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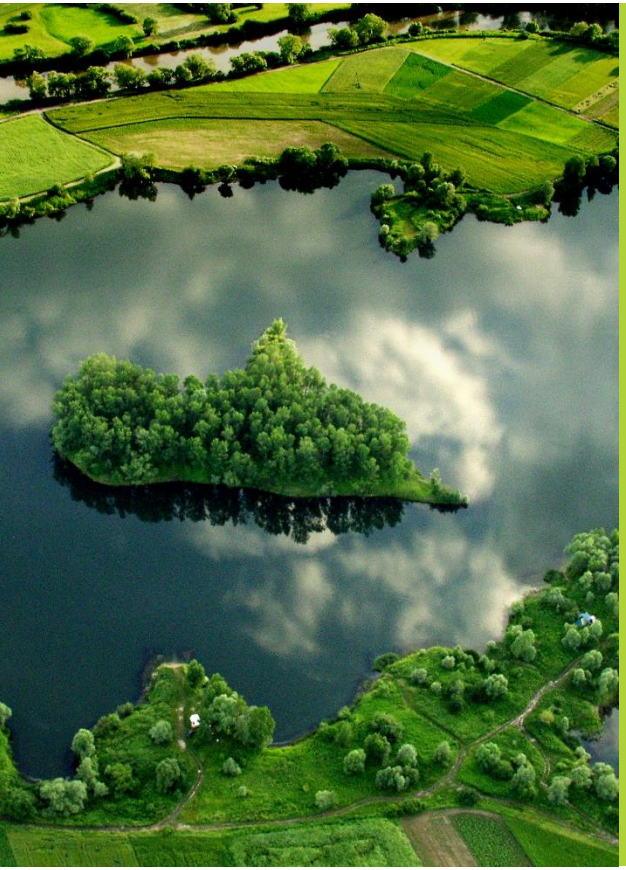

Environmental management of land resources in urban areas

UL2L WORKSHOP IN KRISTIANSTAD

3RD-5TH OF APRIL 2019

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Katowice, Poland

KEY URBAN ENVIRONMENTAL ISSUES

- excessive land consumption,
- urban sprawl,
- soil sealing,
- brownfields,
- increase of urbanized areas not proportionally to population growth

Among negative consequences the **diminishing of soil environmental services capacity resulting in global climate problems** should be indicated.

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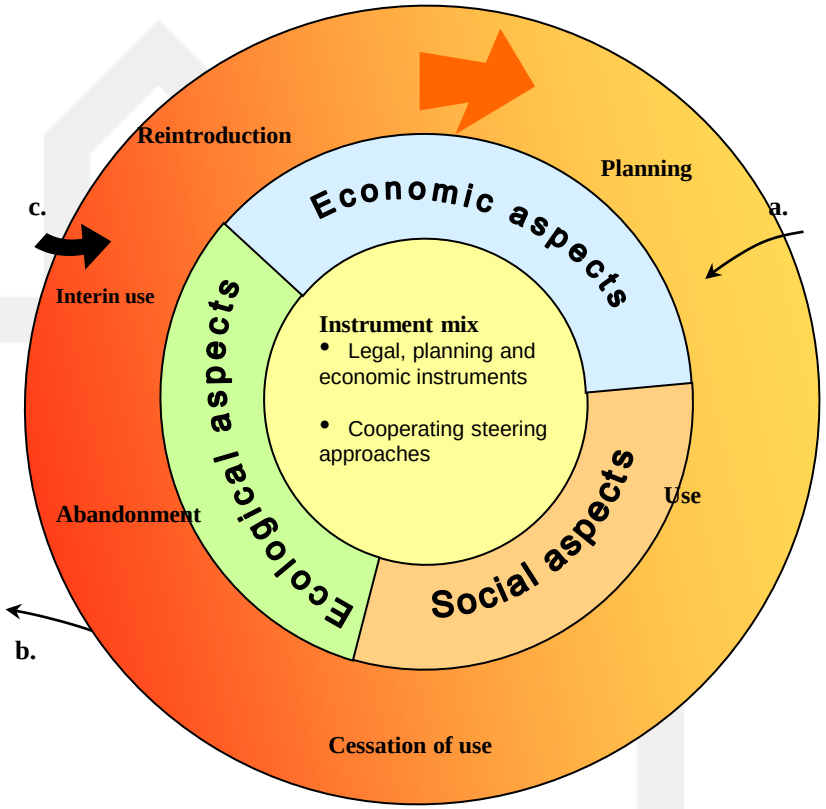
WHAT IS NEEDED

