



SEA outcomes and benefits – case examples

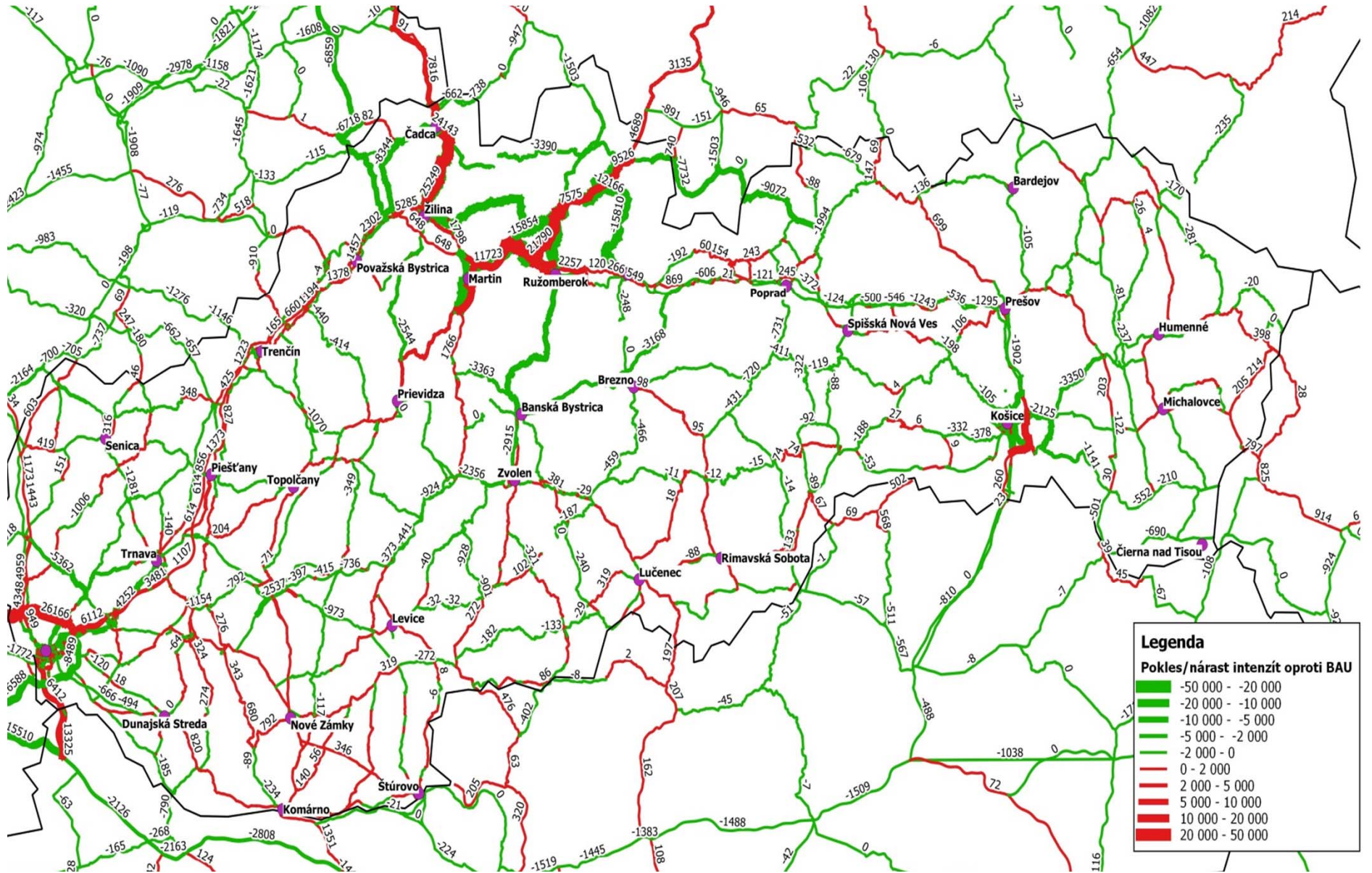
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Chisinau, 15 December 2017

Case example 1: SEA of the National Transport Development Strategic Plan until 2030, Slovakia



