EU funding opportunities for BalticFlows consortium

Potential doors to open

- Horizon 2020
  - BONUS
  - Water works
- Baltic Sea Programme (InterReg)

Ulf Westerlund, EU Research officer at Uppsala University
Ulf.westerlund@uadm.uu.se; mobil 070 167 93 73

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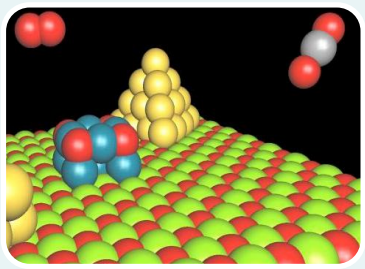
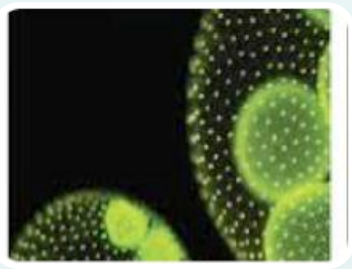
HORIZON 2020

Three main priorities:





Excellent science

Societal challenges

Industrial leadership

Research driven projects

Market driven projects

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HORIZON 2020

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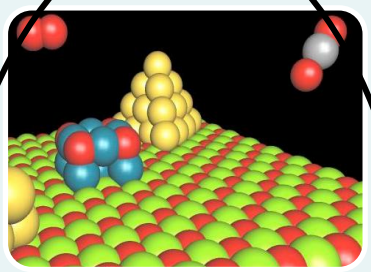
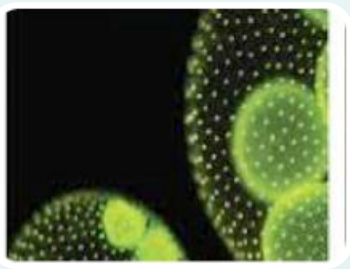




Excellent science

Societal challenges

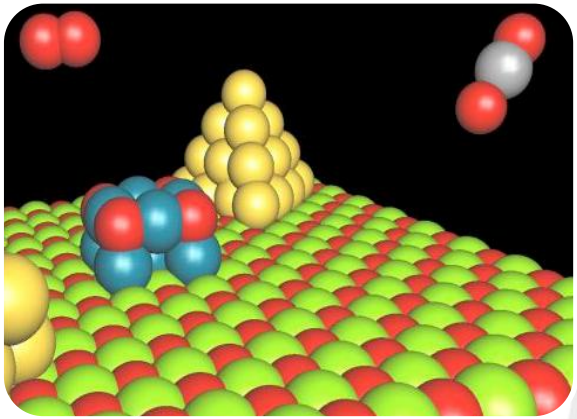
Industrial leadership

Research driven projects

Market driven projects

1. Excellent Science

- European Research Council (ERC)
- **Marie Skłodowska-Curie Actions (MCSA)**
- Research Infrastructures
- Future and Emerging Technologies (FET)



Bottom-up programme !

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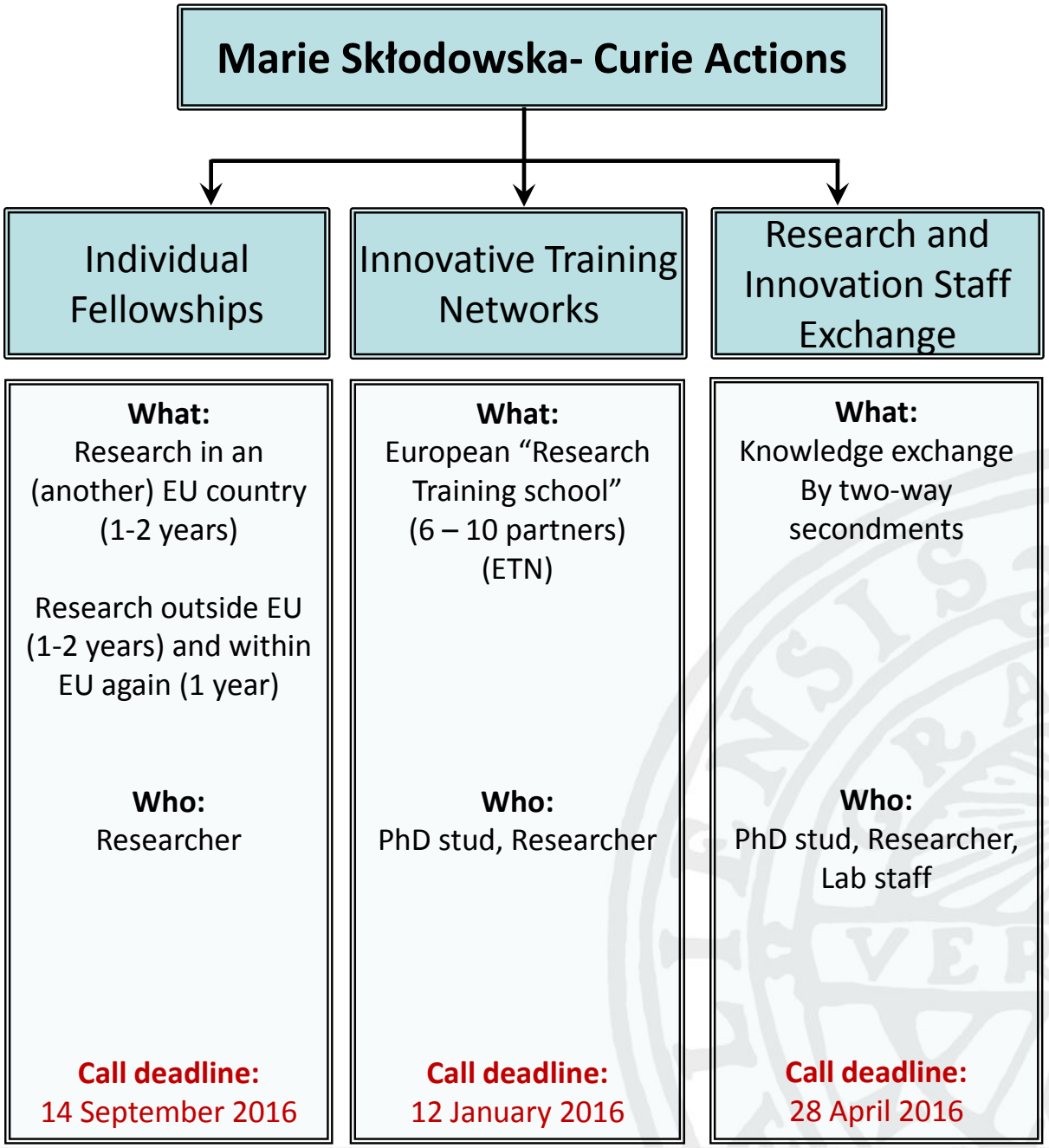
Marie Skłodowska- Curie Actions



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HORIZON 2020

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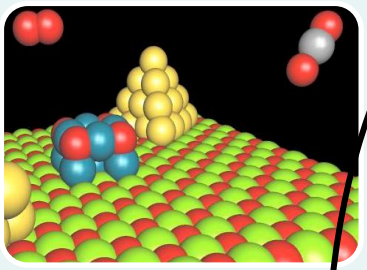

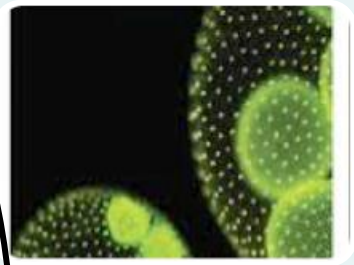

Excellent science

Societal challenges

Industrial leadership

Research driven projects

Market driven projects

New EU ”framework programme” for Research and Innovation for the years 2014-2020

Part of the EU2020 strategy, the Innovation unionen and the ERA:

- **Tackle the economic crisis –** generate growth and new jobs.
- **Meet the societal challenges –** demografic change, food supply, energy resources, climate change
- **Strengthen Europe´s global competitiveness** and position in research, innovation and technology
- **ERA –** enhance mobility and critical mass, counteract fragmentation

2. Societal challenges

Top-down programme !

1. **Health**, demographic change and wellbeing
2. **Food security**, sustainable agriculture and **forestry**, **marine and maritime research**, and **inland water** research
3. Secure, clean and efficient **energy**
4. Smart, green and integrated **transport**
5. **Climate** action, **environment**, **resource efficiency** and **raw materials**
6. Inclusive, innovative and **reflective societies**
7. **Secure societies**

2. Societal challenges

Top-down programme !

1. **Health**, demographic change and wellbeing
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7. **Secure societies**

Climate action, **environment**, **resource efficiency** and **raw materials**

Topic SC5-08-2017:

Large-scale demonstrators on nature-based solutions for hydro-meteorological risk reduction

https://ec.europa.eu/research/participants/portal/desktop/en/opportunities/h2020/topics/2188-sc5-08-2017.html

Opens up in november the 8th 2016

Funding and Rules

100% financing of direct costs
25% covering of indirect costs (OH)

- At least 3 organisations from at least 3 Member countries (except in ERC, MSCA, SME)
- Evaluation

  Science – Impact - Implementation

Where to find the calls in H2020?

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070 -167 9375

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Eva Pålsgård

Eva.Palsgard@uadm.uu.se

018 - 471 3055
070 - 425 0815

H2020 Participant Portal

https://ec.europa.eu/research/participants/portal4/desktop/en/opportunities/index.html

Prereg. 9/2-16
Deadline 10/3-16

Theme 2.4: Eco-technological approaches to achieve good ecological status in the Baltic Sea

Foci on (i) improvement of retention and recirculation of nutrients and other chemical substances,

(ii) new methods for improved wastewater treatment efficiency for xenobiotics and persistent micro- and nanoparticles,

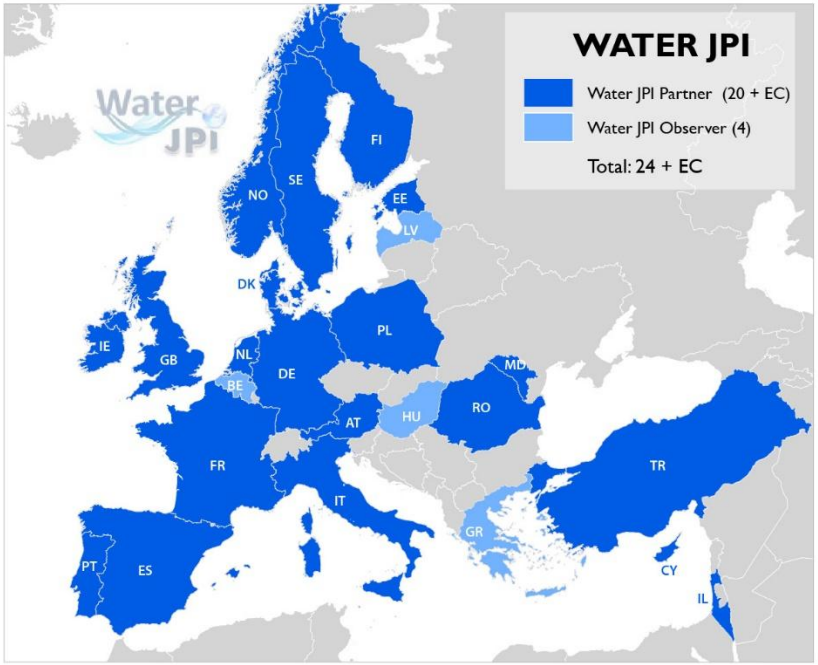
(iii) new methods for recovery of substances from waste and sediments,

(iv) new methods for retention and reduction of air pollution from energy production and transportation, (v) new testing methods for sewage, leachate from landfills, wastewater and storm water and (vi) new methods for restoration of marine and coastal habitats.

