EaPGREEN
Partnership for Environment and Growth

This project is funded by the EU

Session II: Practical application of SEA in various countries

28 February 2017,

Kyiv

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SEA cases example

1. SEA for **Transport Strategy** of Kosice City, Slovakia
2. SEA of the **National Strategy** of Azerbaijan on the Use of **Alternative and Renewable Energy** Sources, 2015 – 2020
3. SEA for 5-year **Local Transport Plan,** Blackburn with Darwen (district), England
4. SEA of the **National Waste Management Strategy and Action Plan** of Georgia, 2016-2030
5. SEA for the 20-year **Forest Management Plan**, Canada

Case example 1: SEA for Transport Strategy of Kosice City, Slovakia

28 February 2017

Background information

- Strategy was elaborated in 2014 – 2015 in two levels
  - **Strategic** i.e. priorities for further transport development (mainly focused on public transport)
  - **Project** i.e. indication of priority activities and projects to be implemented (e.g. new tram lines, road sections etc.)

- The SEA was conducted in parallel with Strategy preparation

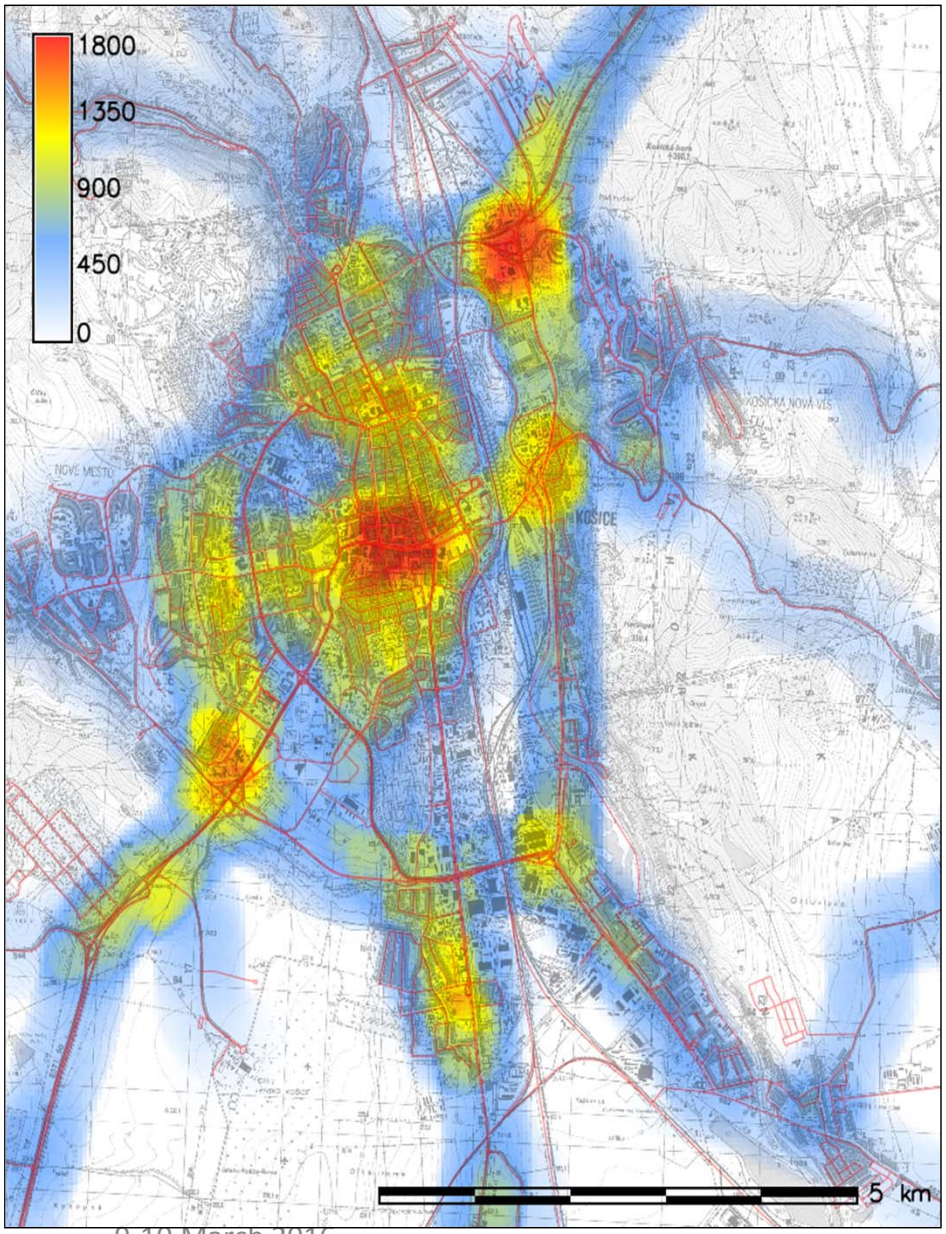
Key issues addressed in SEA

- Air quality
- Human health (air quality, noise, road safety)
- Biodiversity and nature protection
- Other issues
  - Climate change risks
  - Landscape