Background information

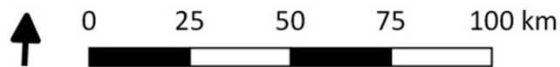
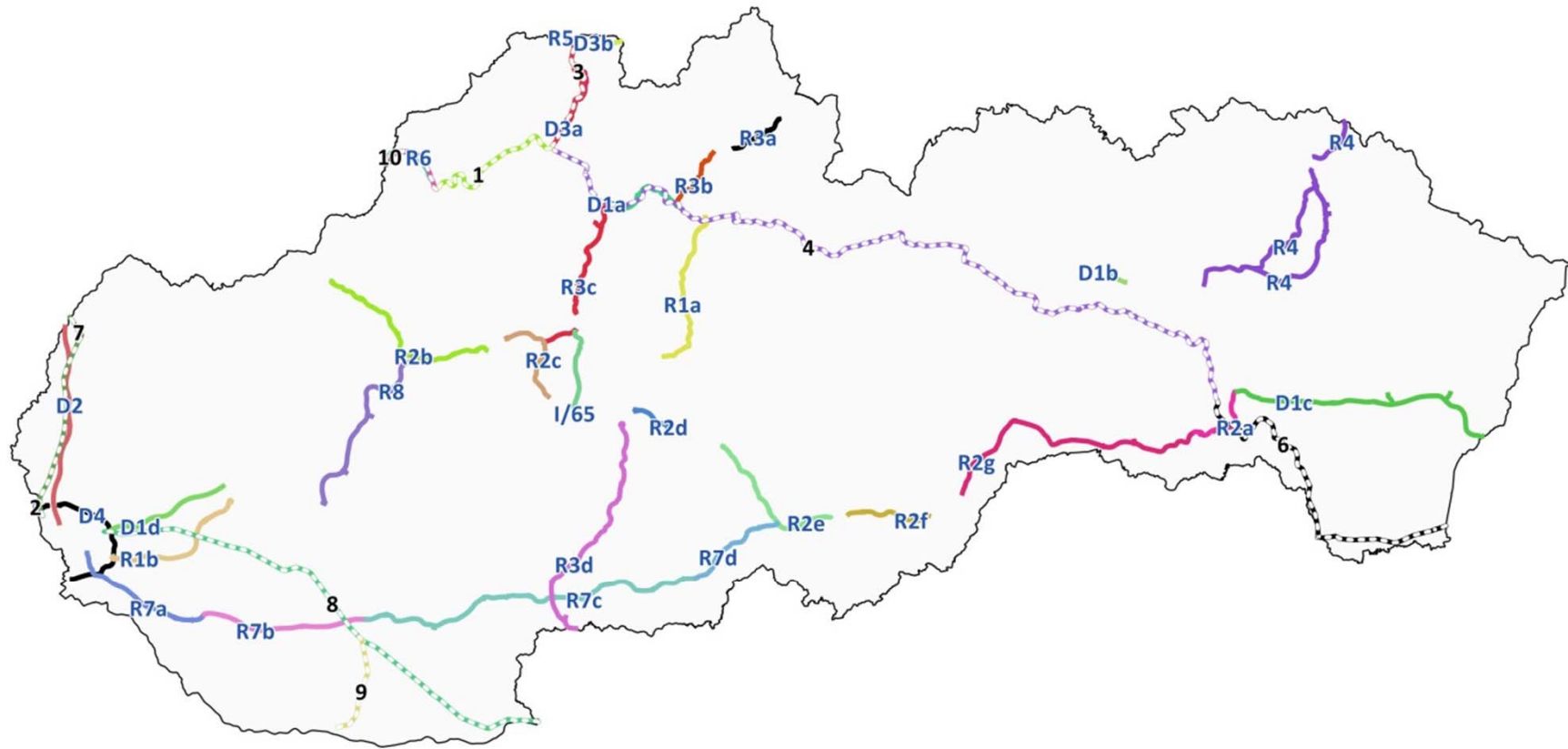
- Strategic plan is a long-term planning document as a basis for EU co-funding of the transport projects
- Measures proposed for following transport modes
 - Roads
 - Railways
 - Air transport
 - Water transport
 - Public and non-motorized transport
- Road transport model: information on present and future traffic intensities on the road network and their changes in case implementing individual investments
- Outlined road and railway corridors (however not precisely spatially determined)



SEA approach

- Qualitative assessment
 - Socio-economic aspects (e.g. employment, livelihood, active lifestyle and related health issues), water resources, biodiversity and nature protection, cultural heritage
- Quantitative analyses
 - GHGs emissions
 - Air quality
 - Noise
- Spatial analyses
 - Air quality
 - Noise
 - Biodiversity and nature protection
 - Climate change risks
 - Cultural heritage

Orientáčn  sch ma zva ovan ch infraštrukt rn ch opatren  s potenci lne v znamn mi vplyvmi na  ivotn  prostredie na n rodnej  urovni

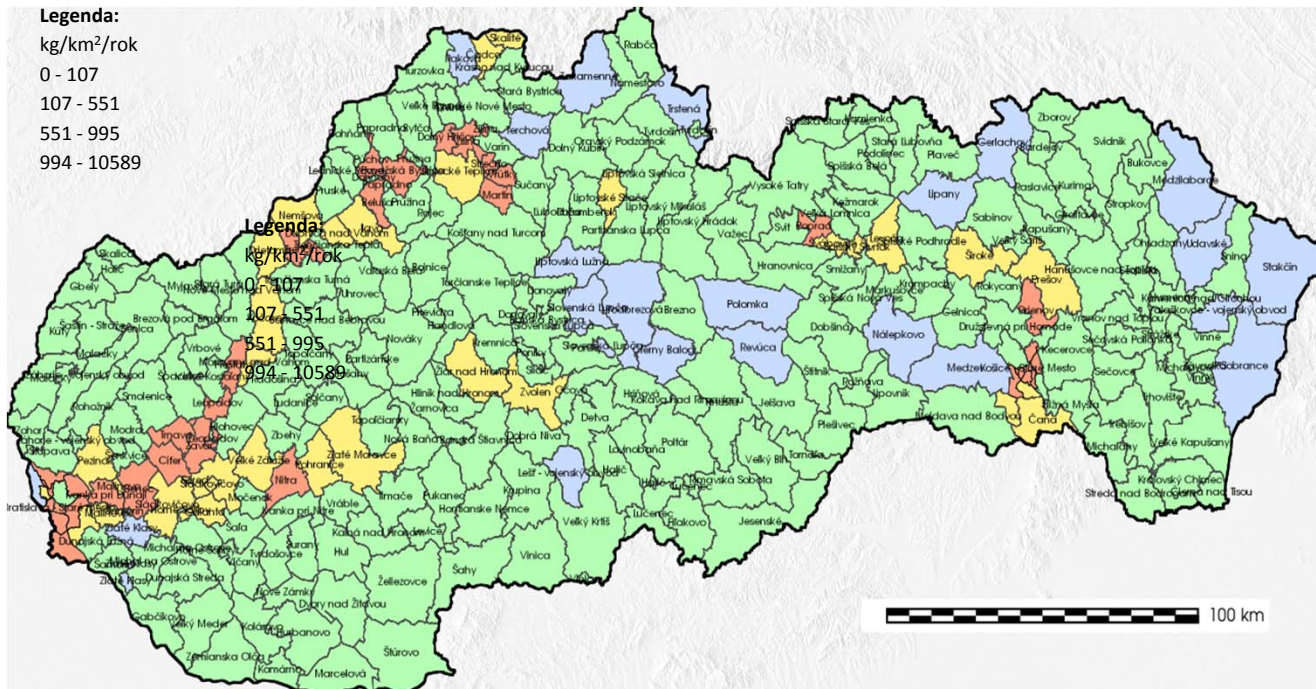


---  elezni n  koridory
— cestn  koridory

Zostavil: Integra Consulting s.r.o. (2016)