Projects will be selected for funding only on a condition that at least 25% of the requested BONUS funding goes to enterprises

http://www.bonusportal.org/programme/competitive_calls/bonus_call_2015_blue_baltic

Water works (part of Water JPI) funds five core themes:



- Maintaining ecosystem sustainability;
- Developing safe water systems for the citizens;
- Promoting competiviness in the water industry;
- Implementing a water-wise bio-based economy;
- Closing the water cycle gap.

http://www.waterjpi.eu/

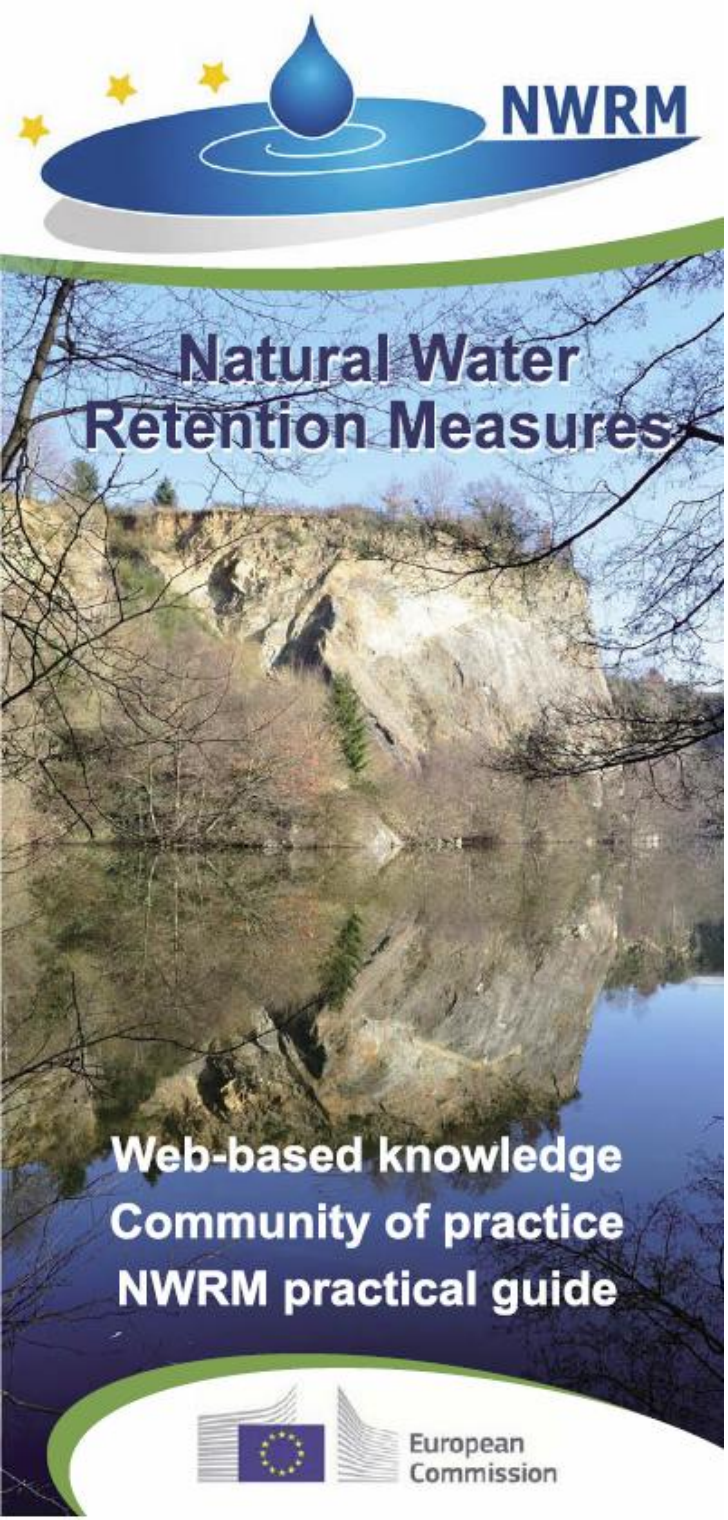
Water works continued

The third Call for proposals of the Water JPI will be published in the first quarter of 2016 on a topic related to **“Improving water use efficiency and reducing soil and water pollution for a sustainable agriculture”**. (to be confirmed)

Baltic Sea Programme (InterReg)

Sub-themes

- Natural and technological risks, climate change
- improving the monitoring of environmental risks
- supporting awareness-raising and emergency planning for populations located in very sensitive areas, such as heavily built-up basins, seismic areas, flooding prone areas, etc.
- facing air pollution, managing and communicating on associated risks
- development of strategies for minimising relevant natural and technological risks
- developing the formulation of tools, action plans and awareness-raising and capacity-building for responding at the different levels on all relevant natural and technological risks
- developing appropriate coordinated spatial planning measures in geographically sensitive areas
- developing measures to face and raise awareness on climate change and promotion of adaptation and mitigation policies
- developing strategies for preventing and reducing floods



Pilot Project - Atmospheric Precipitation - Protection and efficient use of Fresh Water: Integration of Natural Water Retention Measures in River basin management

Service contract n°ENV.D.1/SER/2013/0010

What characterizes NWRM and how do these relate to Flood Risk Management Plans (FRMP) and River Basin Management Plans (RBMP)?

Dennis Collentine and Martyn Futter
Swedish University of Agricultural Sciences
NWRM pilot project members

Office International de l'Eau

ACTeon environment

NWRM pilot project

- Service contract funded by DG ENV
- 11 partners, 8 countries (FR, UK, HU, GR, CY, SE, ES, LV)
- From September 2013 to October 2015

Office International de l'Eau

ACTeon environment research & consultancy

amec

SRUC

REGIONAL ENVIRONMENTAL CENTER

I.A.CO Ltd Environmental & Water Consultants

enveco Environmental Economics Consultancy

REKK

institute iMdea water

SLU

Baltic Environmental Forum BEF LATVIA

n.amorsi@oieau.Fr

Some Basics: What are NWRMs?

- Water retention?
  - Longer residence time somewhere in the water cycle
    - on land?
    - in surface water?
    - in groundwater
- Natural?
  - NWRMs use natural processes
  - Functions commonly performed by nature
    - slowing down water flows
    - allowing soil infiltration
    - supporting aquifer recharging

NWRM include Green Infrastructure

- An alternative to grey infrastructure
  - Embankments, dykes and dams
- Restoration of riparian areas, wetlands and flood plains
- Urban and Rural Sustainable Drainage Systems (SuDS)
  - to retain water, support biodiversity and soil fertility and prevent floods and droughts
- "Towards Better Environmental Options for Flood Risk Management" (DG Environment, 2011)
  - Introduces a number of tested techniques for natural approaches which might be concretely applied on a local scale to reduce floods
  - Presents a number of projects which have restored flood plain ecosystems and at the same time contributed to flood prevention

Most of the measures are not new*

Agriculture;

Meadows and pastures, Buffer strips and hedges, Crop rotation, Strip cropping along contours, Inter-cropping, No-till agriculture, Low-till agriculture, Green cover, Early sowing, Traditional terracing, Controlled traffic farming, Reduced stocking density, Mulching.

Hydro-morphology;

Basins and ponds, Wetlands, Floodplain management, Re-meandering, Streambed re-naturalization, Restoration and reconnection of seasonal streams, Reconnection of oxbow lakes and similar features, Riverbed material re-naturalization, Removal of dams and other longitudinal barriers, Natural bank stabilization, Elimination of riverbed protection, Lake restoration, Restoration of natural infiltration to groundwater, Polders.

* NWRM pilot project measures

Most of the measures are not new*

Urban;

Green roofs, Rainwater harvesting, Permeable surfaces, Swales, Channels and rills, Filter strips, Soakaways, Infiltration trenches, Rain gardens, Infiltration basins, Retention ponds, Managed aquifer recharge.

Forestry;

Riparian buffers, Maintenance of forest cover in headwater areas, Afforestation of reservoir catchments, Targeted planting for ”catching” percipitation, Land use conversion, Continuous cover forestry, Water sensitive driving, Appropriate design of roads and stream crossings, Sediment capture ponds, Coarse woody debris, Urban forest parks, Trees in urban areas, Overland flow areas in peatland forests, Peak flow control structures in managed forests.

* NWRM Pilot project measures

Why the interest from DG Environment?

- **Focus on the multiple benefits of retention**
  - On-site benefits: nutrient reduction, drought reduction, increased bio-diversity, recreation…
  - Downstream benefits: flood risk reduction, nutrient reduction…
  - Upstream benefits: potential trade-offs

What do NWRM offer?

- **Floods Directive and WFD:**
  - Opportunity for measures which reduce flooding and are compatible with the WFD
  - Opportunity for measures in RBMP (PoM) which are compatible with the Floods Directive
- **Good news for FRMP:**
  - NWRM will reduce the source of some flooding
  - Low cost measures (urban gains and rural gains)
  - Potentially positive cost-benefit ratios
  - Financing possible through CAP and European Structural and Investment Funds (ESIF)
- **Bad news:**
  - Little effect on extreme floods

For more information on NWRM: <nwrm.eu>

- Implementing NWRM
  - Practical guide
  - Communication material
  - Synthesis documents
- Catalogue of NWRM
- Case studies
- Glossary

- New European network
  - **FLOODLAND – Land for Flood Retention and Resilience:** An interdisciplinary and international research initiative