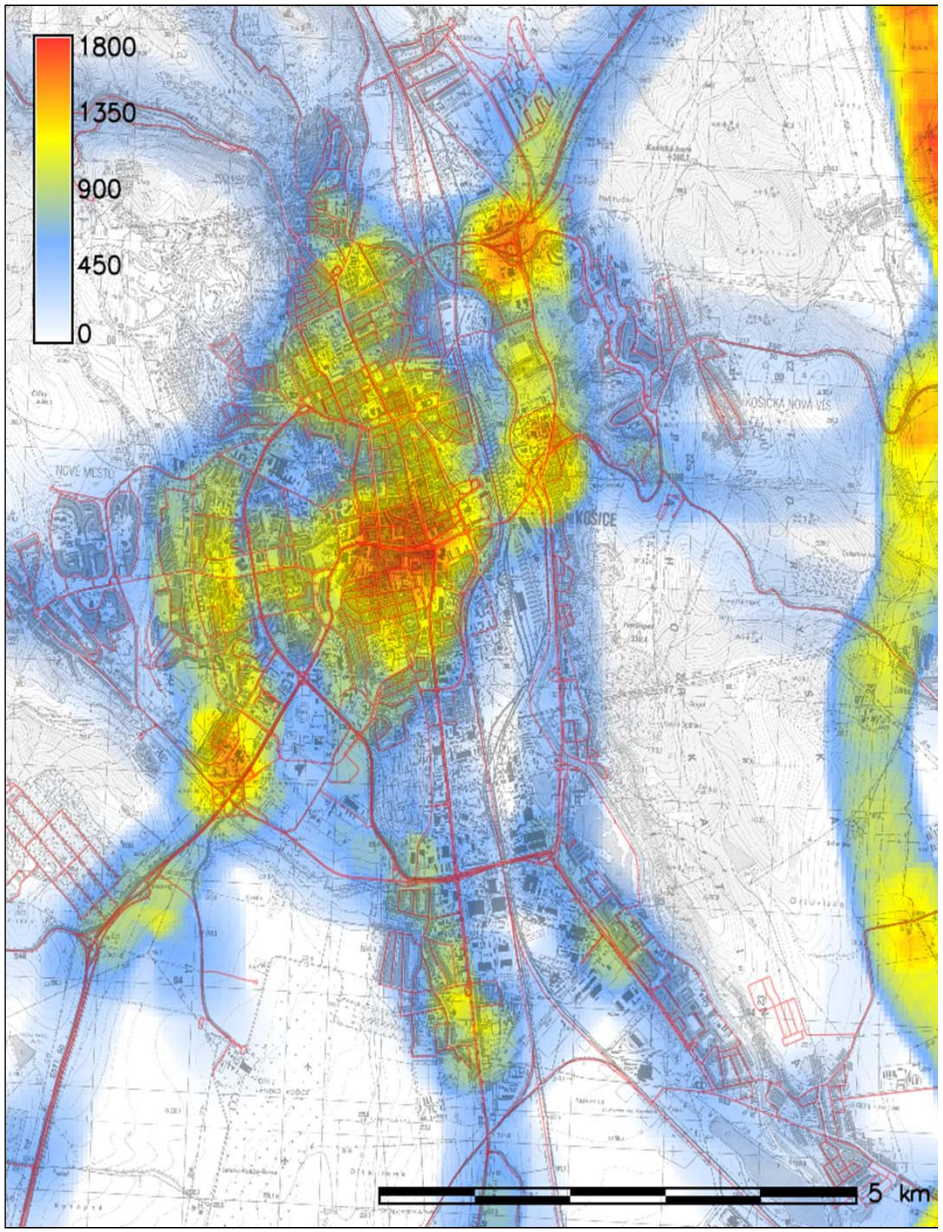
Approach to assessment – air quality

- Transport model available i.e. expected transport intensities in 2030 with and without the Strategy
- Emissions of NOx, PM10, PM2.5, and PAH from transport were calculated and compared for both scenarios
- Results were displayed in the maps and linked to population density i.e. for how many inhabitants the emissions of air pollutants will change

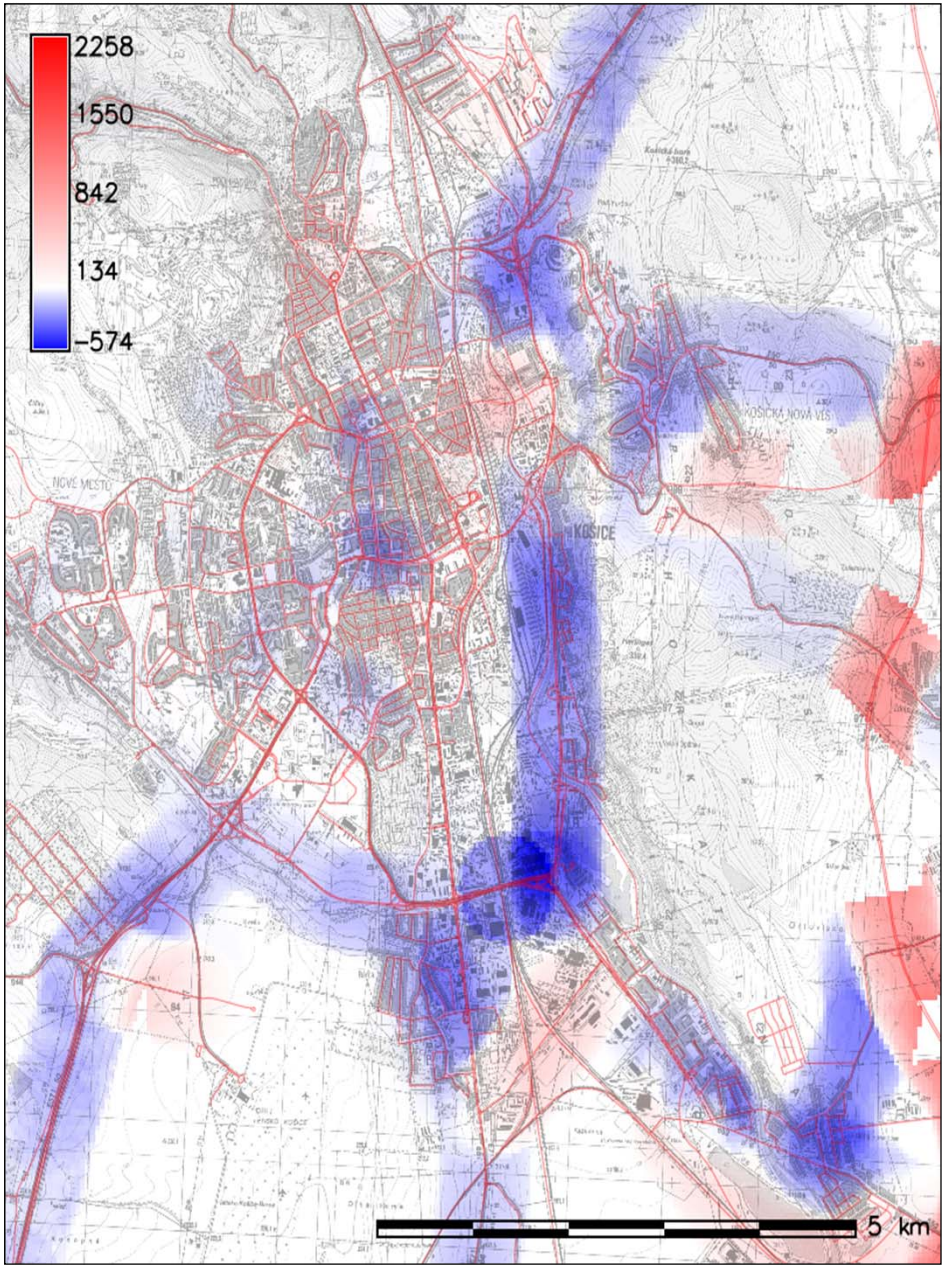
Emisná hustota $PM_{2,5}$ - nulový variant (kg/rok/ha)



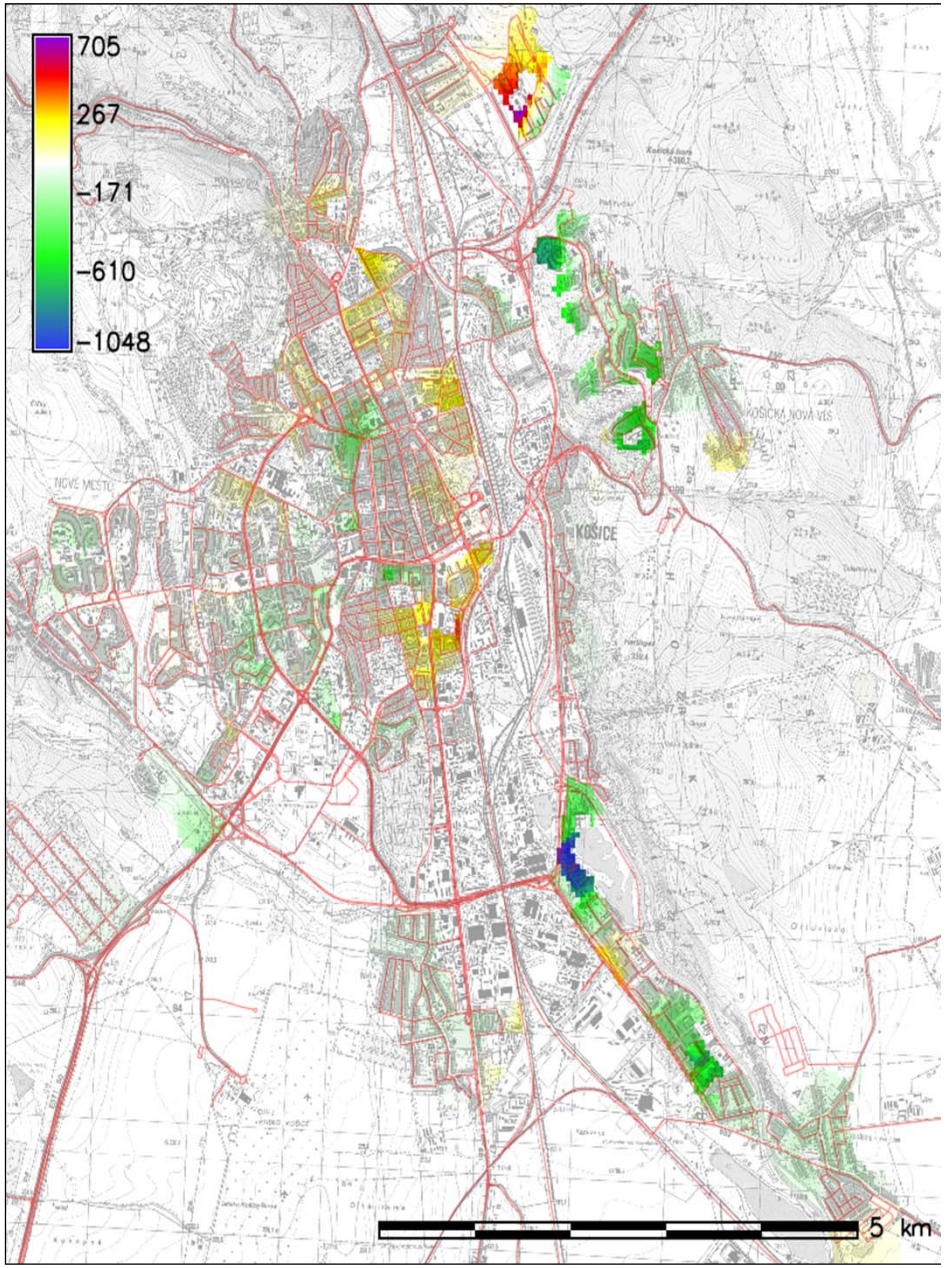
Emisná hustota $PM_{2,5}$ - návrhový variant (kg/rok/ha)