- "EUROPE 2020" Strategy – "A resource efficient Europe" – Land as a resource (Zero land consumption by 2050)
- Need for protection of land resources and reduction of urban sprawl
- Need for management of urban/peri-urban relationships
- Need for strategies and policies focused on environmental management in functional urban areas (functional relationships between urban–rural territories became one of the key elements for sustainable development)
- Sustainable land use and soil resources management is an important component of sustainable development of FUAs

LAND MANAGEMENT METHODS AND TOOLS

- **Circular land use management**
- **Ecosystem services assessment** for supporting decisions in integrated land use management
- **Integrated site compensation** in relation to brownfields and degraded areas
- **Industrial symbiosis** with environmental criteria in business co-operation

Life cycle of land *(source: Research group „Flache im Kreis", 2005)*



Modified land use philosophy can be expressed with the slogan "avoid –recycle – compensate"

Mobilisation of site potential:
- brownfields (trade, industrial or military)
- spaces between buildings in town and city centres
- urban redevelopment sites
- sites undergoing planning

The end and the beginning of each phase are crucial decision points.

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ECOSYSTEM SERVICES

ECOSYSTEM SERVICES are the services provided by the natural environment which benefit people addressing their well-being, satisfying their needs **existential security, social and economic prosperity.**

The ecosystem services reach from providing the products satisfying the basic needs of humans as biological elements - food, clean air, fuel, timber (provisioning ecosystem services) via creating a proper framework for their existence by influencing climate, floods etc. (regulating ecosystem services), safeguarding sustainability of the processes framing the existence of humans - water cycling, soil formation (supporting ecosystem services) up to human needs at the top of Maslow's pyramid - aesthetic and cognitive inputs, health, recreation and tourism (cultural ecosystem services).

The confrontation of the demand represented by the needs and the offer represented by the availability of services and their ability to satisfy the needs represents the value of services.

We need to consider not only mitigation and protection within a broader approach, but the fact that the people in their daily lives depend on a range of services that ecosystems provide and our role is not only to protect but to **develop** them in parallel. These services are fundamental to attaining quality of life of the citizens as main integrative development goal.

WHAT ARE ECOSYSTEM SERVICES?

PROVISIONING SERVICES

Products obtained from ecosystems

- Energy
- Seafood
- Biomedial
- Transportation
- National defense

REGULATING SERVICES

Benefits obtained from the regulation of ecosystem processes

- Flood prevention
- Climate regulation
- Erosion control
- Control of pests and pathogens

CULTURAL SERVICES

Nonmaterial benefits obtained from ecosystems

- Educational
- Recreational
- Heritage
- Spiritual

SUPPORTING SERVICES

Services necessary for the production of all other ecosystem services

- Biological diversity maintenance
- Nutrient recycling
- Primary productivity

source: *Final Recommendations of the Interagency Ocean Policy Taskforce, 2010*

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COMPENSATION

The urban reuse of brownfields supports the goal of minimizing the consumption of greenfields. Construction activities (commercial, residential) as well as compensation measures should both be directed towards brownfield sites. Also climate change adaptation should be taken into consideration as an important benefit of the reuse of inner city brownfields.

Since construction and infrastructure measures are often connected with large scale sealing which also very often take place on agriculturally suitable land, the related compensation measures to these large projects should be steered away from these valuable soils and instead towards the existing brownfields.