Challenges and solutions in rain water management in Latvia

Daina Ieviņa
Latvija, Jelgava

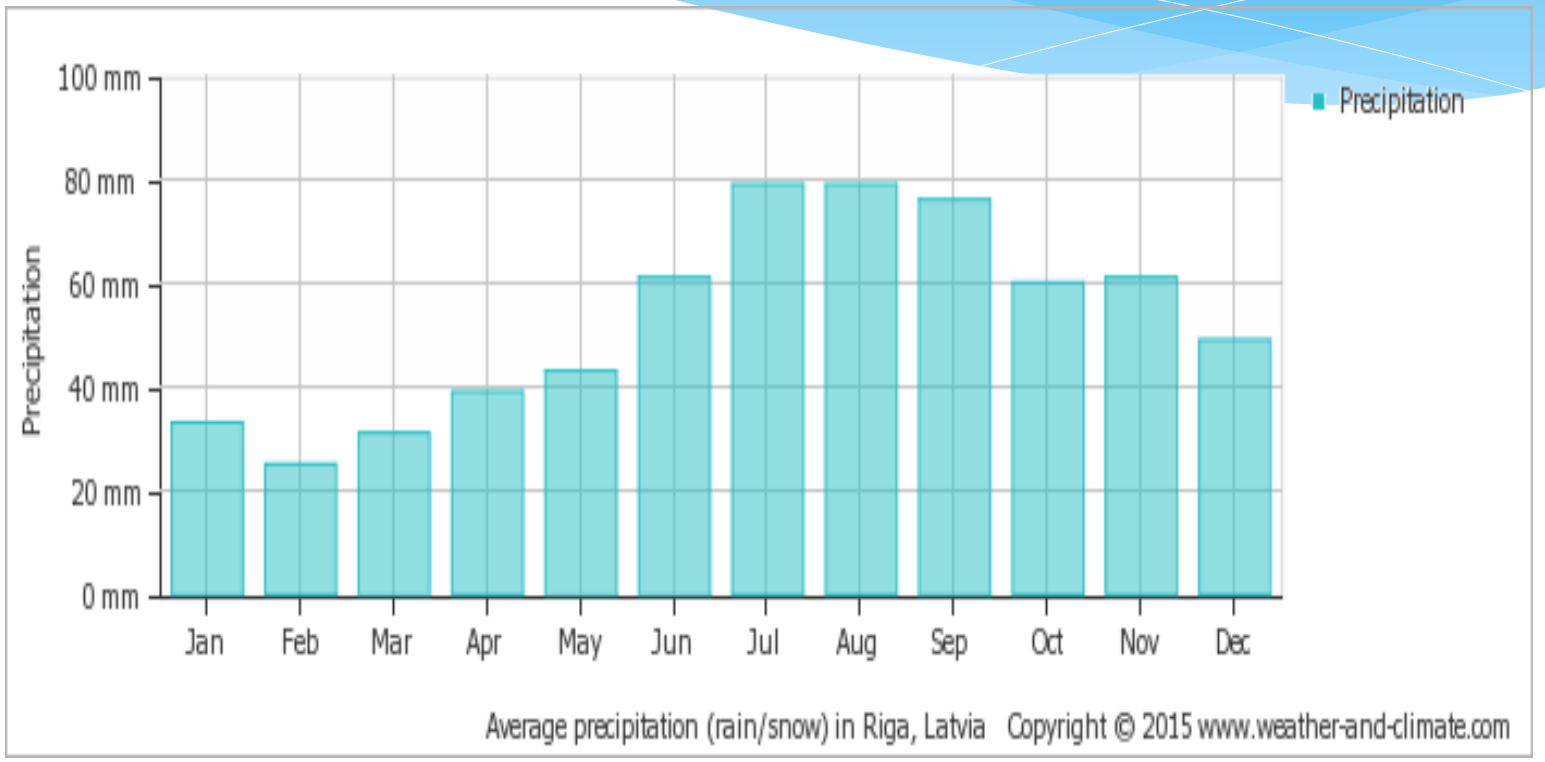
Climate of Latvia

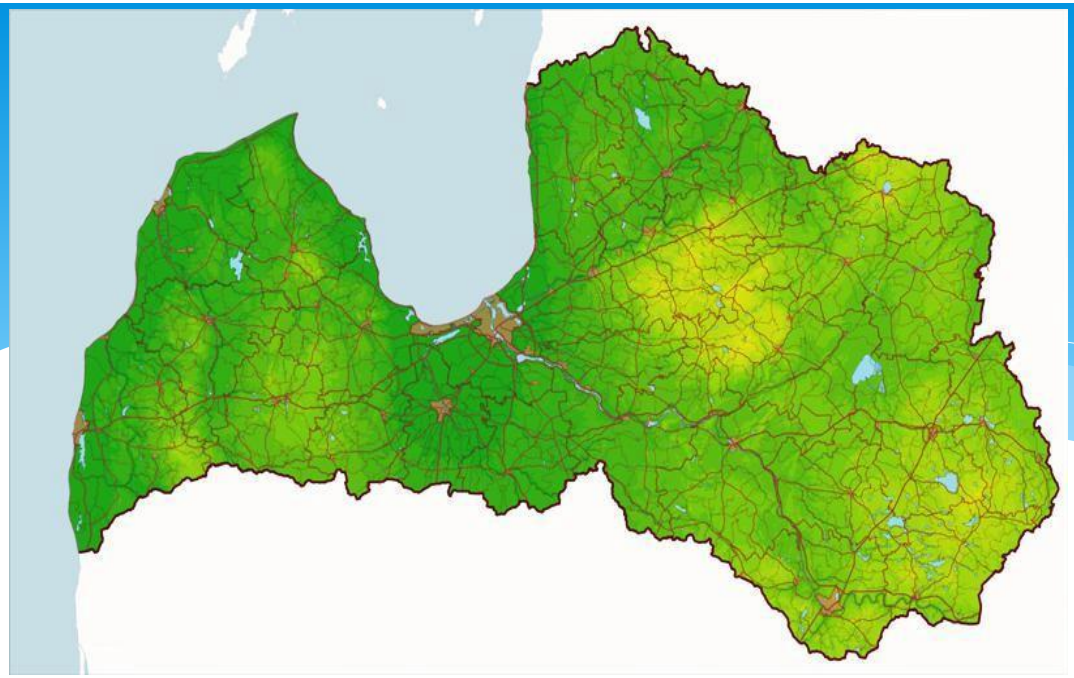
* The average annual air temperature in Latvia is +5.9°C. The year's warmest month is July, its average temperature +21.5°C. The coldest months are January, February, when the average temperatures are -4.6 and -7.9°C.
* So far, the highest observed temperature in Latvia is +36.4°C, the lowest: -43.2°C.

Climate of Latvia

* The average annual precipitation in Latvia is 667 mm. The months with most precipitation are July and August, in each of which average rainfall is 78 mm. The least precipitation is in February and March – each of which has on average 33 mm. Annual average relative humidity is 81%.
* The climate in Latvia is humid and mild. The weather of some 200 days a year is created by cyclones.

Climate of Latvia



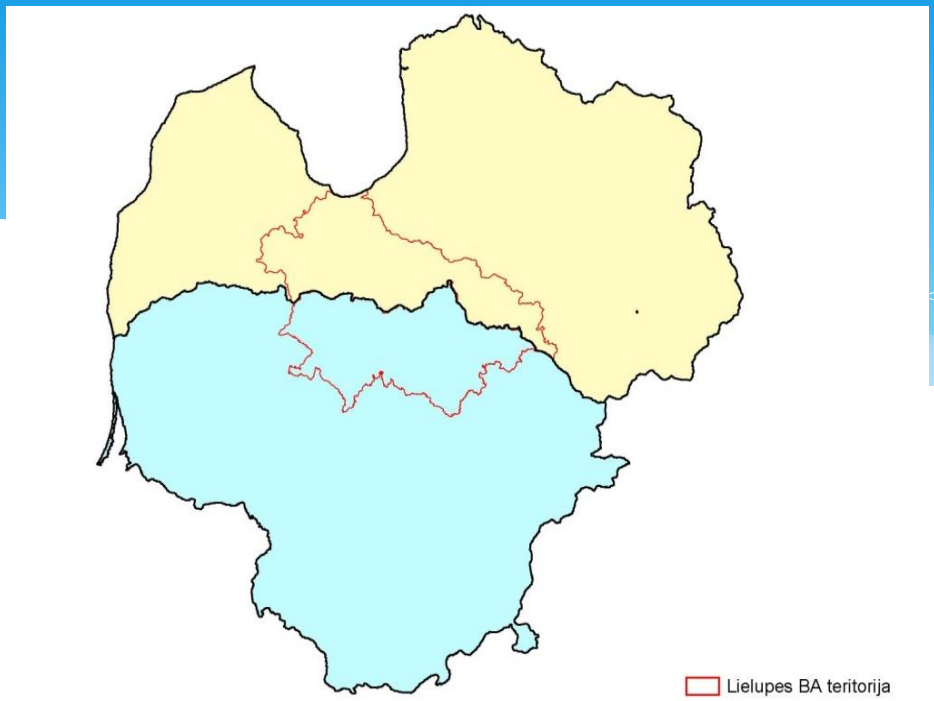


There are more than 3000 lakes and 12 000 rivers. The major rivers are the Daugava, Gauja, Venta and Lielupe.

Groundwater levels:

The average groundwater depth, m	Location
0-0.80	Zemgale
territory is less than 5 m above sea level	
5.00-10.00	Vidzeme
Latvia's highest point is Gaiziņš, 311.6 m	

* About 10% of Latvian territory consists of swamps. land in Latvia is often too wet and in need of drainage not irrigation; approximately 16,000 km2 or 85% of agricultural land has been approved by drainage (2007)



Latvian - Lithuanian cross-border program for 2007 - 2013 years, a project co-No. LLIV-339 "Sustainable rainwater drainage management Lielupe basin environmental quality improving" introduction (in short: Rain - Water - Man).

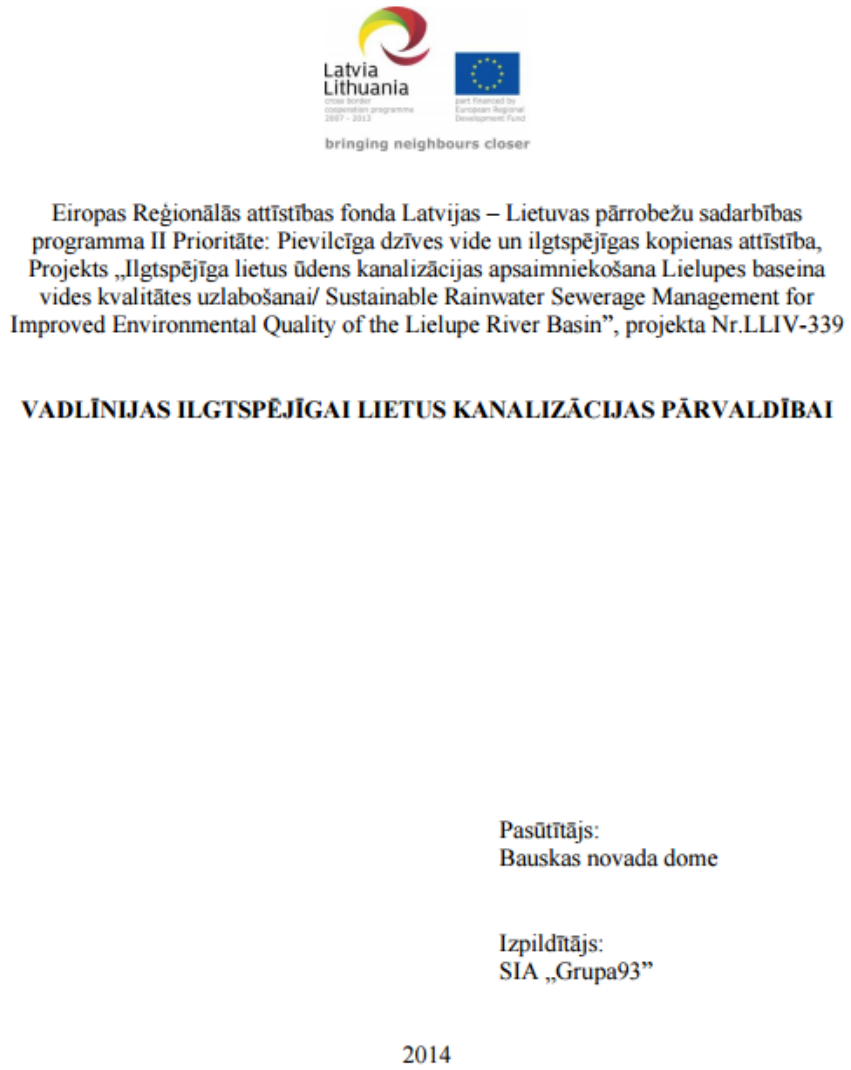
The project tasks:

* to improve the state of the environment by reducing water pollution Lielupe basin,
* reduce the risk of flooding in populated areas, improving rainwater drainage system management in both the Latvian and Lithuanian municipalities.
* Rain drainage system reconstruction and improvement of the knowledge on innovative and efficient technical solutions
* Fulfill the EU Directive 91/271 / EEC on urban waste water treatment requirements laid down to prevent spills and reduce pollution to receiving, which can cause rain water.

Problems

* pollution and fill ditches
* dirty wastewater
* Old, damaged rain sewerage
* Lots of impervious coverage


Drogas


Latvia Lithuania

bringing neighbours closer

Eiropas Reģionālās attīstības fonda Latvijas – Lietuvas pārrobežu sadarbības programma II Prioritāte: Pievilcīga dzīves vide un ilgtspējīgas kopienas attīstība, Projekts „Ilgtspējīga lietus ūdens kanalizācijas apsaimniekošana Lielupes baseina vides kvalitātes uzlabošanai/ Sustainable Rainwater Sewerage Management for Improved Environmental Quality of the Lielupe River Basin", projekta Nr.LLIV-339

VADLĪNIJAS ILGTSPĒJĪGAI LIETUS KANALIZĀCIJAS PĀRVALDĪBAI

Pasūtītājs:
Bauskas novada dome

Izpildītājs:
SIA „Grupa93"

2014

The guidelines for sustainable rainwater management are prepared within the project "Sustainable Rainwater Sewerage Management for Improved Environmental Quality of the Lielupe River Basin" (project acronym RAIN-WATER-MAN, project number LLIV-339), cofinanced by the Latvia-Lithuania Cross Border Cooperation Programme under European Territorial Cooperation Objective 2007-2013.