Emisná hustota $PM_{2,5}$ - rozdielová mapa (kg/rok/ha)



Emisná hustota $PM_{2,5}$ - rozdielová mapa (kg/rok/ha).(obyv/ha)



Proposed mitigation measures

- To apply additional measures to decrease dust in the city – i.e. to clean the streets on a regular basis (twice a week)
- To implement measure to protect inhabitants from noise in the most affected areas (noise protection walls, better windows)
- To construct certain new roads only if not other transport option is available (to avoid effects to nature)
- Selection on alternatives for specific road sections based on likely impacts on human health (air, noise) and biodiversity

The most of the recommendations were integrated in the final version of the Strategy

Success factors and lessons learned

☺ Primary goals of the Strategy

☺ Transport experts open for communication

☺ Timing of SEA i.e. initiation of SEA process together with start of the planning process

☺ Existence of the transport model enabling calculations of future noise levels and emissions to the air

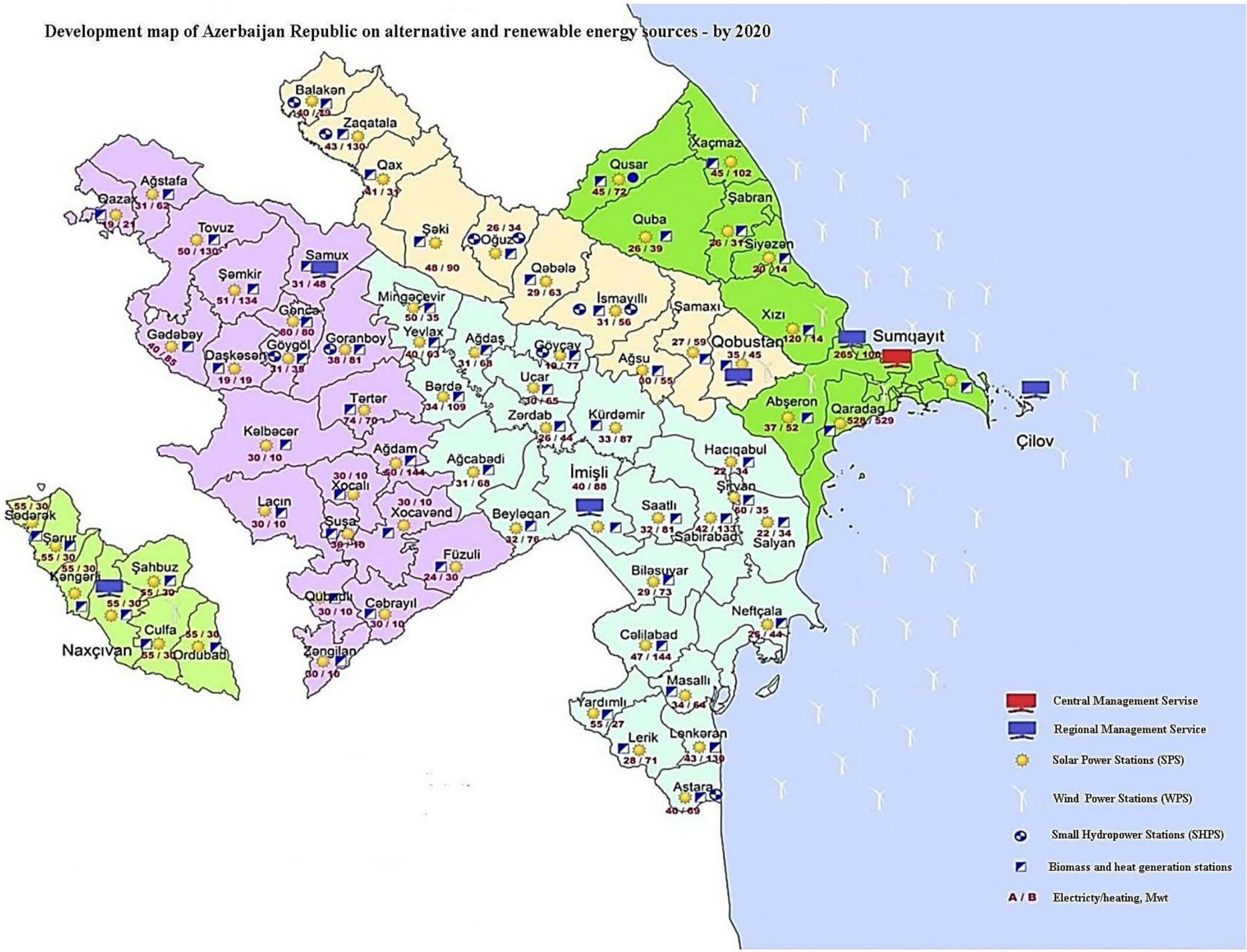
Case example 2: SEA of the National Strategy of Azerbaijan on the Use of Alternative and Renewable Energy Sources 2015 – 2020

Renewable resources elaborated by the Strategy

- Solar Energy
- Solar Heating and Geothermal Energy
- Biogas Energy
- Wind Energy
- Small Hydropower Plants

Overall targets:

- Increase the share of Alternative and Renewable Energy Sources (ARES) on electricity production up to 20%, and
- Increase the share of ARES on total consumption up to 9.7%.