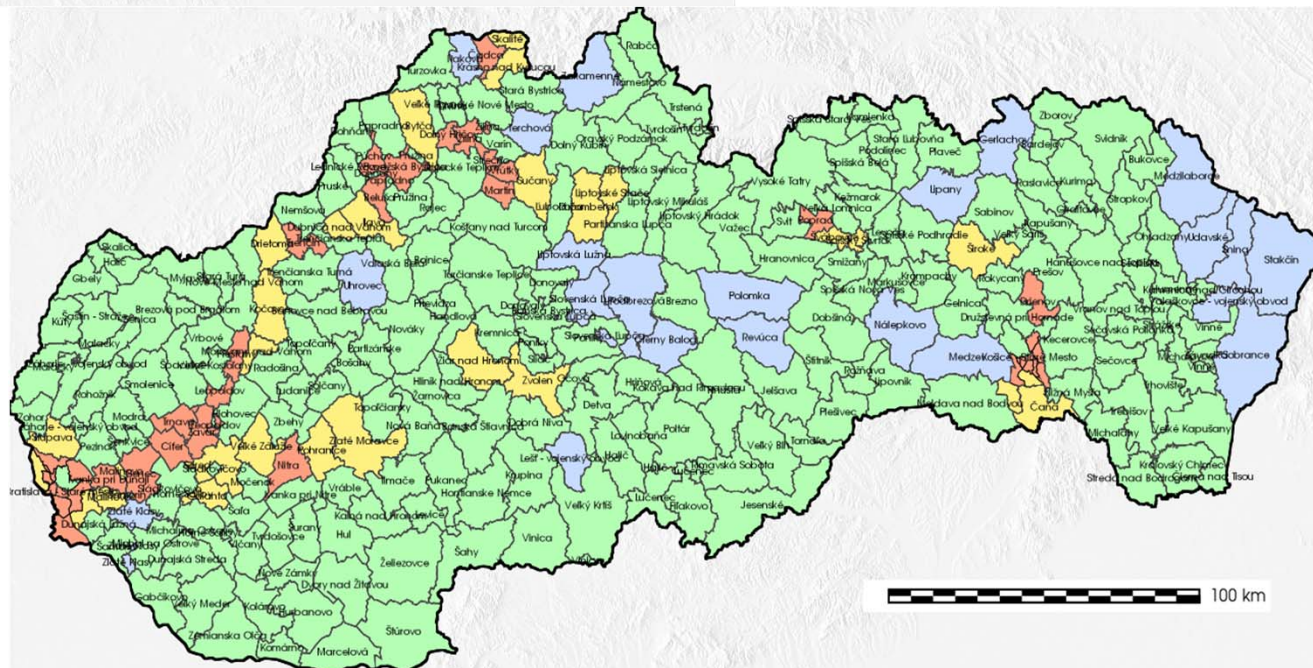
Legenda:

- kg/km²/rok
- 0 - 107
- 107 - 551
- 551 - 995
- 994 - 10589



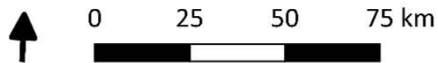
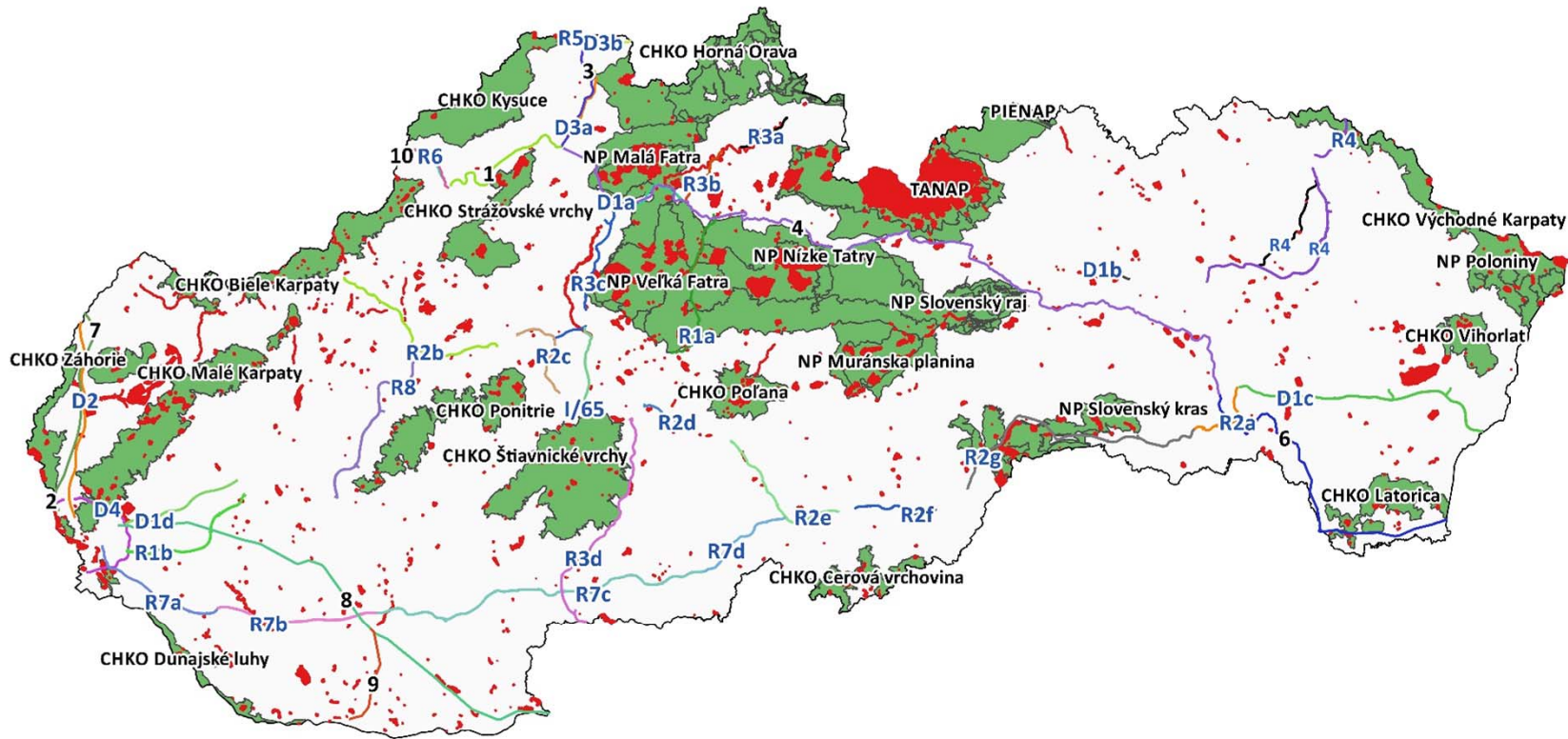
Emissions of PM10 – BAU scenario (2030)

