regionalkonferenz BM</td>
<td>1%</td>
<td>34%</td>
<td>24%</td>
<td>17%</td>
<td>10%</td>
<td>2%</td>
<td>11%</td>
</tr>
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</table>

Tab. 4: Anteile Bauzonenreserven Wohnen nach Zentralitätstypen und ÖV-Güteklassen
Greater Berne – Analysis

Ongoing measures:

Development areas for areas of workplaces (ESP) & transport-intensive projects (VIV), situated at railway stations
Greater Berne - Analysis
Motorized Private Transport
Greater Berne – Analysis – Problems

Motorized Private Transport

- Congestions on the highways
- Overflow from the highways to the main roads
- Jams on the city road network
- Problems of capacity and tolerability
- Problems of tolerability
- Capacity constraints
- Alternative routes
Greater Berne - Analysis
Modal Split

Employed persons and students
Greater Berne - Analysis
Public transport
Greater Berne – Analysis – Problems
Public Transports
Greater Berne - Analysis
Network of cycle routes
Greater Berne – Analysis – Problems

Bikes
Greater Berne – Analysis – Problems

Pedestrians
Greater Berne
Trend 2030

<table>
<thead>
<tr>
<th>City in the center</th>
<th>Communities round the center</th>
<th>Agglomeration communities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural communities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>2030</th>
<th>Differenz 2007 – 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zentrum</td>
<td>122'658</td>
<td>124'428</td>
<td>1'770</td>
</tr>
<tr>
<td>Kerngemeinden</td>
<td>80'304</td>
<td>85'931</td>
<td>5'627</td>
</tr>
<tr>
<td>Agglomerationsgemeinden</td>
<td>128'425</td>
<td>143'384</td>
<td>14'959</td>
</tr>
<tr>
<td>Agglomeration gemäss BFS</td>
<td>331'387</td>
<td>357'743</td>
<td>22'356</td>
</tr>
<tr>
<td>Ländliche Gemeinden</td>
<td>50'131</td>
<td>51'162</td>
<td>1'031</td>
</tr>
<tr>
<td>Regionalkonferenz BM</td>
<td>381'518</td>
<td>404'905</td>
<td>23'387</td>
</tr>
</tbody>
</table>

Tab. 6: Trendentwicklung ständige Wohnbevölkerung nach Zentraltypen

<table>
<thead>
<tr>
<th></th>
<th>2005</th>
<th>2030</th>
<th>Differenz 2005 – 2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zentrum</td>
<td>148'146</td>
<td>154'137</td>
<td>5'992</td>
</tr>
<tr>
<td>Kerngemeinden</td>
<td>38'491</td>
<td>48'651</td>
<td>10'160</td>
</tr>
<tr>
<td>Agglomerationsgemeinden</td>
<td>43'257</td>
<td>48'838</td>
<td>5'581</td>
</tr>
<tr>
<td>Agglomeration gemäss BFS</td>
<td>229'893</td>
<td>257'626</td>
<td>27'733</td>
</tr>
<tr>
<td>Ländliche Gemeinden</td>
<td>12'152</td>
<td>11'598</td>
<td>554</td>
</tr>
<tr>
<td>Regionalkonferenz BM</td>
<td>242'045</td>
<td>263'224</td>
<td>21'179</td>
</tr>
</tbody>
</table>

Tab. 6: Trendentwicklung Arbeitsplätze (G/3. Sektor) nach Zentraltypen
Greater Berne
Trend 2030: Total increase by 30 %

2007 → 2030

Motorized private transport:  + 23 %
Public transport:  + 62 %
Totally:  + 30 %
Greater Berne
Trend 2030 – Challenges
Greater Berne
Strategie / Vision

• To concentrate urban development in the centers with good public transport as much as possible

• Protection of the landscape

• Traffic:
  - to avoid
  - to shift to public transport and non-motorized transport
  - to make the traffic more compatible
Greater Berne Strategie / Vision