Development map of Azerbaijan Republic on alternative and renewable energy sources - by 2020
Balakən
40 / 79
Zaqatala
43 / 130
Qax
41 / 33
Ağstafa
31 / 62
Qazax
9 / 21
Tovuz
50 / 130
Şəmkir
51 / 134
Samux
31 / 48
Gədəbəy
40 / 85
Göygöl
31 / 35
Daşkəsən
19 / 19
Goranboy
38 / 81
Gəncə
60 / 60
Şəki
48 / 90
26 / 34
Oğuz
Qəbələ
29 / 63
Mingəçevir
50 / 35
Yevlax
40 / 63
Ağdaş
31 / 68
Göyçay
19 / 77
Bərdə
34 / 109
Tərtər
74 / 70
Kəlbəcər
30 / 10
Ağdam
50 / 144
Laçın
30 / 10
30 / 10
Xocalı
30 / 10
Xocavənd
Şuşa
30 / 10
Füzuli
24 / 30
Qubadlı
30 / 10
Cəbrayıl
30 / 10
Zəngilan
30 / 10
Naxçıvan
55 / 30
Sədərək
Şərur
55 / 30
55 / 30
Kəngərli
Şahbuz
55 / 30
55 / 30
Culfa
55 / 30
55 / 30
Ordubad
İsmayıllı
31 / 56
Qusar
45 / 72
Xaçmaz
45 / 102
Şabran
Quba
26 / 39
26 / 31
Siyəzən
20 / 14
Şamaxı
27 / 59
Qobustan
35 / 45
Xızı
120 / 14
Sumqayıt
265 / 100
Ağsu
30 / 55
Uçar
30 / 65
Zərdab
26 / 44
Kürdəmir
33 / 87
İmişli
40 / 88
Beyləqan
32 / 76
Ağcabədi
31 / 68
Abşeron
37 / 52
Qaradağ
528 / 529
Çilov
Hacıqabul
22 / 34
Şirvan
60 / 35
Saatlı
32 / 81
42 / 133
Sabirabad
22 / 34
Salyan
Biləsuvar
29 / 73
Neftçala
26 / 44
Cəlilabad
47 / 144
Masallı
34 / 64
Yardımlı
55 / 27
Lerik
28 / 71
Lənkəran
43 / 130
Astara
40 / 69
Central Management Servise
Regional Management Service
Solar Power Stations (SPS)
Wind Power Stations (WPS)
Small Hydropower Stations (SHPS)
Biomass and heat generation stations
A / B
Electricty/heating, Mwt

Stages of SEA

1. **Scoping:** Defining the key environmental and health issues relevant to the Strategy that are to be addressed in the SEA.
2. **Environmental baseline**
3. **Assessment and mitigation measures:** Evaluation of the likely environmental and health effects related to the Strategy and formulation of relevant mitigation measures.
4. **Drafting of the SEA report**
5. **Consultations** with public, relevant stakeholders and government bodies
6. **Conclusion and recommendations:** Summary of the key findings, recommendations for the Strategy, and proposal of follow-up work, monitoring and evaluation to be undertaken.

Examples of key issues addressed in SEA

Air

☺ Higher use of ARES may lead to a reduction in energy produced from fossil fuels and thus to a decrease in emissions of pollutants into the air

☹ Use of biogas and its decomposition may negatively affect air quality

Climate change

☺ Higher use of ARE may lead to a reduction in energy produced from fossil fuels and thus to a decrease of GHG emissions

☹ The likely consequences of climate change can impact on natural resources and renewable energy production – such as the Caspian Sea level rise, reduction of water resources, more frequent floods, changes in biogas production (because of aridity), changes in wind direction.

Examples of key issues addressed in SEA

Water resources

☺ The use of ARE may contribute to the decrease of fossil fuels for energy and thus the decrease in pollution and waste spills from fossil fuel facilities into water resources.

☹ Use of large amounts of water to wash solar panels and use of chemical substances to the clean dust off the surface of solar panels

☹ Hydropower development can lead to changes in the water regime, which can result in drying out certain segments within river basins

☹ Offshore wind farms may affect sea currents

☹ Geothermal energy development can result in an increase of deep ground water use

Examples of key issues addressed in SEA

Livelihood

☺ ARE development may improve the quality of life of people, especially in remote and rural areas, through new sources of livelihood and employment, as well as through the upgrading of local infrastructure and community facilities

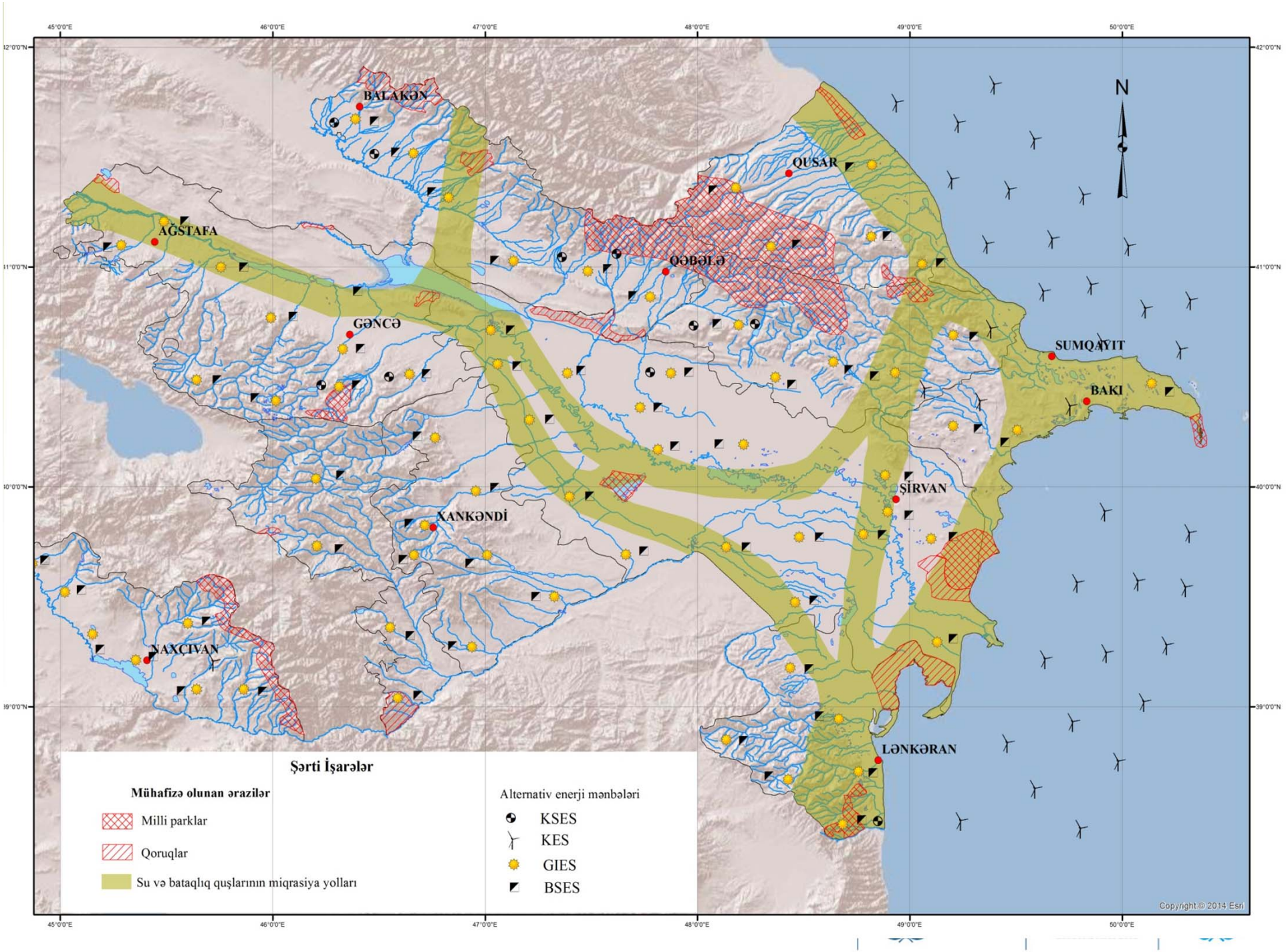
☺ Diversifying energy resources can lead to a reduction in the use of energy from fossil fuels and an improvement in the energy supply

☺ Hydro, solar, and wind energy plants demand land acquisition, which may impact material cultural heritage and traditional use of lands