Solutions

accumulating tanks 628 m3 and rainwater treatment Devices 250 l/s in the Jelgava

Solutions

accumulating river
and rain garden
in the Rujiena

Process

dry rivers and the rain garden construction process

Solutions

Cascades of ditches in the Riga

Solutions

Ditches in the Ventspils

Solutions

Rain water ponds in the garden

Solutions

Rain water ponds
And rain gardens
In the Kuldiga and Talsi

Ditches in the park of Kandava

Madona central places

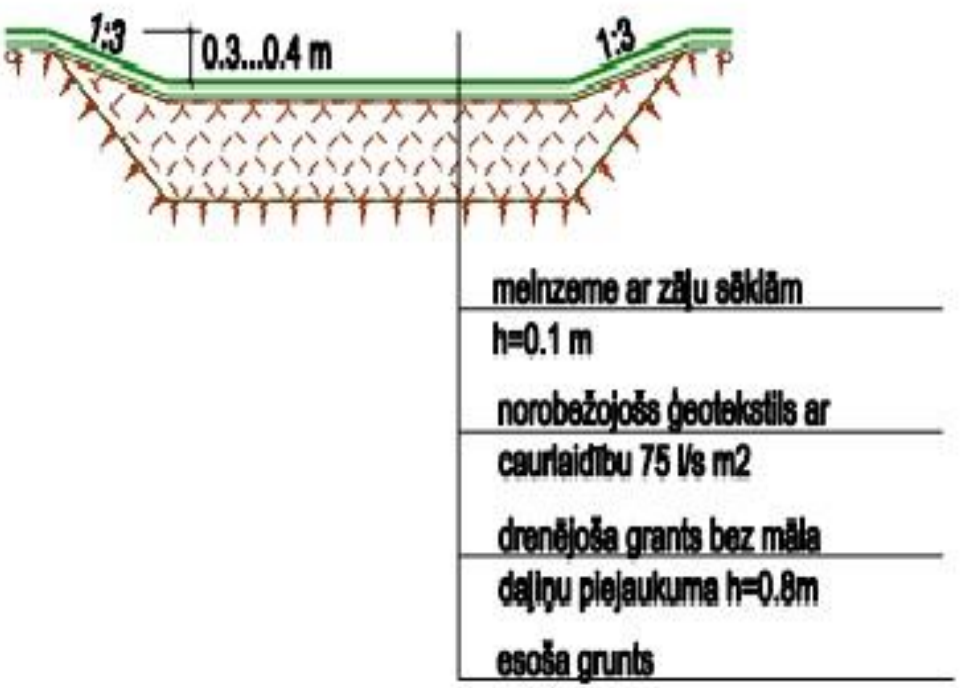
Pond and rain gardens in the Park of Kuldiga

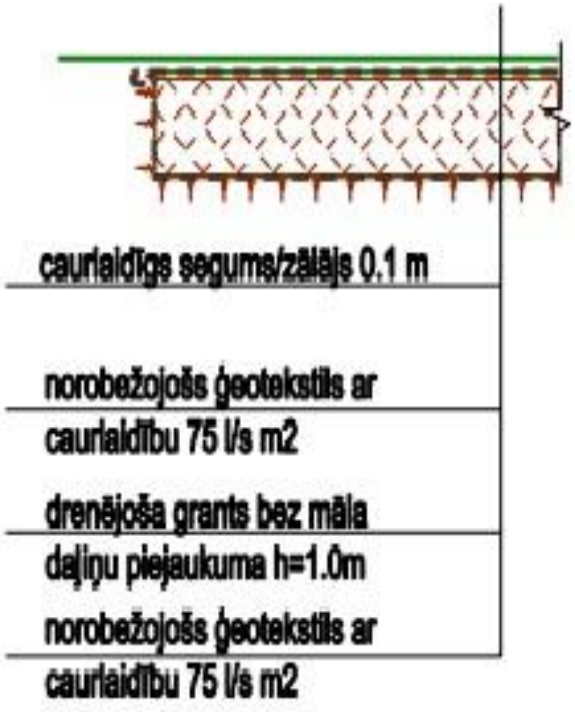
Solutions

ditch filled with stones
in the Ozolnieki

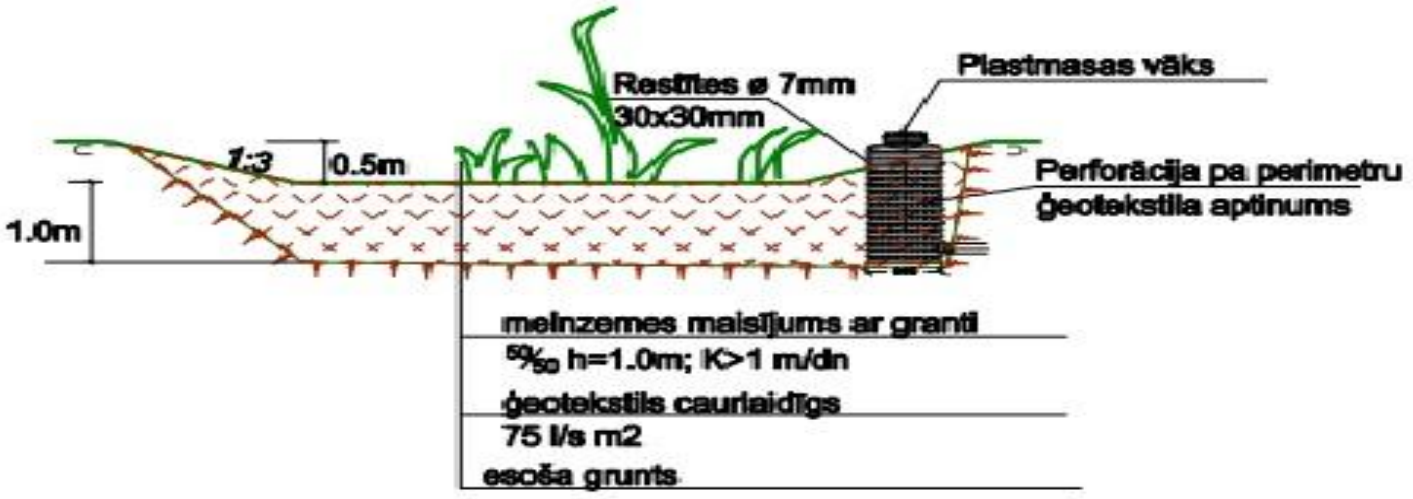
Infiltration wells
in the Svete

Retention and infiltration ponds and infiltration fields

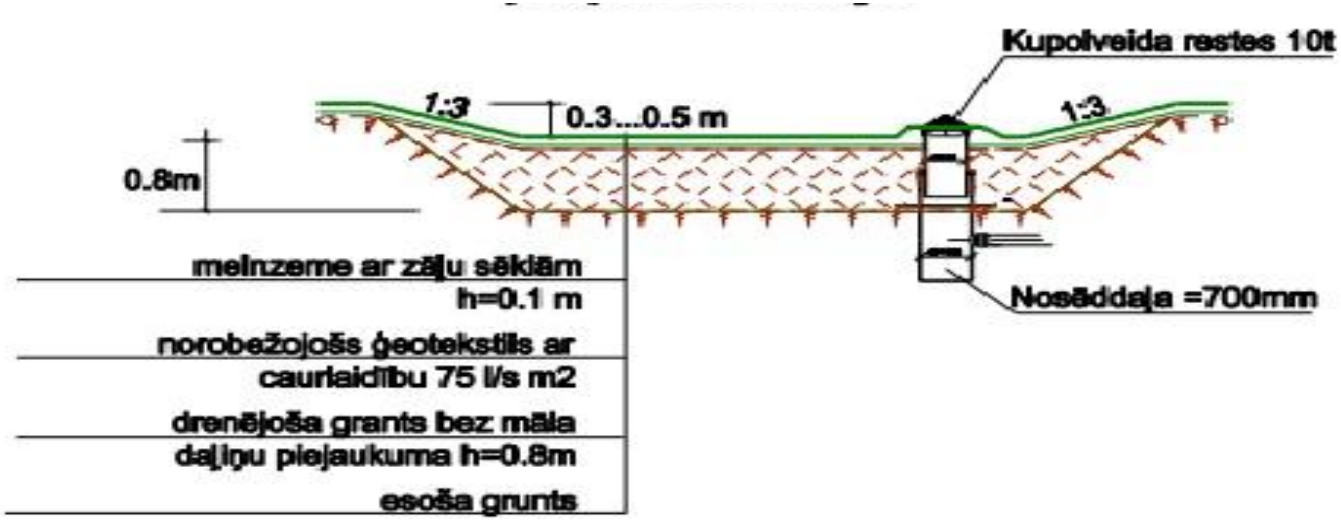




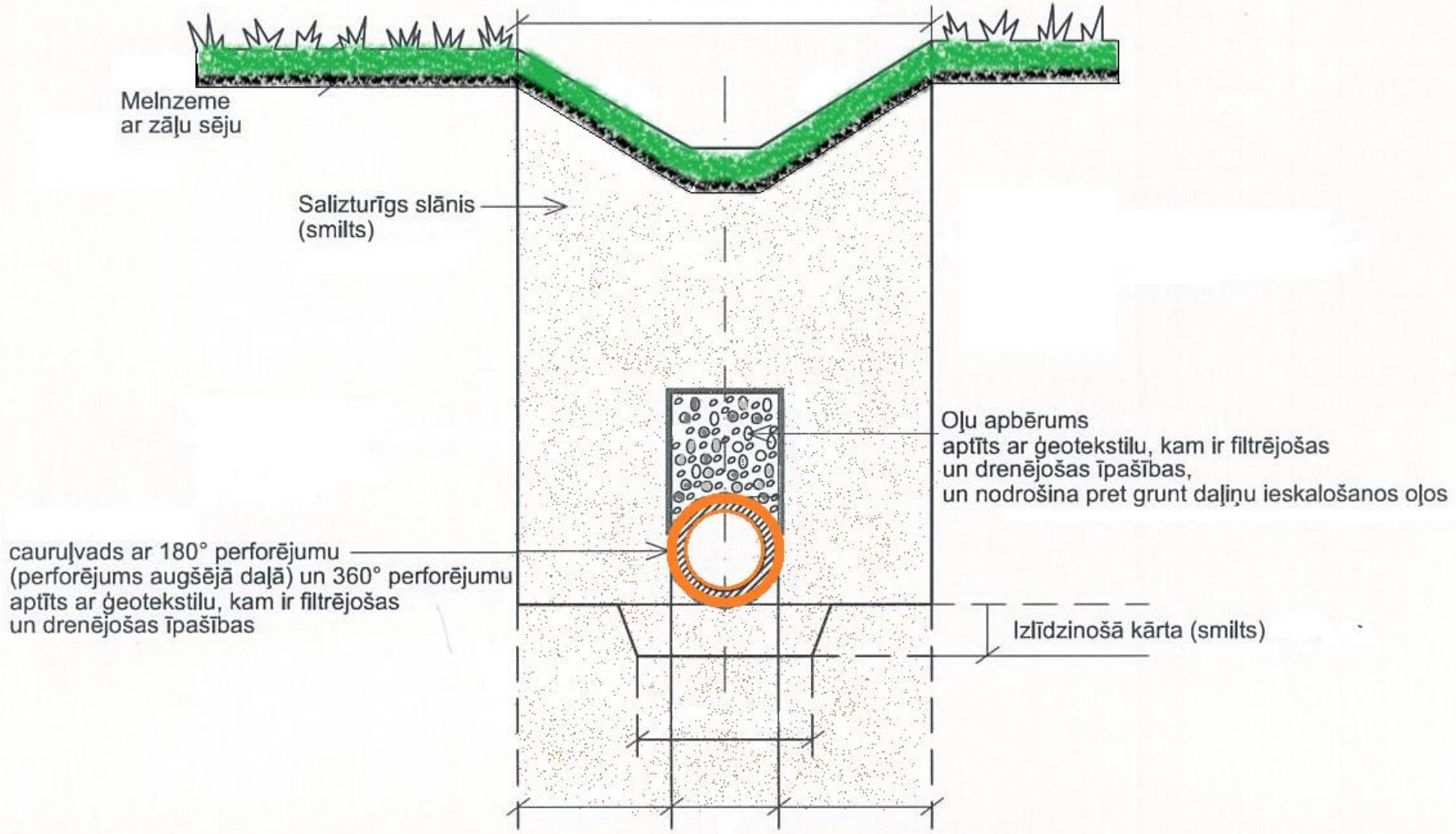
Rain gardens



Retention and infiltration ponds



Ditches and drainage in the Bauska



Thank you for your attention

more information for guidelines

http://www.bauska.lv/allfiles/files/Projekti/Lietuvas%20parrobezu%20projekti/water/Ilgtspejigas%20lietusudenu%20kanalizacijas%20vadllinijas%20g93-final.pdf