Emissions of PM10 – with Plan's measures (2030)



Biodiversity and nature protection

Identifikácia potenciálnych konfliktov koridorov dopravnej infraštruktúry
s chránenými územiaми



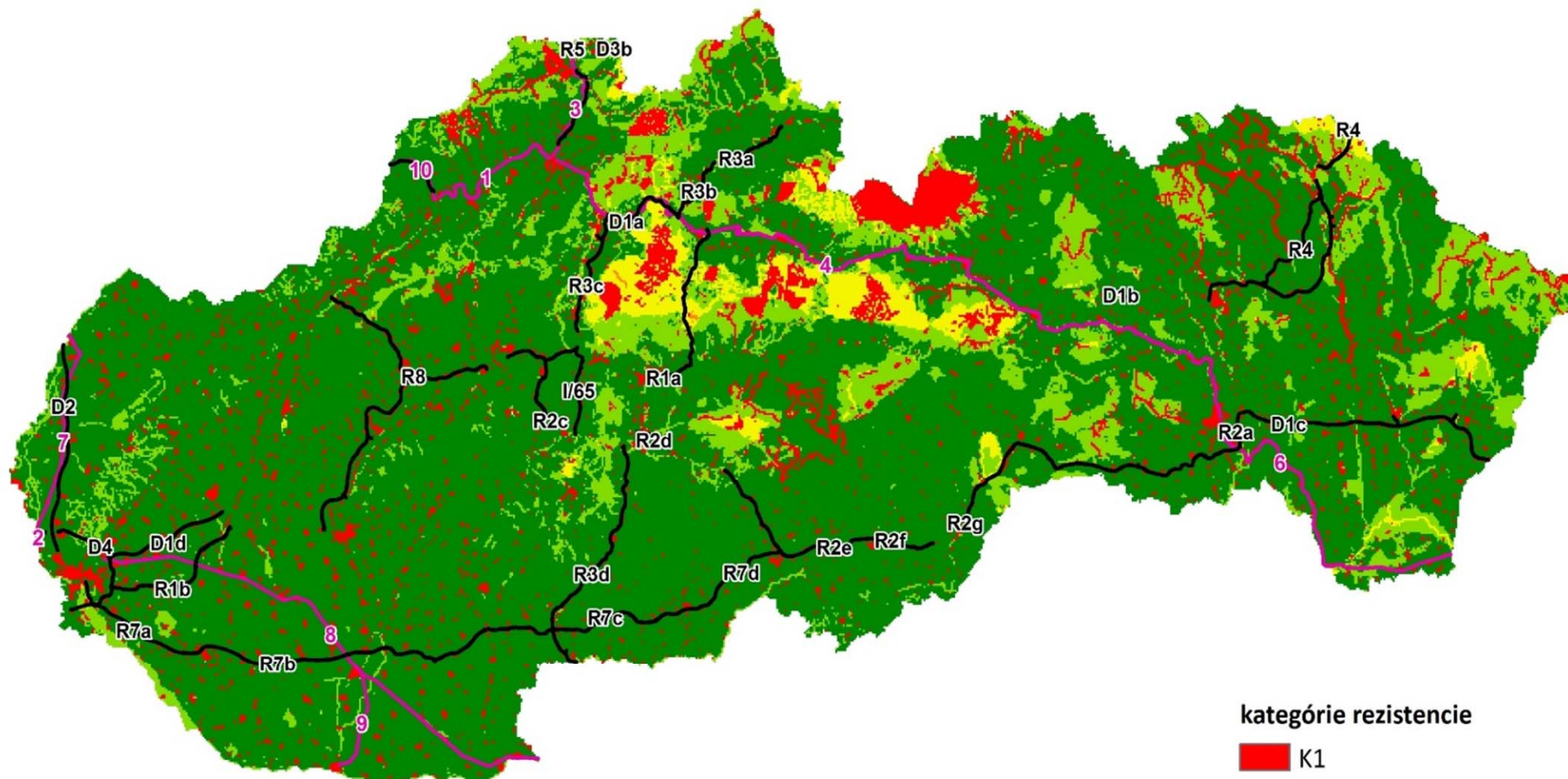
Zdroj dát: SOPSR (2016)
Zostavil: Integra Consulting s.r.o. (2016)

— Hodnotené dopravné koridory

■ Veľkoplošné chránené územia
■ Maloplošné chránené územia

Synthesis of spatial analyses

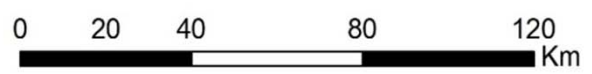
- Identification of critical areas considering environmental and health risks and limitations
- Determination of 'resistance'/' of the territory for transport infrastructure projects
- Based on spatial analyses, the country territory was divided in five categories:
 - K1: extremely sensitive, fully 'resistant' for transport infrastructure
 - K2: highly sensitive, can be used only in exceptional cases with implementation of extensive mitigation measures
 - K3: sensitive, potential conflicts, however these can be avoided through alternative options
 - K4: less sensitive, low 'resistance' to transport infrastructure
 - K5: non-sensitive, free for transport infrastructure development



kategórie rezistencie

- K1
- K2
- K3
- K4
- K5

- cestné koridory
- železničné koridory



SEA outputs

- Strategic level
 - Determination of the air pollution hot-spots, where air quality monitoring network should be reinforced
 - Identification of potential problematic road sections, where alternatives with routing further from inhabited areas should be considered
- Guidance for further development of transport infrastructure projects
 - Identification of risks
 - Recommendations for project level assessment (EIA)
 - Synthesis of spatial analysis provides a basis for prioritisation of transport infrastructure projects