Examples of key issues addressed in SEA

Linkages to other economic sectors

- ☹ Offshore wind farms may have an impact on tourism by reducing the attractiveness or tourist interest in coastal areas
- ☹ Offshore wind farms can lead to conflicts with the oil, gas and fishing industries
- ☹ New construction works (including hydropower, solar, wind farm facilities and transmission lines) can compete with agriculture regarding the use of natural resources (e.g. producing biomass on agricultural soil)
- ☹ Changing the water regime as a result of hydropower development may have negative impact on fishing industry, which may negatively affect local economy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GƏNCƏ
SUMQAYIT
BAKI
ŞİRVAN
XANKƏNDİ
NAXÇIVAN
LƏNKƏRAN
Şərti İşarələr
Mühafizə olunan ərazilər
Milli parklar
Qoruqlar
Su və bataqlıq quşlarının miqrasiya yolları
Alternativ enerji mənbələri
KSES
KES
GIES
BSES
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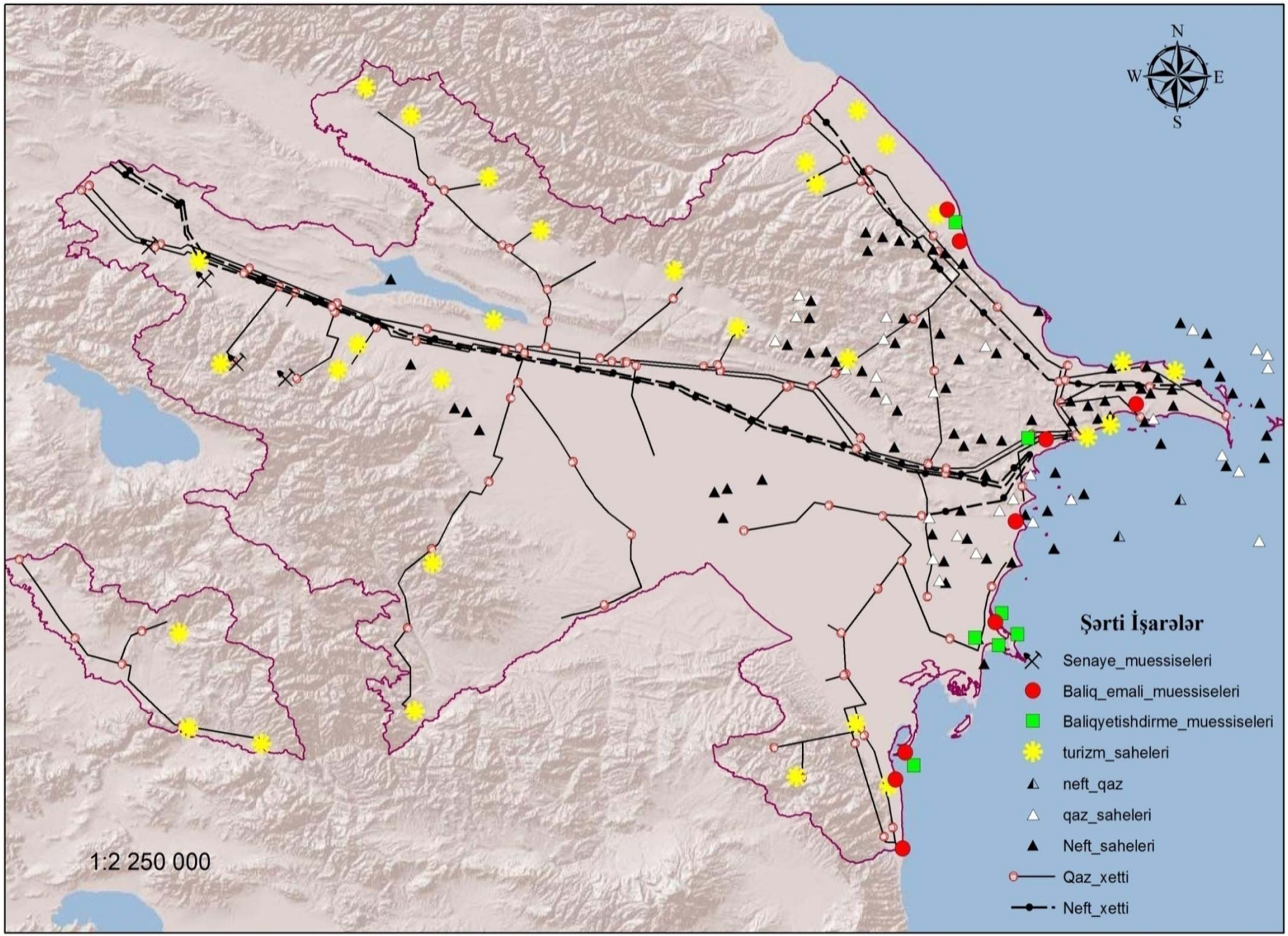
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Baliqyetishdirme_muessiseleri
turizm_saheleri
neft_qaz
qaz_saheleri
Neft_saheleri
Qaz_xetti
Neft_xetti
1:2 250 000

Qualitative analysis

Strategy's targets	Economic sectors					
	Agriculture	Industry	Energy	Tourism	Water supply and sanitation	Waste management
Small Hydropower Plants	–	+	+	–	–	0
Solar power	–	+	+	+	–	0
Wind farms	+	+	+	–	0	0
Biomass (biogas) energy	+	–	+	–	–	+
Geothermal	0	+	+	0	–	0

Examples of mitigation measures

Strategic level

- The Strategy should promote the recycling and reuse of precious natural resources and materials to the greatest extent possible, in order to enhance the environmental sustainability of the ARES projects.
- The Best Available Techniques (BAT) should be employed to minimize adverse effects to the environment and health
- The Strategy should outline measures for monetary contributions that the operators/developers of the ARES pays, which would directly fund local community enhancement projects within a close proximity to the ARES developments, such as upgraded roads, new community buildings, sports fields or other needed facilities.

Examples of mitigation measures

Macro-level siting guidance:

- Location of specific ARE projects should follow territorial analyses carried out within SEA and related recommendations:
  - The facilities for energy production from biomass and waste should not be located in areas that currently have low air quality.
  - Wind farms should not be located within bird migratory corridors or within areas of importance for bird species
  - Wind turbines should not be located closer than 0.5km – 1km (depending on the noise studies and other impact studies) from residential buildings and 500m from work facilities.

Lessons learned

- It is important to consider both positive and negative effects
- SEA should not be limited only to environmental issues, also linkages to the other economic sectors should be addressed
- SEA should ‘look into future’ and provide guidelines for further planning and/or development of specific projects
- Communication to planning agency is essential to ensure consideration of SEA results

Case example 3: SEA for the 5-year Local Transport Plan, Blackburn with Darwen, England

- Duration: 2006-2011 (2nd cycle)
- Area: a borough in Lancashire county (1 large town, 1 small town & country-side), 2/3 of Yerevan size, ~140,000 people
- Funding for LTP implementation: central + local revenues + external = £53.1m
- SEA conducted concurrently with the LTP-making from summer 2005 to February 2006
- Final LTP submitted to the Government in March 2006

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Process:

- Stage A – Setting the context and objectives and establishing the baseline
- Stage B – Deciding on the scope and developing/refining alternatives/options
- Stage C – Assessing the effects of the plan
- Stage D – Consulting on the draft plan and the Environmental Report
- Stage E – Monitoring implementation of the plan