City and communities round the center

• Urban development in locations with good public transport exploration and supply of high quality, in order to improve the modal split
• Prioritization of public transport in front of the motorized private transport
• Improve the efficiency and reliability (e.g., dose of motorized private transport) in favor of road-based public transport
• Check cycle prioritization before motorized private transport on urban major bike routes on which there is no loss of performance of road-based public transport and restrict the MIV not too much
• Promotion of pedestrian and bicycle traffic (everyday and recreational network, communications and signaling)
• Appreciation of tangential connections for pedestrian and bicycle traffic
• High compatibility of the roads through city districts and villages
• Mobility management and parking policy community across
• Good secure supply of B + R lots, even for city commuters from train stations to jobs
• Traffic management for steering and dosage (overload protection) of the motorized private transport and preference of the public transport
• Good service in the international traffic
Greater Berne Strategie / Vision

Agglomeration, centers on 4th and 5th level

- Urban development in locations with good public transport exploration and supply of high quality
- Good public transport opening up the core agglomeration and rural areas (such as for commuter and leisure traffic)
- Good opening up of central places with heavy pedestrian and cycling network of paths
- Compatible settlement through roads and safe traversing and turning for pedestrian and bicycle traffic
- Appreciation of tangential links for bicycle traffic
- Sufficient B + R and P + R sites at S-Bahn stops
Greater Berne Strategie / Vision

Rural areas

• Urban development in locations with good public transport exploration
• Comprehensive opening up done by MIT
• Ensuring good public transport primary care
• Compatible through roads and safe traversing and turning for pedestrian and bicycle traffic
• B + R and P + R car park at train stations and bus interchanges
• Priorities for recreation and leisure with regionally coordinated parking and info-points form
• Adequate public transport opening up to tour destinations
Greater Berne Strategie / Vision
Greater Berne  
Target scenario 2030

### People

<table>
<thead>
<tr>
<th>Type</th>
<th>2007</th>
<th>2030</th>
<th>Differenz 2007-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zentrum / Kerngemeinden</td>
<td>202'962</td>
<td>216'302</td>
<td>13'340</td>
</tr>
<tr>
<td>Agglomerationsgemeinden</td>
<td>128'425</td>
<td>136'972</td>
<td>8'547</td>
</tr>
<tr>
<td>Agglomeration gemäss BFS</td>
<td>331'387</td>
<td>353'274</td>
<td>21'887</td>
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<tr>
<td>Ländliche Gemeinden</td>
<td>50'131</td>
<td>51'631</td>
<td>1'500</td>
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<tr>
<td>Regionalkonferenz BM</td>
<td>381'518</td>
<td>404'905</td>
<td>23'387</td>
</tr>
</tbody>
</table>

*Tab. 13: Zielentwicklung ständige Wohnbevölkerung nach Zentralitätsstypen*

### Jobs

<table>
<thead>
<tr>
<th>Type</th>
<th>2005</th>
<th>2030</th>
<th>Differenz 2005-2030</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zentrum / Kerngemeinden</td>
<td>186'636</td>
<td>205'125</td>
<td>18'489</td>
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<tr>
<td>Agglomerationsgemeinden</td>
<td>43'257</td>
<td>46'082</td>
<td>2'825</td>
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<tr>
<td>Agglomeration gemäss BFS</td>
<td>229'893</td>
<td>251'207</td>
<td>21'314</td>
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<tr>
<td>Ländliche Gemeinden</td>
<td>12'152</td>
<td>12'014</td>
<td>-138</td>
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<tr>
<td>Regionalkonferenz BM</td>
<td>242'045</td>
<td>263'220</td>
<td>21'175</td>
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</table>

*Tab. 14: Zielentwicklung Arbeitsplätze (2./3. Sektor) nach Zentralitätsstypen*
# Greater Berne
## Target scenario 2030