Case example 2: SEA of the Municipal Transport Strategy of Kosice City, Slovakia

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



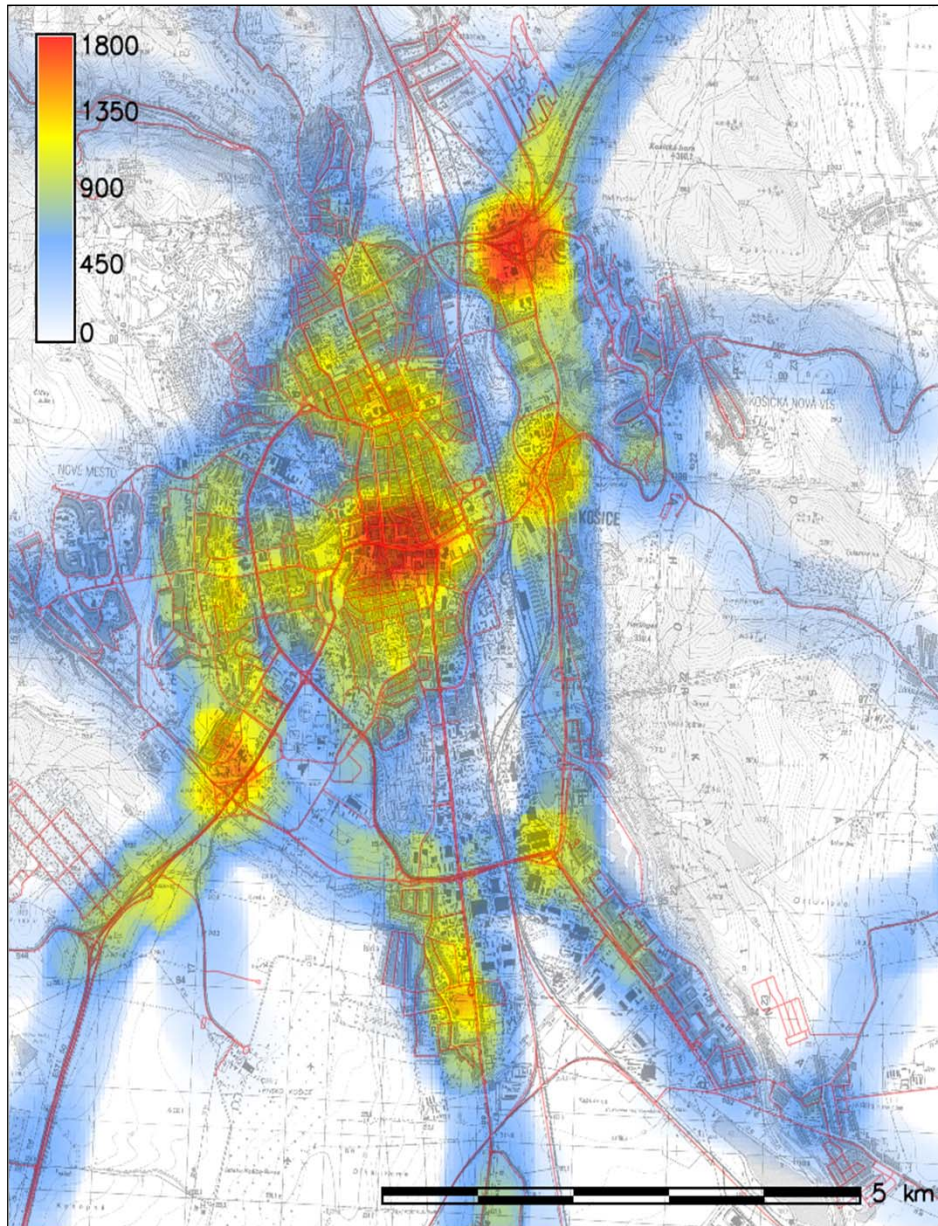
Key issues addressed in SEA

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

Approach to assessment – air quality

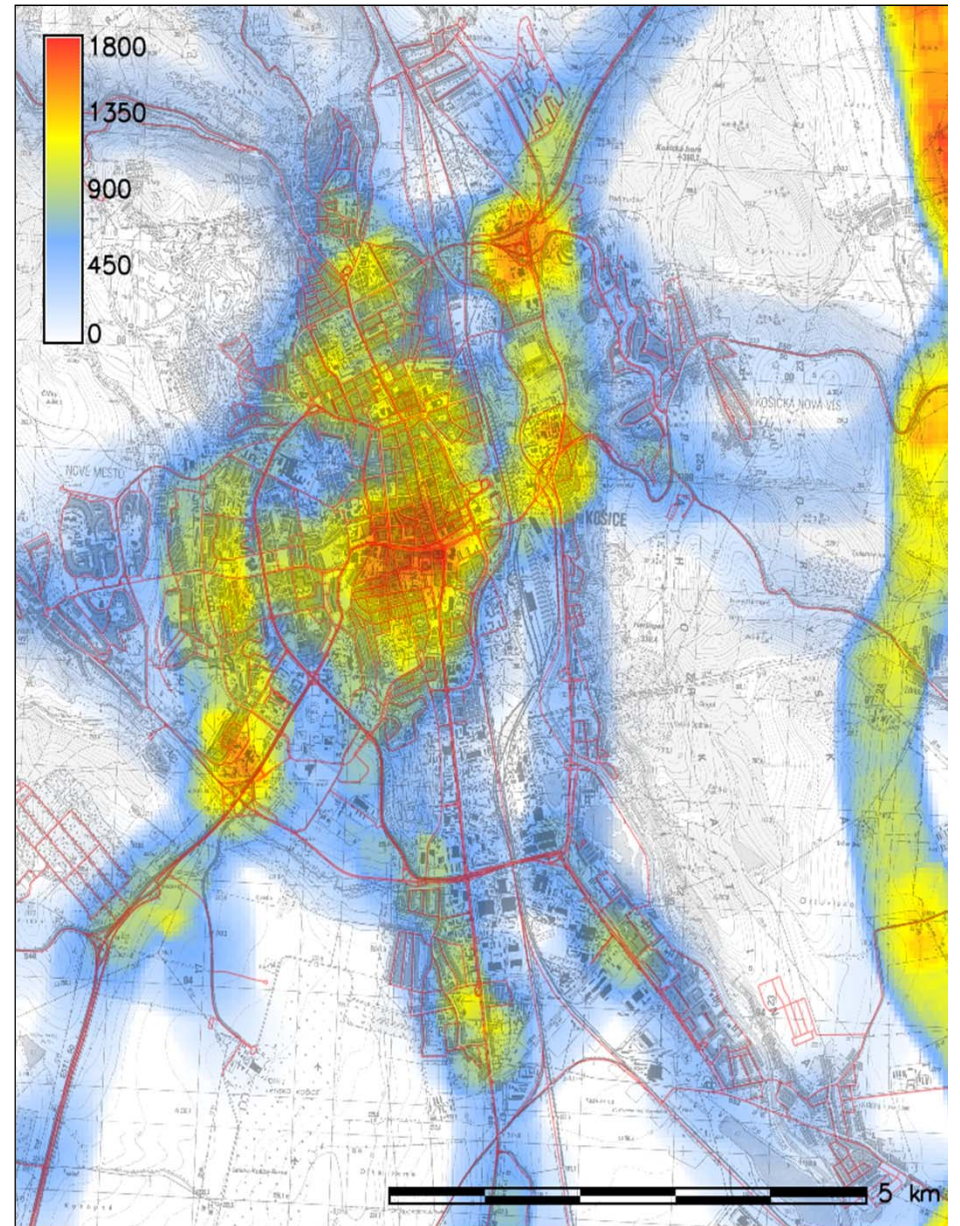
- Transport model available i.e. expected transport intensities in 2030 with and without the Strategy
- Emissions of NO_x, PM₁₀, PM_{2.5}, and PAH from transport were calculated and compared for both scenarios
- Results were displayed in the maps and linked to population density i.e. for how many inhabitants the emissions of air pollutants will change

Emisná hustota $PM_{2.5}$ - nulový variant (kg/rok/ha)