Key tool: sustainability objective-led analysis

KEY:-

✓ = Consistent
x = Potentially inconsistent
O = Uncertain
= No relationship

▒ = SA Objective not relevant to LTP

DRAFT PLAN OBJECTIVES

SEA objectives	A). Complementarity – [illegible] designed to support and supplement existing major investment policies	B). Integration – Coordination of land use and transport policies	C). Monitor and manage negative environmental impacts of transport	D). Promote road safety	E). Asset management – maintain road network and bridge infrastructure in appropriate condition to accommodate vehicular needs	F). Accessibility – create conditions where all individuals can pursue and fulfil their personal needs and ambitions	G). Responding to community need
1. Secure economic inclusion	✓	✓				✓	✓
2. Develop and maintain a healthy labour market	✓					✓	✓
3. Develop the strategic transport, communications and economic infrastructure	✓	✓			✓	✓	
4. To target interventions which reinforce our manufacturing strengths and help the growth of our service sector	✓					✓	
5. To regenerate our Town Centres by placing them at the forefront of the urban and rural renaissance agenda	✓		✓			✓	
6. To create modern business parks that support the sustainable growth of the regional economy			x			x	
7. Diversification of the rural economy is assisted and local needs are met without detriment to the environmental qualities of the countryside							✓
8. Involve the community in developing the proposal							✓
9. Promote healthy living environments				✓			
10. Improve access to local services and facilities							
11. Help to reduce crime and reduce anti-social behaviour						✓	
12. Promote social and ethnic equality						✓	
13. Encourage life long learning							
14. Reduce poverty	✓					✓	
15. Improve the design quality and environmental standard of housing							
16. Support sustainable modes of travel		✓	✓			✓	
17. The existing urban open space network and built environment is protected and enhanced							
18. The quality of the townscape and its contribution to the public domain is enhanced through good urban design							
19. Promote sustainable waste management and reduce all types of pollution			✓				
20. Reflect and maintain local character							
21. Achieve cleaner air for everyone			✓				
22. Limit and adapt to climate change			✓			✓	
23. Increase use of locally produced goods, foods and services		✓				✓	✓
24. Create neighbourhood networks that are accessible, safe and provide quality routes linking our residents with: a. Local public services and neighbourhood shopping facilities b. Our town centres and edge of town strategic employment locations c. Our parks, culture and leisure facilities and the surrounding countryside d. The regional and national rail and road networks	✓	✓				✓	✓
25. Productive use of existing land and buildings to improve the urban environment							
26. The location of development within the existing urban area to maximise the use of existing services and infrastructure and protect the surrounding countryside	▒	▒	▒	▒	▒	▒	▒
27. The high quality landscape setting of the two towns is recognised and protected and where appropriate enhanced	▒	▒	▒	▒	▒	▒	▒
28. Protect and enhance the Borough's historic environment, townscape and archaeological resources							
29. Use sustainable construction techniques							
30. Sustainable use of energy and other resources		✓	✓			✓	
31. Protect areas of wildlife and landscape value and improve access to them			✓				
32. Restore and protect land and soil			✓				
33. Use natural resources prudently and manage existing resources sustainably		✓	✓				

Issues / Problems / Opportunities	Alternative Strategies			
	1: Roll forward LTP1 Strategy ("Without the plan" option)	2: Accommodate Demand	3: Manage Demand	4: Selected Strategy
Accessibility	C2, J2	C2, J1	C2, J2	C1, J2
Traffic	E3	E1	E2, elements of E3 and E4; I1, elements I2 and I4	E3, E4, I2, I3
Dominance of car as means of travelling to work and school	I2	Not seen as problem under this strategic option	I1, I2, I4	I2, I3
Focus of bus use on small number of corridors	G2	No emphasis on bus use under this option	G1	G1, elements of G2 through "Smarter Choices"
Rail	L2	L1	L2	L2
Pedestrians and cyclists	H1	No emphasis on pedestrian travel under this option	H2, C2	H1, H2, C1
Taxis	J2	J1	J2	J2
PTWs	O2	O1	O1	O1
Freight	Not considered within LTP1 strategy	P1	P2	P2
Rights of way	Q1	Q2	Q1	Q1
Road safety	D1 / D2 / D3 – option not affected by overall strategy	D1 / D2 / D3 – option not affected by overall strategy	D1 / D2 / D3 – option not affected by overall strategy	D1
Air quality	Detailed options being developed through AQMA Action Plans	Detailed options being developed through AQMA Action Plans	Detailed options being developed through AQMA Action Plans	Detailed options being developed through AQMA Action Plans
SSSIs	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy
Landscape and access to the countryside	Q1 / Q2 – option not affected by overall strategy	Q1 / Q2 – option not affected by overall strategy	Q1 / Q2 – option not affected by overall strategy	Q1
Flooding	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy
Built and historic environment	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy	No options available at level of LTP strategy
Health	J2	J1	J2	J2
Educational attainment	J2	J1	J2	J2
Economic structure	A2 but not generally "destination driven" strategy, C2	A1, C2	A2, C1	A2 but not with punitive measures, C1

Benefits and Lessons Learnt

- Changes to the LTP to introduce environmental and sustainability perspective:
  - The SEA highlighted the need to explicitly link the LTP to environmental, health and sustainability objectives of national and regional policies
  - SEA allowed the LTP to consider and coordinate with other local plans/initiatives that were previously overlooked by transport planners, such as housing initiatives, community development initiatives
  - SEA helped pay more attention to ways of encouraging people to choose to **travel by public transport, foot or bicycle,** rather than just building new and better routes

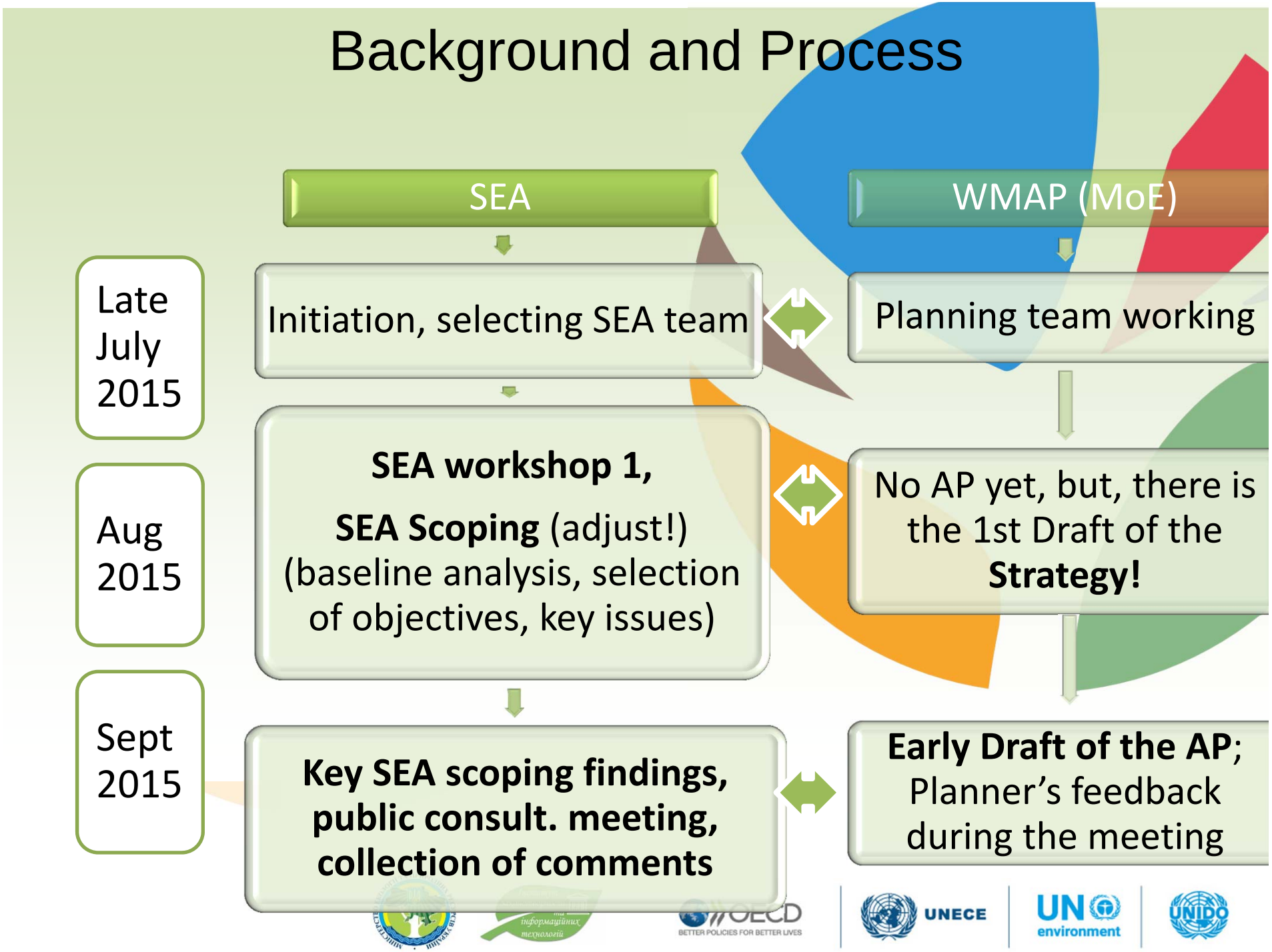
Benefits and Lessons Learnt (cont.)