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INDUSTRIAL SYMBIOSIS

The basic concept of industrial symbiosis (IS) is based on a common agreement of various stakeholders motivated to exchange (waste) resources for economic reasons. IS defines the integration of traditionally separate industries into a common approach involving the physical exchange of materials, energy, water, and/or byproducts to achieve a competitive advantage. The paradigmatic example of IS is the link between companies that have spontaneously begun to develop in Kalundborg, Denmark since 1961.

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INTERREG PROJECTS CIRCUSE &LUMAT

CIRCUSE: Circular flow land use management (2010 – 2013)

LUMAT: Implementation of Sustainable Land Use in Integrated Environmental Management of Functional Urban Areas (2016-2019)

CIRCUSE PROJECT GOALS

- Integrated approaches to land use
- Broad city/regional cooperation
- Support sustainable forms of land uses
- Activation of the inner development potential of already urbanized land
- Reduction of newly deregulated land for urbanization
- Capping increases in size of built up areas
- Steering of private investments onto already urbanized land
- Coordination of public investments with a perspective of sustainable land use

ACTION PLAN IN CIRCUSE

- Action Plan is a process designed to cohere regional departments, towns, regional institutions and land owners to participate in improving urbanised land use sustainability in the region.
- Action Plan:
- - sets up a common vision, goals, priorities, actions and activities
- - identifies the leaders of the planned activities and allocates responsibilities
- - sets up an implementation program
- - estimates cost of individual actions and activities
- - identifies funding sources for these activities
- - includes pilot action (possible investment)

INVESTMENT IN CIRCUSE

The investment is located in Brzeziny – the district of Piekary Śląskie in Poland. It consisted in redevelopment of a selected post-industrial site of 14 ha. It included establishing green zone separating industrial areas from residential complexes, what will not only create a natural buffer, but also increase recreational value of the area.

The green zone constituted a park area with walking routes, beach volley-ball playing ground, tables for chess playing, and also so-called "energy garden" where in a small site testing plants for biomass production have been planted. The area now is serving for inhabitants from the neighbouring residential area and also for the whole town of Piekary.

LUMAT PROJECT MAIN OBJECTIVE

Strengthening integrated environmental management in functional urban areas (FUAs) with sustainable land use and ecosystem services development