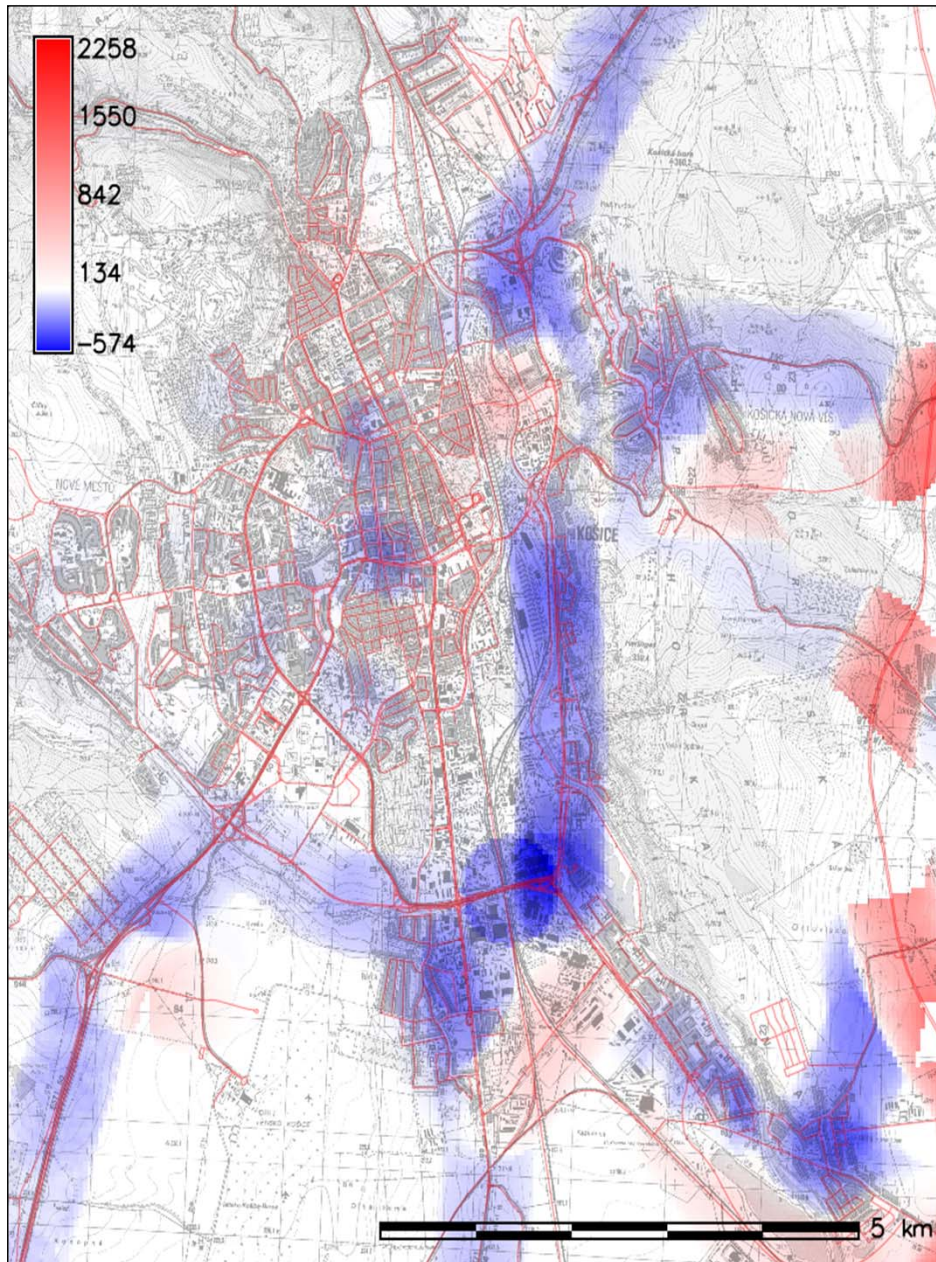


9-10 March 2016

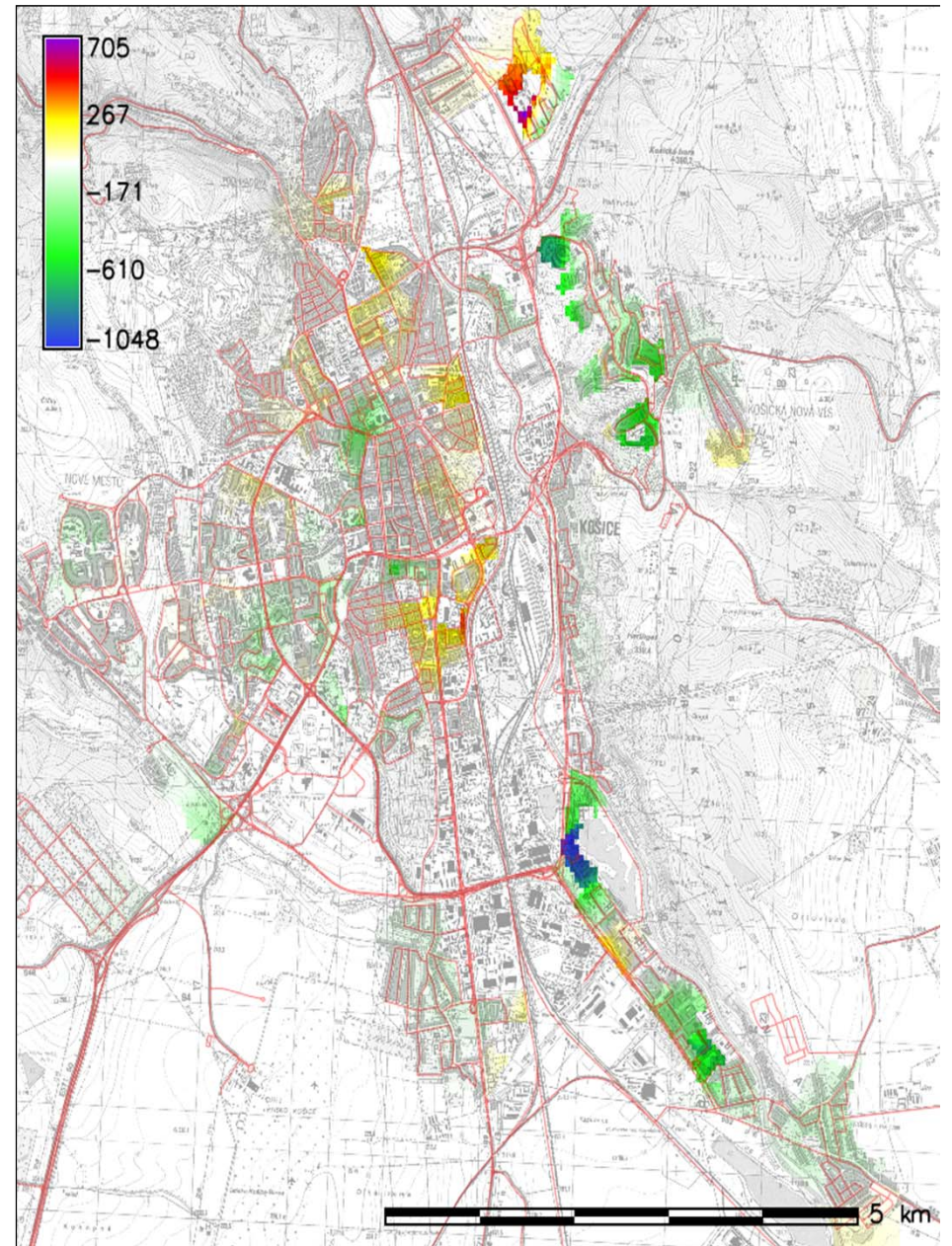
Emisná hustota $PM_{2.5}$ - návrhový variant (kg/rok/ha)