- SEA process and findings informed the LTP development (baseline, actions, monitoring)
- SEA identified tensions between some objectives of the LTP and proposed ways to balance those competing objectives
- SEA proposed ‘win-win’ solutions where the strategy impacts positively on numerous objectives
  - For instance, SEA streamlined a “Smarter Choices” theme within the plan intending to achieve modal shift

Case example 4: SEA of the National Waste Management Strategy and Action Plan of Georgia, 2016-2030

28 February 2017

Background and Process



Background and Process

SEA

WMAP

Oct 2015

Key SEA scoping proposals issued to the WM Planners; Revising the SEA Scoping report & translating; **Objectives-led assessment + effects assessment – as strategic as the AP;** Preliminary SEA recommendations, mitigation and monitoring proposals

Integration of the SEA scoping messages and proposals in the AP;

Next Draft of the AP

Joint Public consultation meeting

Nov 2015

Analysis of comments, another set of the **SEA proposals for the WM Planners**; **Final SEA Report in two languages**

Final Draft AP for disclosure?

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Effect and Risk Assessment and Mitigation

Objectives/targets and relevant actions of the Waste Management Action Plan	Water/Soil	Air/Climate change	Biodiversity/ Protected Areas	Public Health	Geology/Mineral Resources	Social-Economic Issues	Assessment and Mitigation/Enhancement Recommendation
Objective 0.1. Waste Management legislation in harmony with EU requirements and International Conventions developed, implemented and enforced Target 1.1. All necessary Laws and by-laws for full legal transposition of AA (Association Agreement) requirements as regards waste adopted and implemented A[1] 1.1.1 –A 1.1.8 Target 1.2. International Conventions fully transposed, implemented and enforced A 1.2.1 – A 1.2.4 Target 1.3. Waste legislation enforced effectively A 1.3.1 – A 1.3. 5	+	+/-	+	+	+	+/-	In general, adoption of the relevant waste management related by-laws in ac to EU requirements will affect positively on air, water and soil quality in t across Georgia. Potential damage to soil, surface and groundwater as a emissions or abstractions due to waste will be reduced. It will affect hea population positively in the long term. Potentially the effect for biodive protected areas will be positive as well (A 1.1.1 – 1.1.8). Incineration of waste will reduce landfill gas emission but at the same tim of emissions from incineration exists (A 1.1.2). Waste transportation is significant source of air emission; therefore settin requirements defined by proposed by-law may have a positive effect; how be costly (A 1.1.4). Healthcare waste can be hazardous, therefore, setting certain requiren healthcare waste management will affect positively on the environment a health (A 1.1.5). Animal waste can be hazardous; its management will have positive effect be done adequately, Enforcement of animal waste regulation is essential for animal waste management (A 1.1.6). Preparing and adopting law on hazardous waste shipment will have affect and minimize emissions during shipments (A 1.1.7).

[1] Relevant Action of the Action Plan

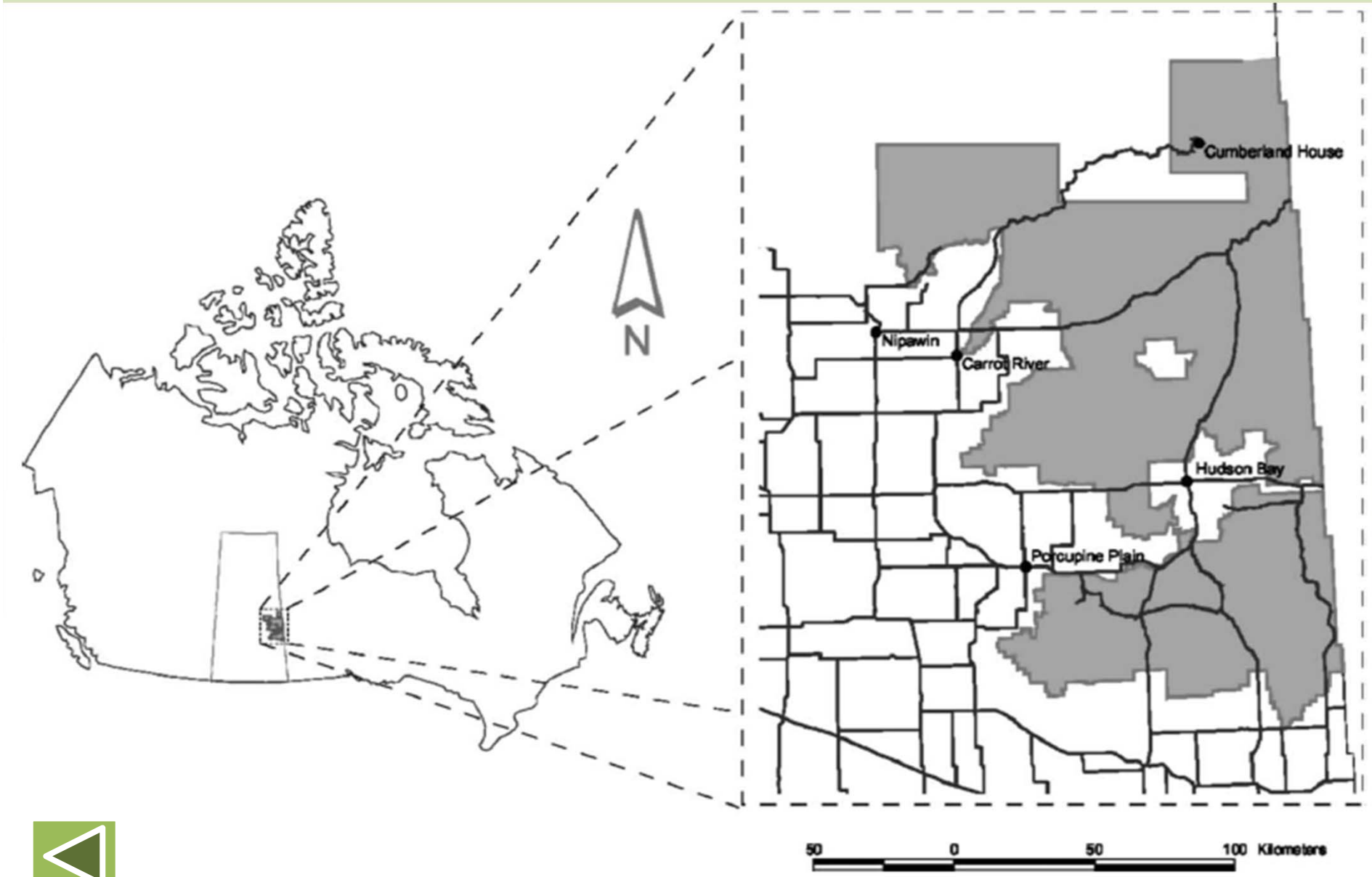
Lessons Learnt

- SEA pointed to the rather weak link between the plan's actions and the baseline data
- SEA provided advice on how to streamline the planning process and make the vision of the Strategy more environmentally friendly
- SEA recommendations can be provided in several sets at various SEA/planning stages and can address various levels: national & regional as well as more specific (local)
- Need to allocate more time for planning/SEA to allow the SEA to provide efficient inputs to the planning process (due to time constraint only some recommendations of the SEA had been considered)