THE APPROACH TO ENVIRONMENTAL LAND MANAGEMENT

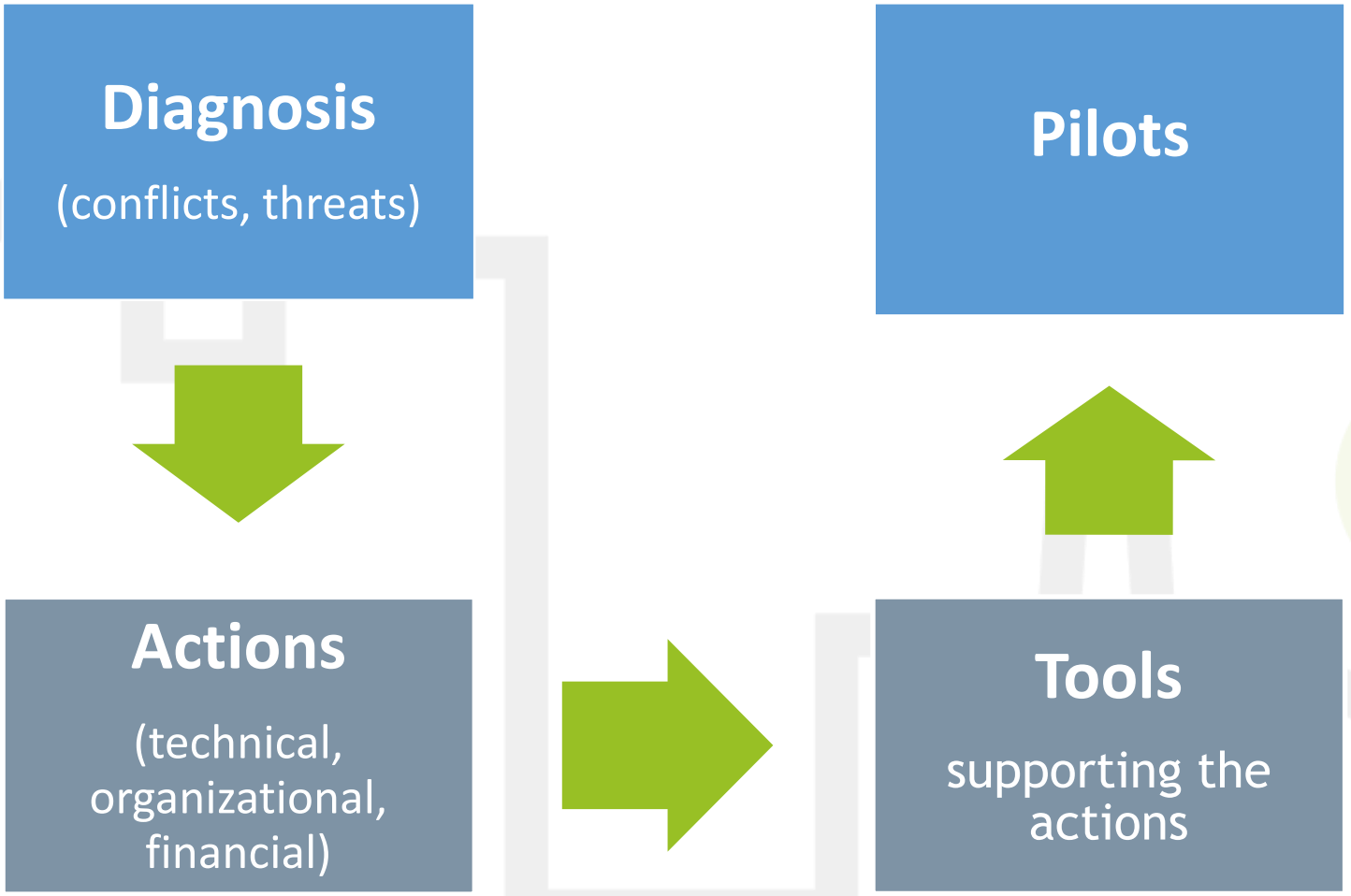
Land and soil are important environmental resources

Land use management and planning should then be responsible for protection of these components

Environmental management tools should support sustainable land management and planning

It should be developed in functional urban areas as a real space used by urban inhabitants

Action plans structure



TECHNICAL ACTIONS

- Program of re-using post-mining sites (Austria),
- Program of brownfields revitalization (Czech Republic),
- Program of integrated site compensation (Germany),
- FUAs' environmental and territorial issues management model as contribution to metropolitan strategic planning and metropolitan general spatial planning (Italy),

- Concept of green and blue infrastructure strengthening and development (Poland),
- Integrated, sustainable management concept of functional city area in the process of spatial planning with an emphasis on integrated management of environmental protection and integrated land use (Slovakia),
- Program of business development on degraded areas as inner city development (Slovenia).

ORGANIZATIONAL ACTIONS

- Public involvement (action plans presentation at public meetings, trainings of professionals, social media, mobile phones applications),
- Management structures (permanent structures for action plans implementation including gaining funds).