Taking concepts to plans: implementation experience of the (D)rain for Life project proposals

December 3, 2015, Uppsala

Jurijs Kondratenko, grupa93

grupa93

— leading urban designers —

Promoting Sustainable Urban Drainage Systems in Estonia-Latvia cross-border area to improve the environment for active and sustainable communities – (D)rain for Life

(D)rain for Life

Estonia Latvia Programme

European Union

Linking Estonia and Latvia

Part-financed by the European Regional Development Fund

SUDS include dry and wet swales, infiltration trenches, ponds, bio-retention cells, green roofs, permeable paving as well as rainwater harvesting and reuse techniques and methods

Main project features

- Implementation September 2012 – February 2014

Partners: Estonian University of Life Sciences (EE)
Latvian Association of Spatial Planners (LV)
Society Technologies Foundation (LV)

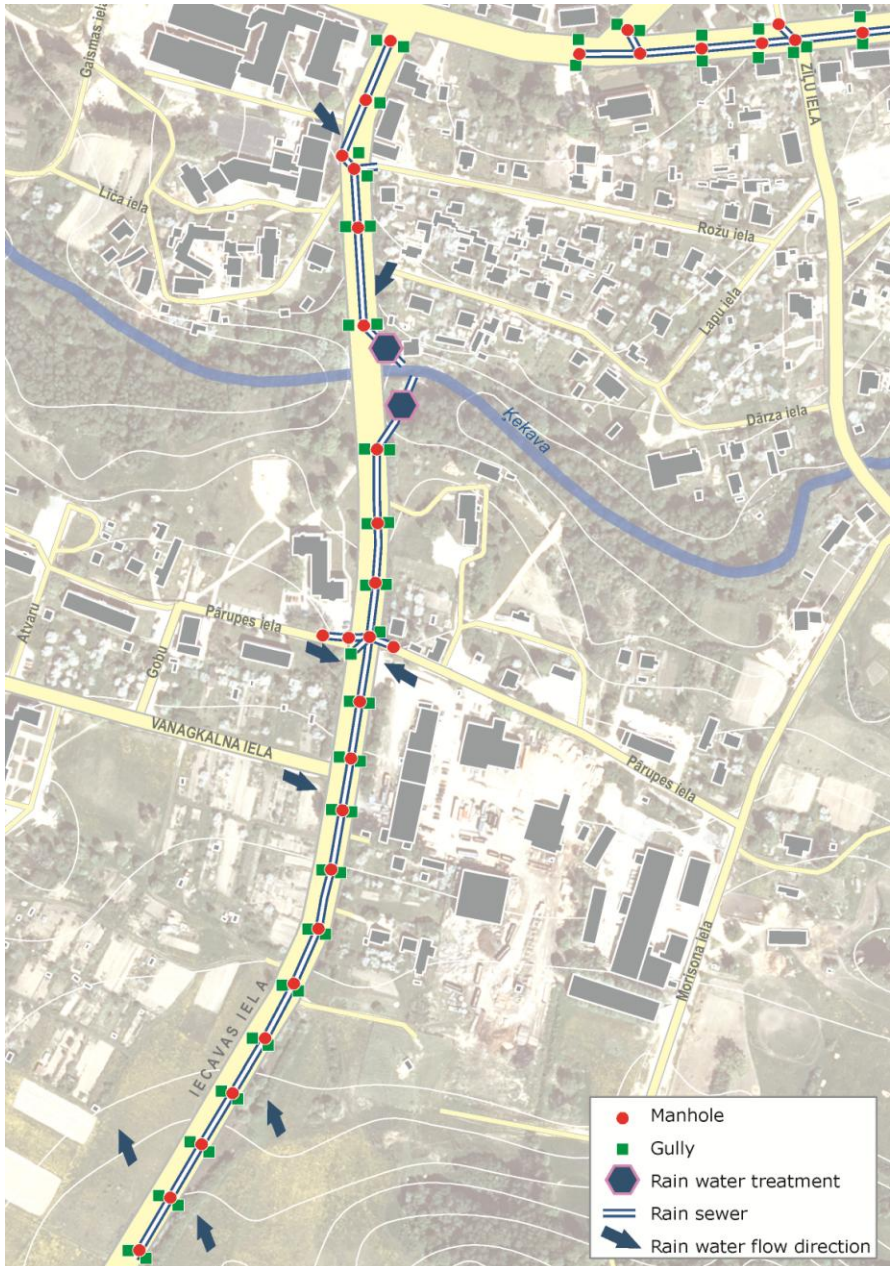
- 4 feasibility studies (Baldone, Parnu, Riga, Voru)
- 4 local stakeholder+expert workshops
- IT platform for public discussion
- SUDS handbook
- International conference
- Experience exchange trip to Copenhagen and Malmo