Case example 5: SEA of the 20-year Pasquia-Porcupine Forest Management Plan, Canada

Background

- Area: two million hectares or 20000 km2 (about the size of Khmelnitska or Cherkaska Oblast of Ukraine)
- Duration: 1999-2019 (first planning cycle)
- FMP and SEA prepared in an integrated manner by a private proponent with continuous support of the MoE, 1997-1998
- FMP renewed every 10 years
- Monitoring and feedback through local-level annual operating plans
- FMP adopted subject to Ministerial biophysical and socio-economic approval conditions
- Changes occurred to the approved plan actions, because of which both the FMP and its SEA were amended in 2005



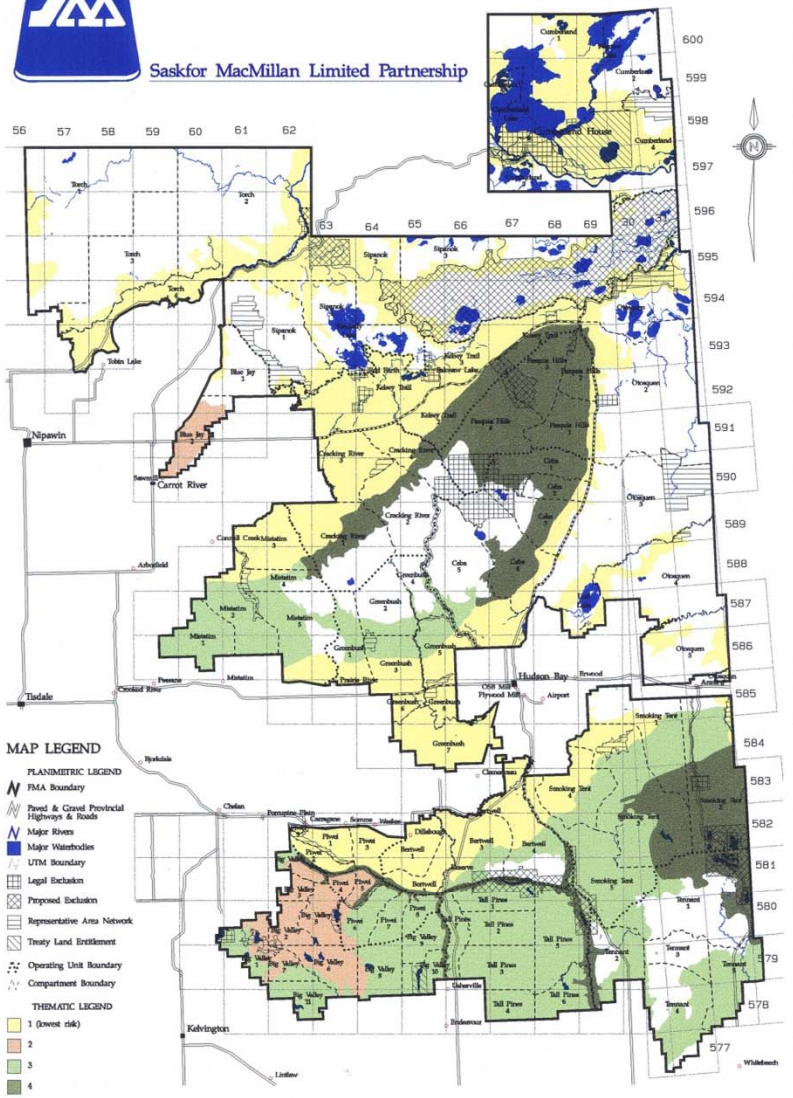
Location of the Pasquia-Porcupine Forest Management Area, Saskatchewan.
Source: Adapted from Gachechiladze *et al.* (2009).

Benefits of the SEA

- Integrated SEA & FMP: inclusion of biophysical & socio-economic aspects
- Increased commitment to and awareness about sustainable forest management
- Better links to the higher-level Integrated Land Use Plan prepared by the provincial MoE
- Specific attention to and feedback from stakeholders and local communities (aboriginal, vulnerable, forest/ecosystem service users, authorities, etc.)

Soil Erosion Risk (Dominant Soil-Landscape)
within the SMLP Forest Management Area

Saskfor MacMillan Limited Partnership



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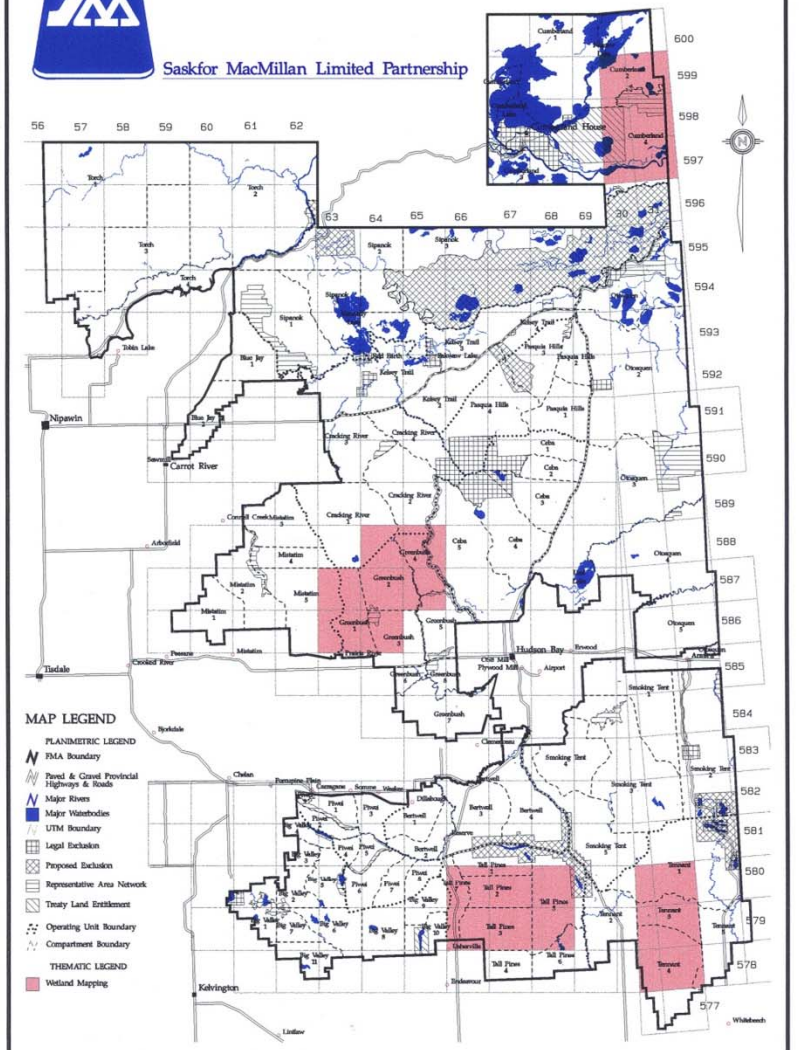
Tiles with Wetlands Mapping
within the SMLP Forest Management Area

Saskfor MacMillan Limited Partnership



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MAP 14

MAP 20

Benefits of the SEA (cont.)

- SEA increased the credibility of the FMP
- SEA contributed to the improved corporate image of implementers
- Avoided costs for low-level SEAs and EIA due to the profound SEA follow-up programme merged with the plan performance monitoring
- Follow-up to SEA: the possibility to continuously demonstrate to the stakeholders the relevance of the implementers' actions and their overall responsibility for the FMP delivery process.

Questions or comments?

Thank you for your attention