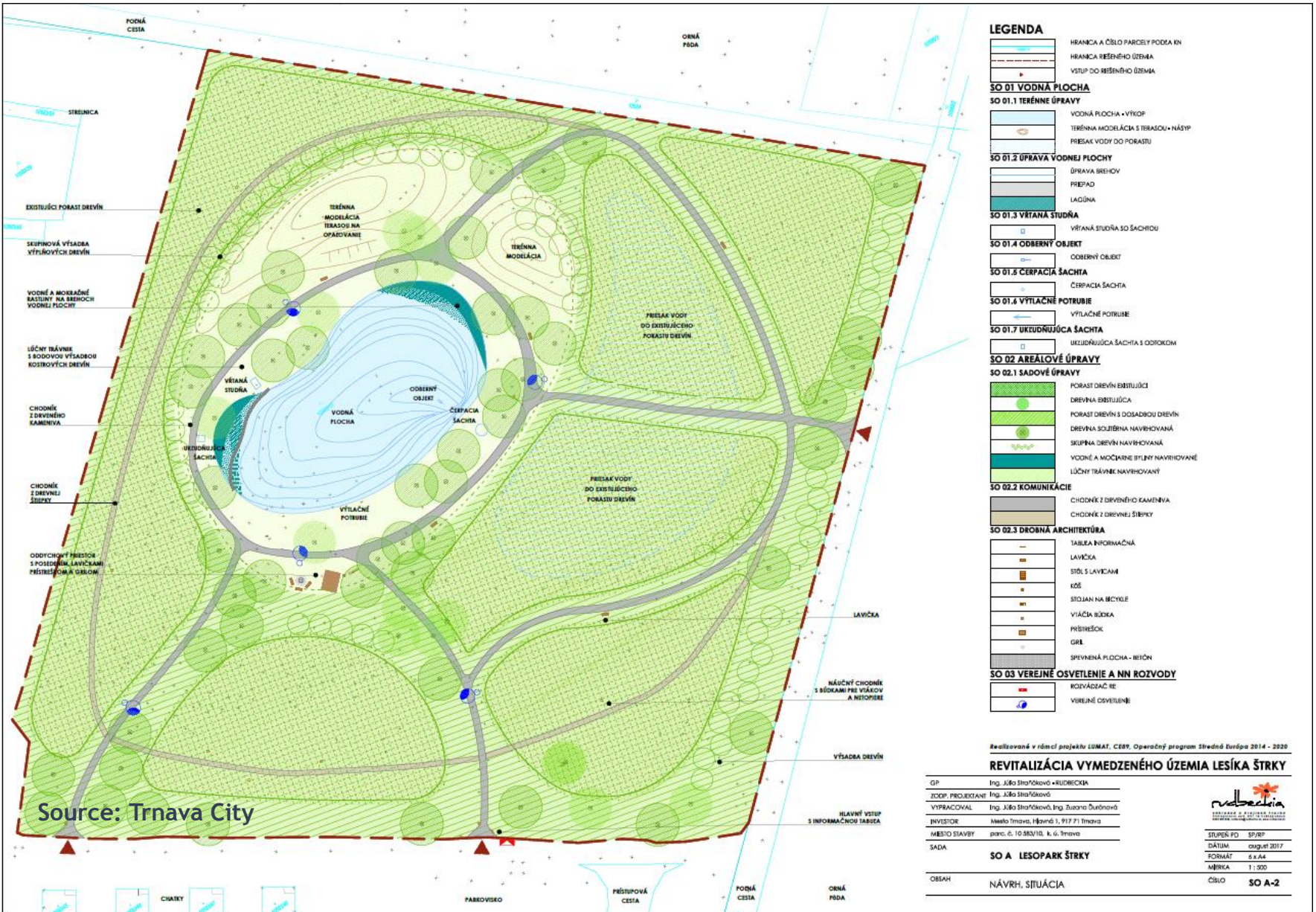
PILOT ACTIONS IN LUMAT

- Torino FUA (IT) - implementation of the intermunicipal management model developed for the Torino FUA
- Baernbach (AT) sustainable cross-community garden show
- Saxony (DE) - pilot action within integrated environmental management in Leipzig Nordraum (creation of green infrastructure with compensating funding),
- **Trnava (SK) - restoration of neglected natural park for sports and recreation zone - investment**
- Ostrava Region (CZ) - „Priority map" of areas for enhancing regional environmental management,
- Slovenia (SI) - business plan for restructuring areas with environmental requirements
- **Ruda Śląska FUA (PL) - site rehabilitation (investment) for the enlargement of green areas - investment**

SLOVAKIA: investment including restoration of neglected natural park considered as a „green brownfield” for sport and recreation zone in location Štrky in Trnava.