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

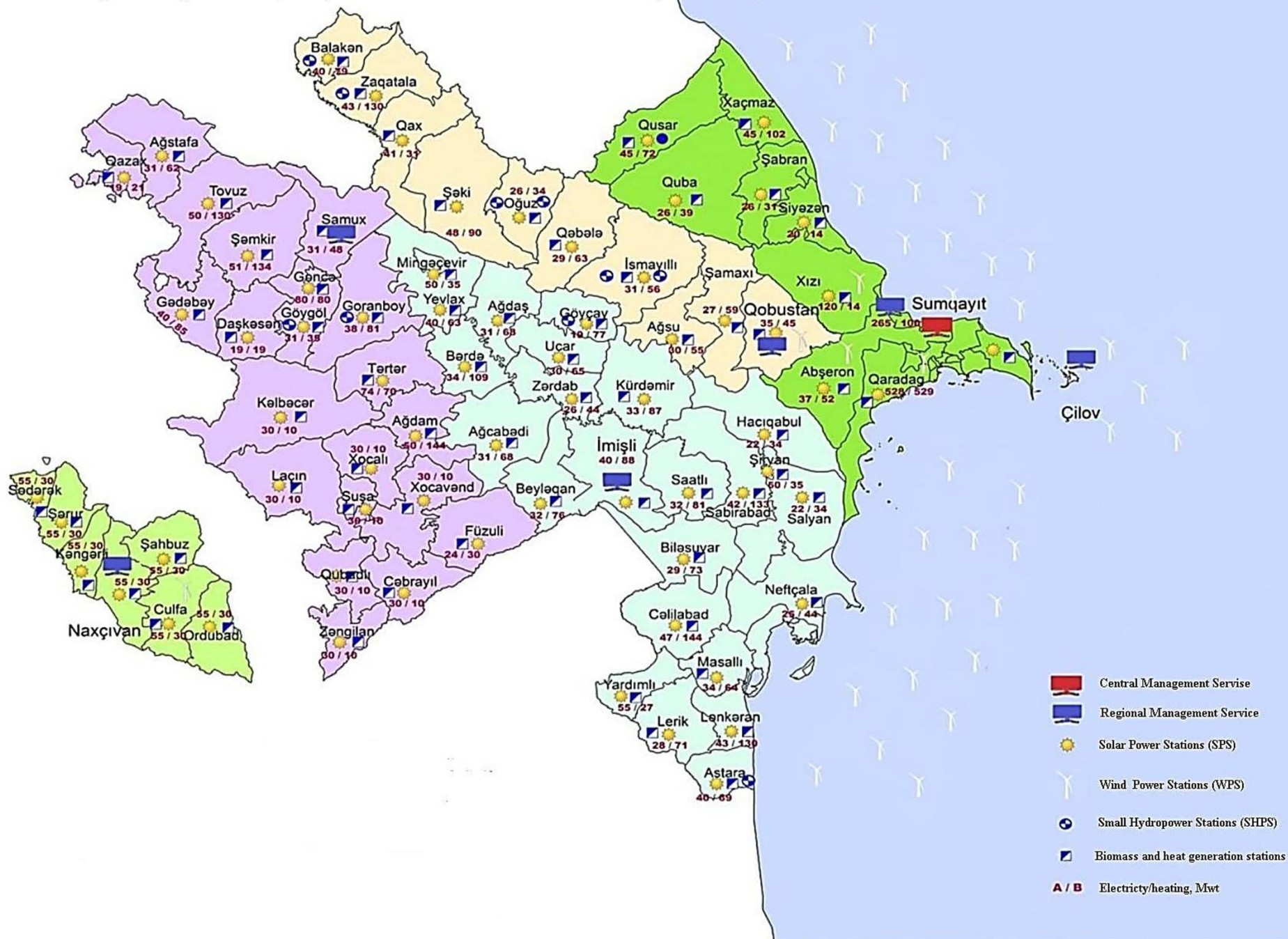
Renewable resources elaborated by the Strategy

- 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



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

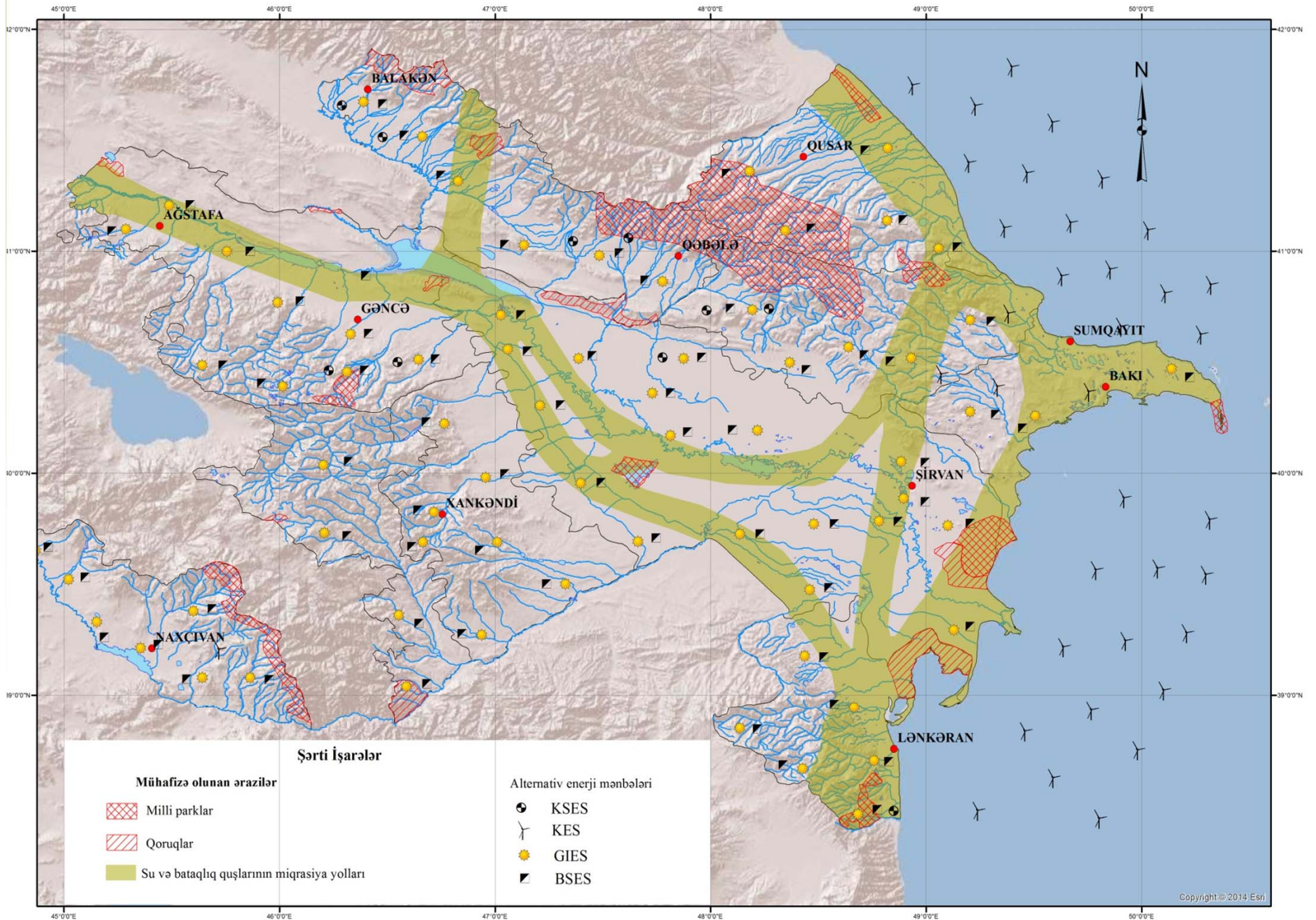
Climate change

- ☺ 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

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




Examples of mitigation measures

Macro-level siting guidance:

- Location of specific renewable energy 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



Questions or comments?

Thank you for your attention