**Computer simulation**

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>Modal Split</th>
<th>People</th>
<th>Increase since 2007</th>
<th>Modal Split</th>
<th>People</th>
<th>Increase since 2007</th>
<th>Modal Split</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Motorized private transport</strong></td>
<td>744 000</td>
<td>68 %</td>
<td>870 000</td>
<td>+ 17 %</td>
<td>63 %</td>
<td>861 000</td>
<td>+ 16 %</td>
<td>63 %</td>
</tr>
<tr>
<td><strong>Public transport</strong></td>
<td>346 000</td>
<td>32 %</td>
<td>505 000</td>
<td>+ 45 %</td>
<td>37 %</td>
<td>501 000</td>
<td>+ 45 %</td>
<td>37 %</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>1 090 000</td>
<td>100 %</td>
<td>1 375 000</td>
<td>+ 26 %</td>
<td>100 %</td>
<td>1 362 000</td>
<td>+ 25 %</td>
<td>100 %</td>
</tr>
</tbody>
</table>

- **very small differences**
For comparison:
Effects of two new tram lines

Two bus lines until 2010,
construction tram 2008 – 2010,
startup tram lines 2010
Greater Berne
Measures Settlement and Landscape

- Priorities of local residential and employment areas
- Priority areas for regional settlement expansion
- Identify compaction potential
- Define settlement boundaries
- Obtain green spaces
Greater Berne
Measures in the Transport
Greater Berne - Measures - Public Transport (Examples)

- Enlargement of the main station in the underground
- New tram line Köniz – Ostermundigen
- Development of the suburban railway system (every 15 minutes)
Greater Berne - Measures - Public Transport (Examples)

- Improvement of several interchanges between suburban railway and tram / bus

- Improve B+R at several railway stations
Greater Berne – Measures
Motorized private transport (Examples)

• Increasing the capacity of the motorway with a new tunnel

• Redesign of roads through several town centers (compatible and safe)

• Limit and dose the motorized private transport in the central part of the area (blue)

• Car park management in the whole area
Greater Berne – Measures
Pedestrian and bikes (Examples)

• Close network gaps for pedestrians and bikes:
  new bridge between two districts of Berne
  new bridge to a railway station

• Measures to improve the security for bikes
Greater Berne Measures

- Totally about 150 measures
- To carry out until 2030
<table>
<thead>
<tr>
<th>Measures</th>
<th>to concentrate</th>
<th>to protect the landscape</th>
<th>to avoid</th>
<th>to shift to public transport and non-motorized transport</th>
<th>to make the traffic more compatible</th>
</tr>
</thead>
<tbody>
<tr>
<td>Settlement</td>
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<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Landscape</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Public Transport</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Motorized private transport</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Pedestrian and bikes</td>
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<td>■</td>
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<tr>
<td>Combined mobility</td>
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<td>■</td>
<td>■</td>
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<td>■</td>
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<tr>
<td>Demand-side measures</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
</tbody>
</table>
Greater Berne
Effects and costs

• Assessment of the measures in terms of cost-effectiveness
Greater Berne
Participation of the people and the politics

• Public information events and discussions
• Information events and discussions with local politicians
• Everybody could comment the new concept

• Decision of the conference of the mayors
Strategie / Vision / Guidelines
Do we reach a sustainable development?

<table>
<thead>
<tr>
<th>Sustainable development</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking responsibility for the future</td>
<td>😊😊😊</td>
</tr>
<tr>
<td>Balanced consideration of the three target dimensions of sustainable development</td>
<td>😊😊😊😊 cost-benefit ratio, participation, ...</td>
</tr>
<tr>
<td>Incorporating sustainable development into all areas of policy</td>
<td>😊😊😊 transport planning combined with urban planning</td>
</tr>
<tr>
<td>Improving coherence and coordination between policy areas</td>
<td>😊😊😊😊 coherent development on the different levels of the public sector</td>
</tr>
<tr>
<td>Forging sustainable development partnerships</td>
<td>😊😊😊😊 conference of the mayors of the communities of the agglomeration (new)</td>
</tr>
</tbody>
</table>
Thank you!

urs.gloor@bern.ch