Source: Trnava City

Overal SITE PLAN



Source: Trnava City

LEGENDA

HRANICA A ČÍSLO PARCELY PODĽA KN
HRANICA RIEŠENÉHO ÚZEMIA
VSTUP DO RIEŠENÉHO ÚZEMIA

SO 01 VODNÁ PLOCHA

SO 01.1 TERÉNNE ÚPRAVY
- VODNÁ PLOCHA • VÝKOP
- TERÉNNA MODELÁCIA S TERASOU • NÁSYP
- PRIESAK VODY DO PORASTU

SO 01.2 ÚPRAVA VODNEJ PLOCHY
- ÚPRAVA BREHOV
- PRIEPAD
- LAGÚNA

SO 01.3 VŔTANÁ STUDŇA
- VŔTANÁ STUDŇA SO ŠACHTOU

SO 01.4 ODBERNÝ OBJEKT
- ODBERNÝ OBJEKT

SO 01.5 ČERPACIA ŠACHTA
- ČERPACIA ŠACHTA

SO 01.6 VÝTLAČNÉ POTRUBIE
- VÝTLAČNÉ POTRUBIE

SO 01.7 UKLADŇUJÚCA ŠACHTA
- UKLADŇUJÚCA ŠACHTA S ODTOKOM

SO 02 AREÁLOVÉ ÚPRAVY

SO 02.1 SADOVÉ ÚPRAVY
- PORAST DREVÍN EXISTUJÚCI
- DREVINA EXISTUJÚCA
- PORAST DREVÍN S DOSADBOU DREVÍN
- DREVINA SOLITÉRNA NAVRHOVANÁ
- SKUPINA DREVÍN NAVRHOVANÁ
- VODNÉ A MOČIARNE BYLINY NAVRHOVANÉ
- LÚČNY TRÁVNIK NAVRHOVANÝ

SO 02.2 KOMUNIKÁCIE
- CHODNÍK Z DREVENÉHO KAMENIVA
- CHODNÍK Z DREVENEJ ŠTIEPKY

SO 02.3 DROBNÁ ARCHITEKTÚRA
- TABUĽA INFORMAČNÁ
- LAVIČKA
- STÔL S LAVICAMI
- KOŠ
- STOJAN NA BICYKLE
- VIACÍA BÚDKA
- PRÍSTREŠOK
- GRIL
- SPEVNENÁ PLOCHA - BETÓN

SO 03 VEREJNÉ OSVETLENIE A NN ROZVODY
- ROZVÁDZAČ RE
- VEREJNÉ OSVETLENIE

Realizované v rámci projektu LUMAT, CE89, Operačný program Stredná Európa 2014 - 2020

REVITALIZÁCIA VYMEDZENÉHO ÚZEMIA LESÍKA ŠTRKY

GP	Ing. Júlia Straťáková • RUDBECKIA
ZODP. PROJEKTANT	Ing. Júlia Straťáková
VYPRACOVAL	Ing. Júlia Straťáková, Ing. Zuzana Ďurčinová
INVESTOR	Mesto Trnava, Hlavná 1, 917 71 Trnava
MIESTO STAVBY	parc. č. 10.583/10, k. ú. Trnava
SADA	**SO A LESOPARK ŠTRKY**
OBSAH	NÁVRH, SITUÁCIA

STUPEŇ PD	SP/RP
DÁTUM	august 2017
FORMÁT	6 x A4
MIERKA	1 : 500
ČÍSLO	**SO A-2**

Estimated timeline

Cleaning of area: 11/2017 – 03/2018

Building and planting: 03/2018 – 06/2019

Source: Trnava City

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LUMAT

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