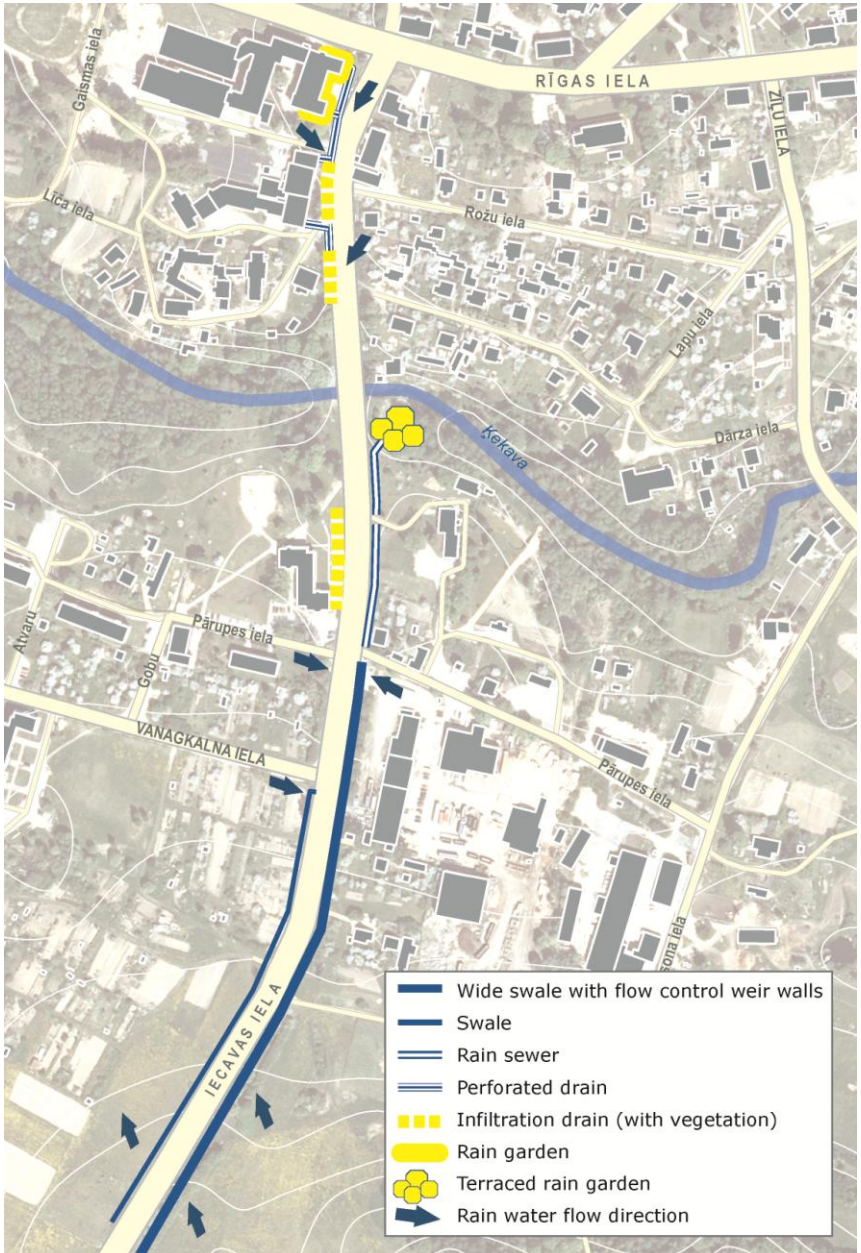
Baldone feasibility study – town centre

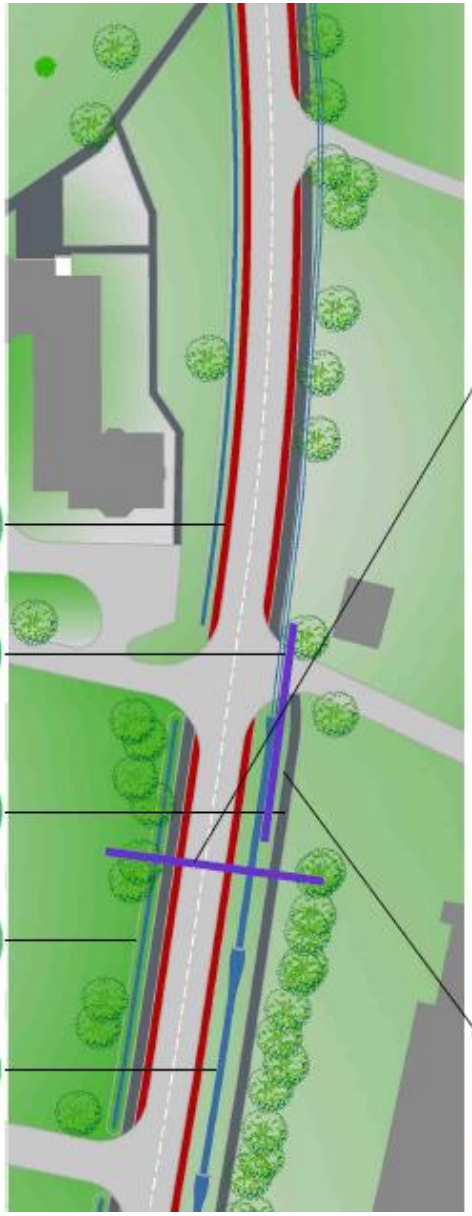
Conventional system

Iecavas iela

Sustainable system

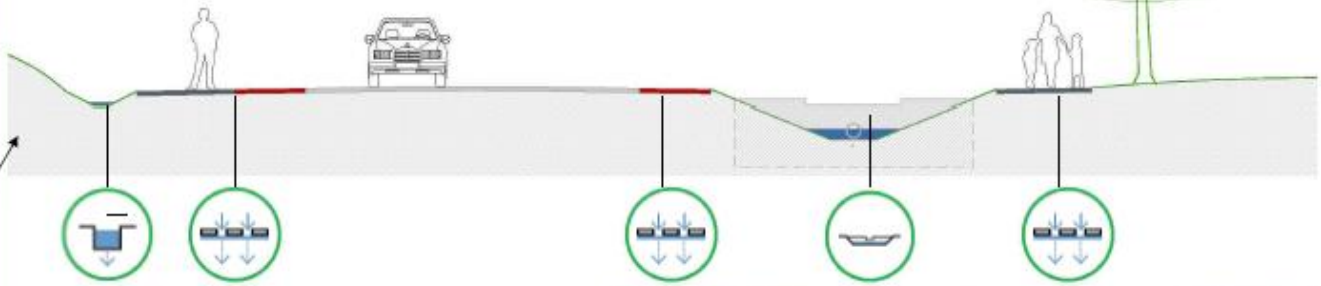






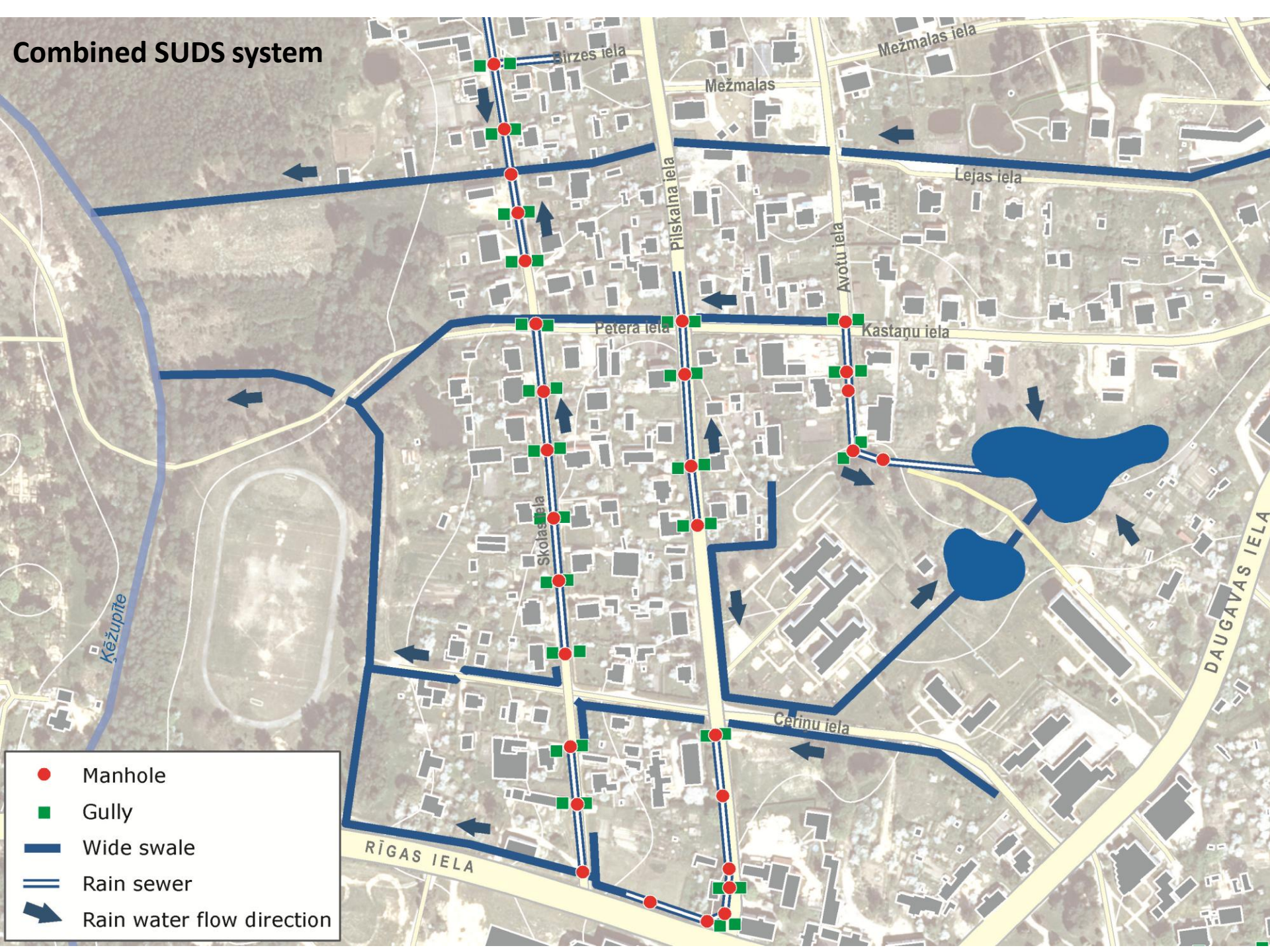
For the left side of Iecavas Street a swale is proposed – 0.3m deep, steepness of the slopes 1:2, bottom width 0.3m, surface width 1.5m, length 418m (until Pārupes street crossing). Volume – 113m3.

Iecavas street right side—wide cascaded swale with flow control weir walls – average depth 1m, steepness of the slopes 1:2, bottom width 1m, surface width 5m, length 417m. Volume – 1251m3. The swale is planned until Pārupes street crossing, where a well (manwhole) will be located from which the water will flow via rain sewer towards river Ķekaviņa.

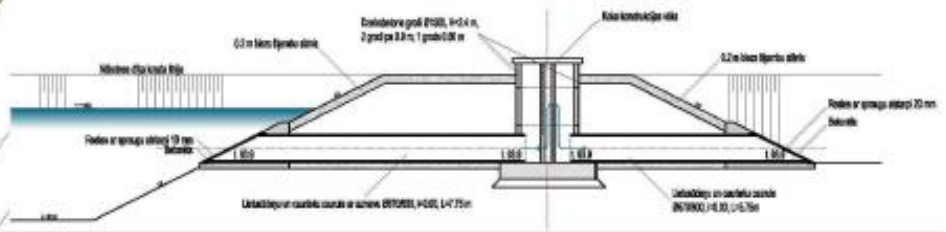


1. slopes
2. swale
3. Weir walls
4. Side slope with steepness 1:2
5. Swale vegetation
6.-8. soil with good infiltration capacity

Swales beneath intersections and road crossings connected with DN300 drainage pipes, but cascades made by iron concrete weir wall blocks with overflow arch in the middle (0.1m lower than rest of block). At the bottom level cascades are connected with DN300 drainage pipe – implemented to maintain a solid flowrate Q=55 l/s.

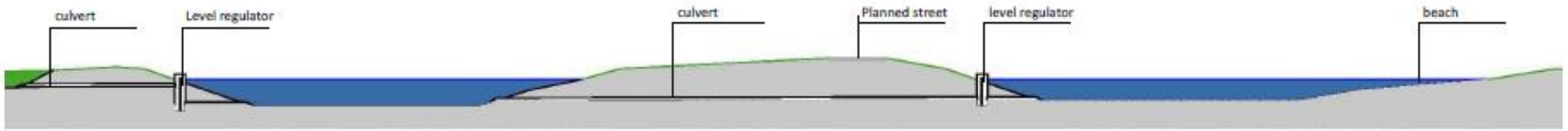

Combined SUDS system
Birzes iela
Mežmalas iela
Mežmalas
Lejas iela
Pilskalna iela
Avotu iela
Petera iela
Kastaņu iela
Skolas iela
Kēžupīte
Cērinu iela
RĪGAS IELA
DAUGAVAS IELA
Manhole
Gully
Wide swale
Rain sewer
Rain water flow direction

Sheme of level regulator



teksts

teksts



Experience and conclusions

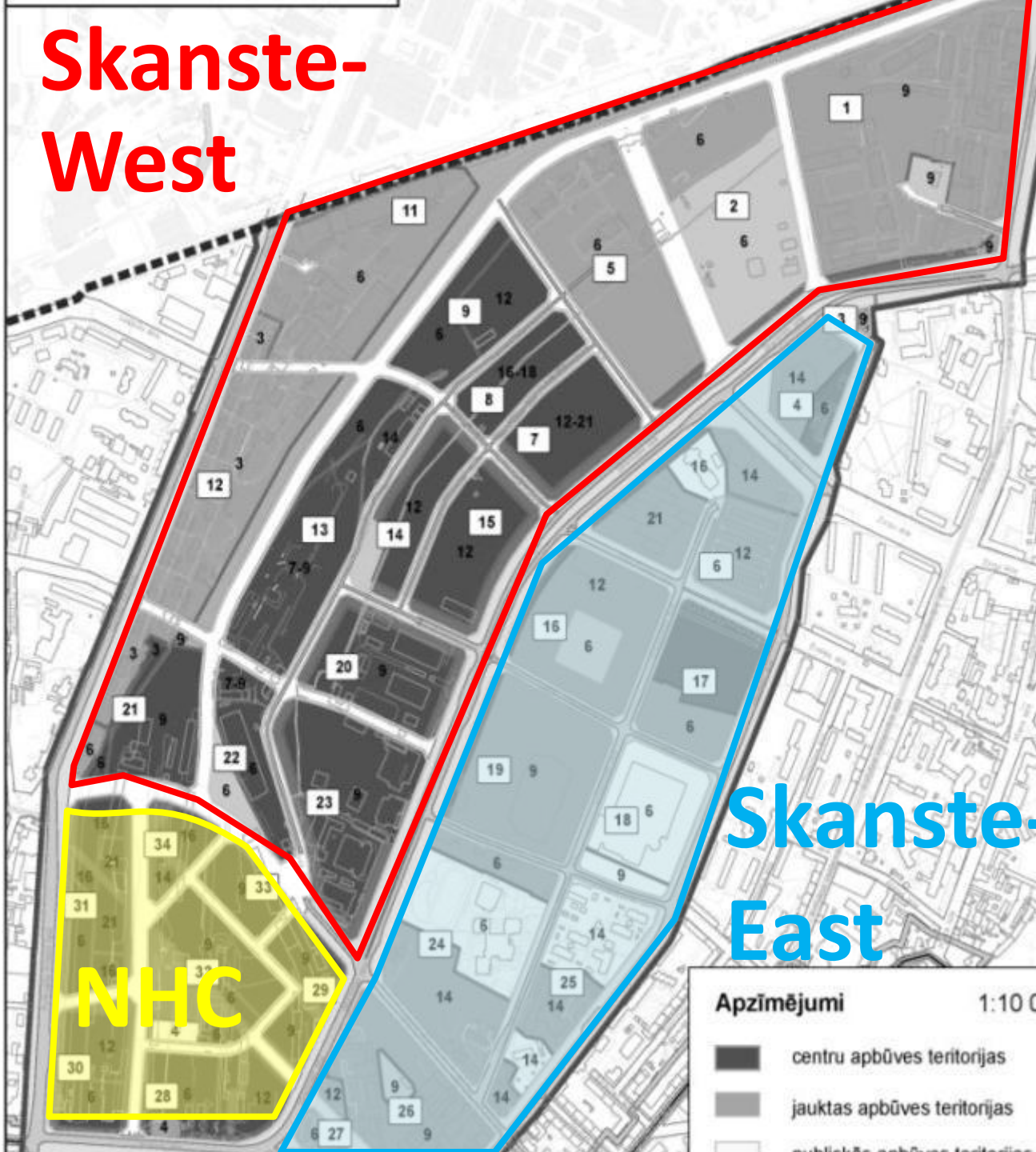
- Cheapest and most functional solution implemented
- Little interest to the proposals developed

Learning points:

- Address really perceived problem
- Understand where resources will come from

Rigas case study – Skanste area

Area division into sub-areas



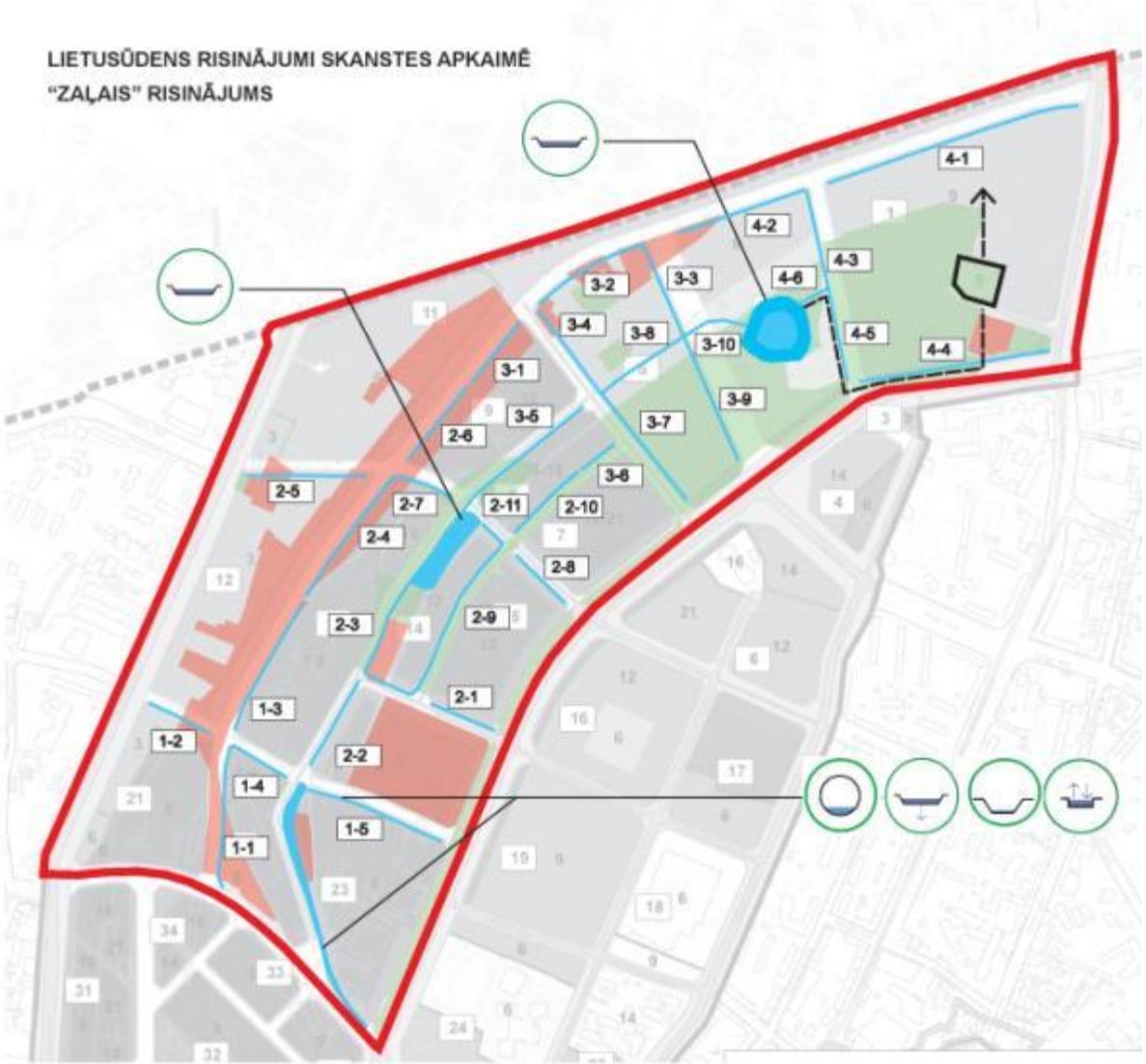
Three feasibility study options

Conventional (sewer) systems and a large water body

Ditch system with three medium water bodies

SUDS in plots, swale system, small water body

Option 2 – main ditches + 3 medium size water bodies



Direct runoff from plots to ditches

Ditches 0.7m deep, 2.6-3.3 m wide

WB area:

0.46 ha

0.6 ha

1.1 ha

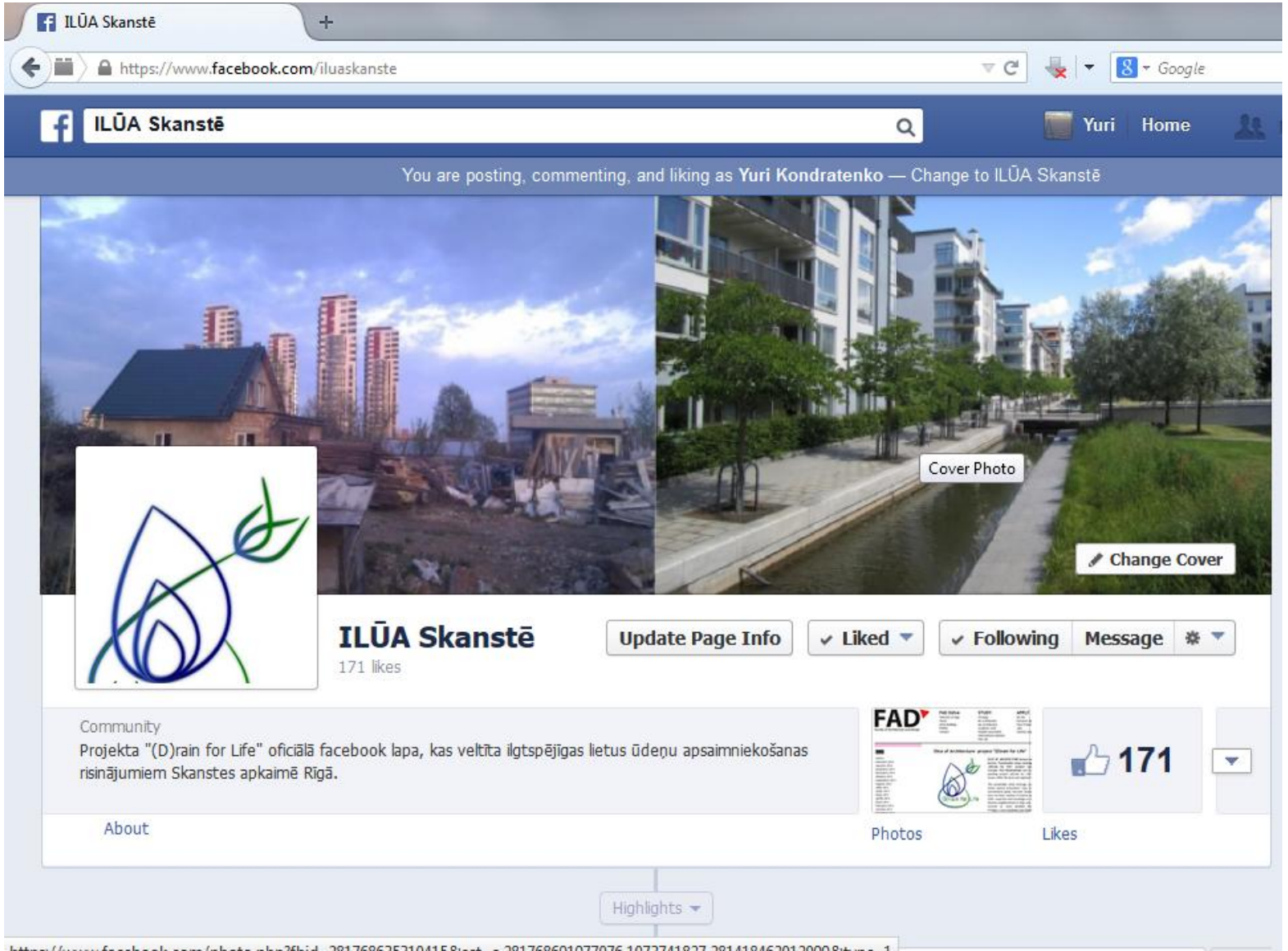
System cost comparison

	Option 1 - sewers+WB	Option 2- ditches+3 WB	Option 3 - plot SUDS + swales + WB
Municipality costs			
Construction costs	**2 997 123**	**547 579**	**396 468**
Land raising costs	2 845 744	2 845 744	2 845 744
Costs prior to land costs	**5 842 867**	**3 393 323**	**3 242 212**
Land costs	**6 225 064**	**9 806 966**	**6 605 605**
Water bodies	6 225 064	5 376 463	2 677 276
Ditches/swales		4 430 503	3 928 330
Total municipality costs	**12 067 931**	**13 200 289**	**9 847 817**
Developer costs			**379 091 to 4 647 095**
Total system costs	**12 067 931**	**13 200 289**	**10 226 908 to 14 494 912**
Maintenance costs per year	**27 971**	**16 963**	**13 236**

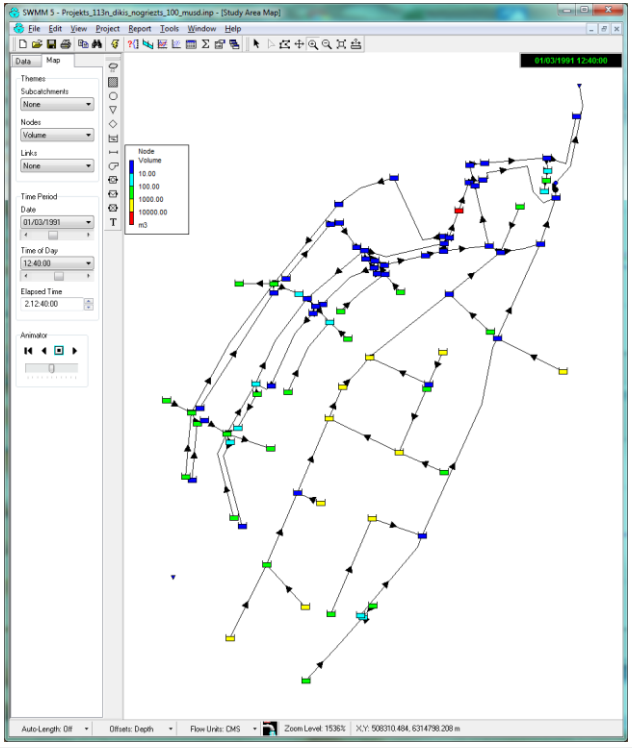
IT platform

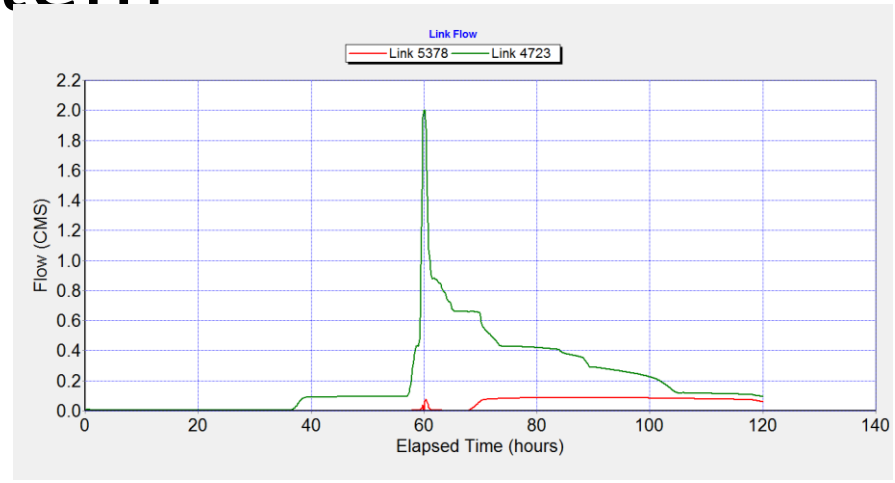

www.drainforlife.eu/index.php/lv/lidzdaliba/lidzdaliba-riga
ifs latvia
ILŪA risi
variant 2
ILŪA risin
Konvencio
Conventio
Ilgtspējīgas lietus ūdeņu apsaimniekošanas otrais risinājums / Solution two of the planned sustainable urban drainage systems
Question / jautājums / küsimus
Ask a question / Uzdod jautājumu / küsige
Kur var apskatīt digitālās kartes leģendu, lai vieglāk saprast plānoto?
Sveiki! Sarkanie poligoni ozīmē apbūves kvartālus, starp tiem ielu koridori, kuros ar zilo iezīmīte lietus ūdeņu apsaimniekošanas sistēmas elementi. Uzspiežot uz "i" zīmīti parādās informāciju par konkrētiem elementiem/ sistēmas aspektiem
comment / komentārs / kommentaar
Interesē brīvā laika, atpūtas/ sporta iespējas uz ledus kā arī varbūt zem ledus. Cik dziļi būs dīķi? Vai tajos dzīvos zivis un citi ūdens dzīvnieki? Vai dīķos arī ziemā būs ūdens, vai ir paredzētas ūdens svārstības ziemā. Un kā būs ar dīķu aizaugumu?
Dīķa dziļums "tukšā stāvokli" - ap 2 m (bes lietus). Pilnā - attiecīgi 3 m. Dziļumus var variēt, atkarībā no vairākiem faktoriem un tehniskā projekta risinājumiem. Dīķos pastāvīgs ūdens līmenis - gruntsūdeņu līmenī (apmēram 0.5-1 metri v.j.l), vai arī augstāks,
ILŪA risinājums 2 / SUDS solution 2
Like 1
Gaiņu dambis
Sūkņu stacija / ping station
ens objekts
s) / Water
ody (pond)
Lielākā daļa no noteces apjoma īslaicīgi tiks uzglabāta iekškvartālos un ievalku sistēma ir dimensionāta tā, lai caurplūdums no tās (kontrolēta ar caurtekām, un/vai meniķi) būtu 120l/s, tad funkcionāli šāds ūdensobjekts nav nepieciešams, tomēr jāņem vērā, ka šāda ūdens tilpne varētu nodrošināt rezerves tilpumu un palielināt uzkrāšanas laiku ūdeņiem, kā arī veikt ūdens attīrīšanu in situ. Piedāvātais ūdensobjekta (dīķa) izmērs ir 1.1ha.
Mieras iela
Klusā iela
Ziņu iela
Senču iela
Brīvības iela

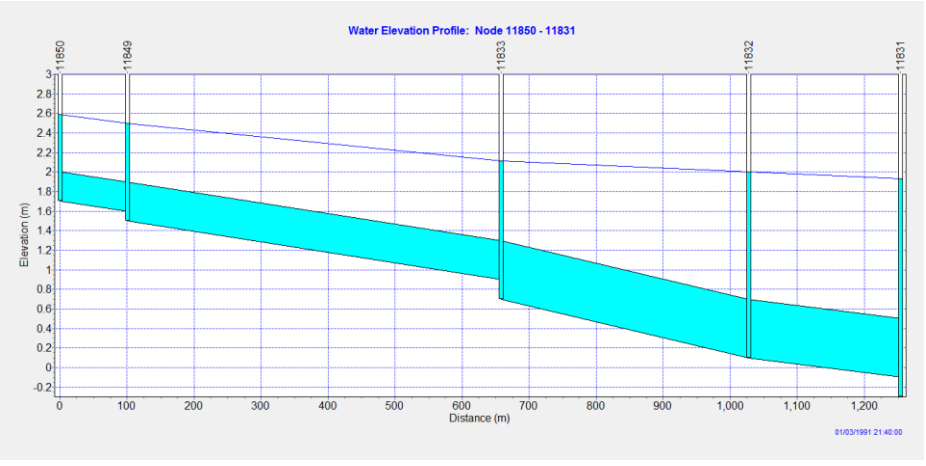
Facebook page

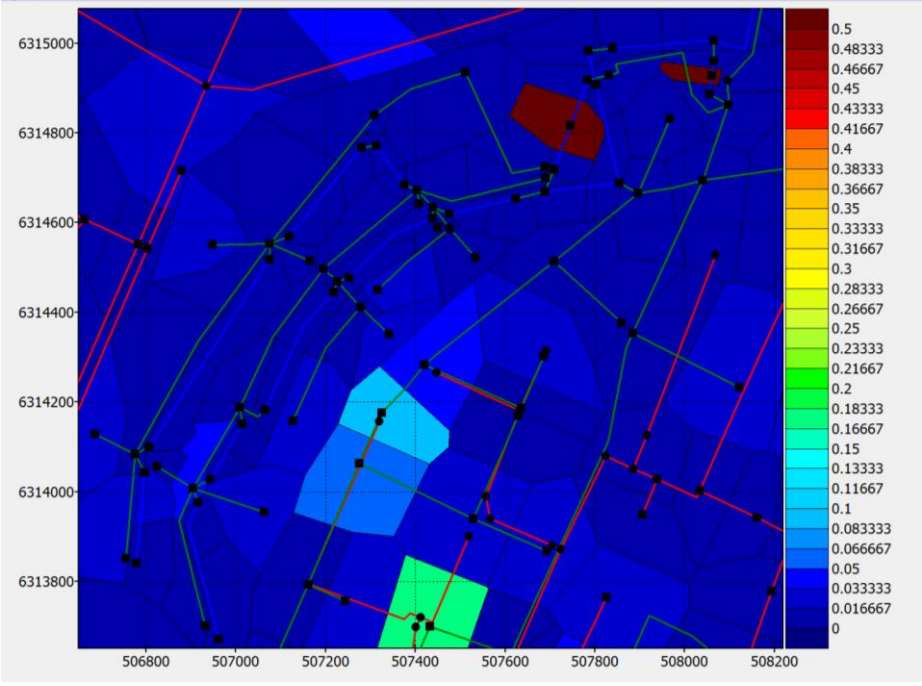


Hydrologic modelling of the stormwater system



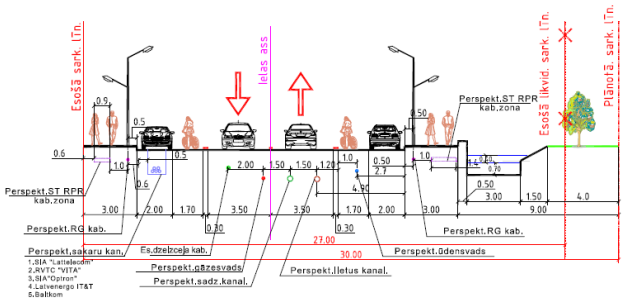




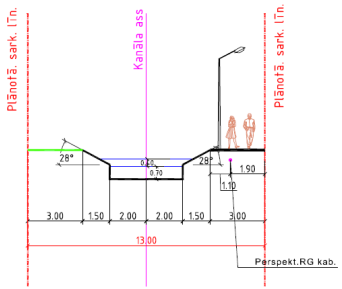


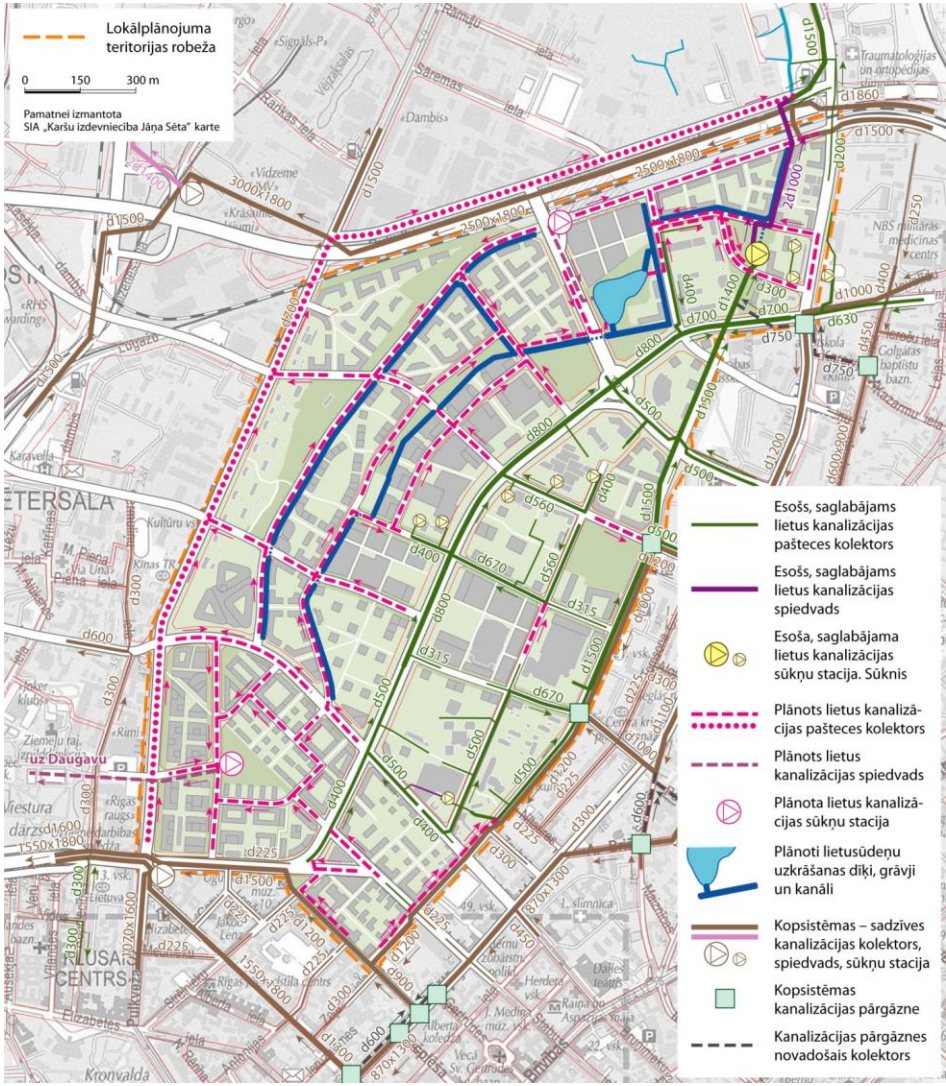
Modified project proposal included in the Skanste area local plan proposal

Laktas ielas šķērsprofils
(no Sporta ielas līdz Zirņu ielai)
6-6



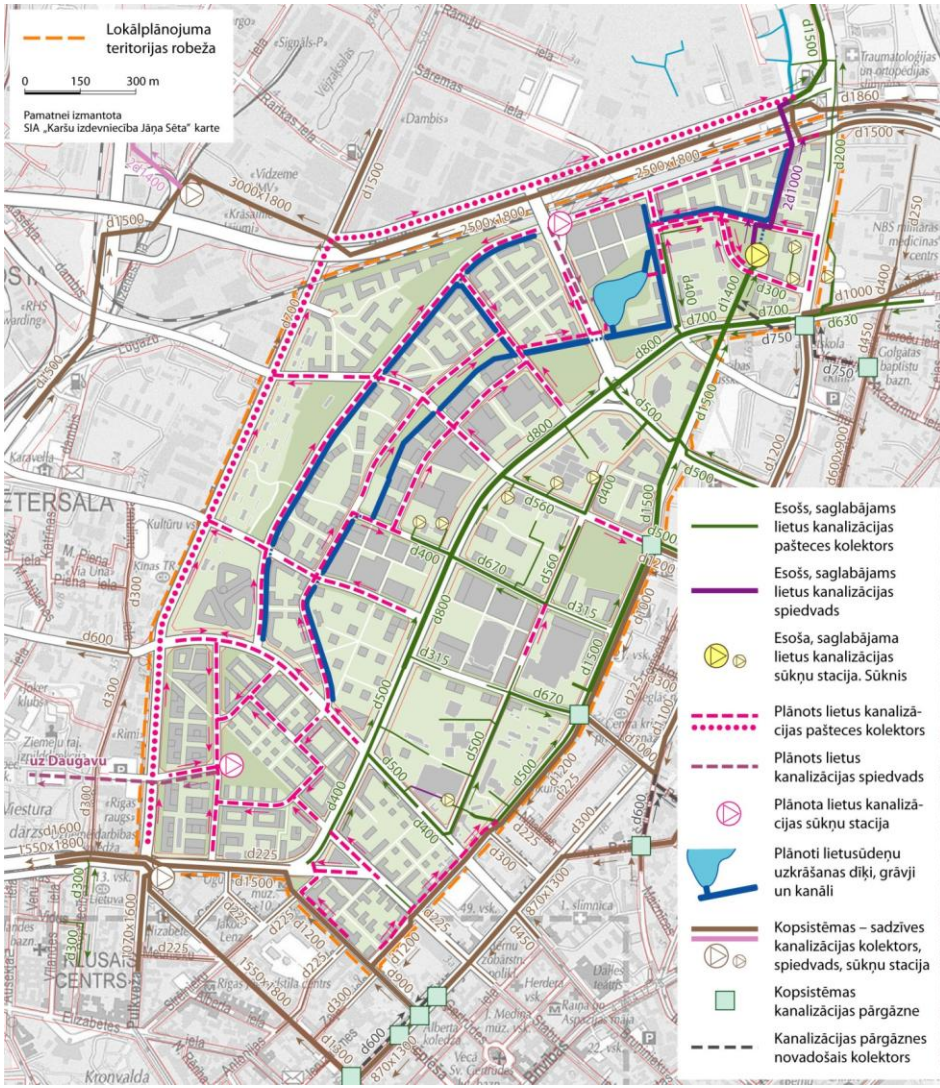
Komunikāciju koridora šķērsprofils
(starp Jāņa Krūmiņa ielu un Zirņu ielu)
48-48





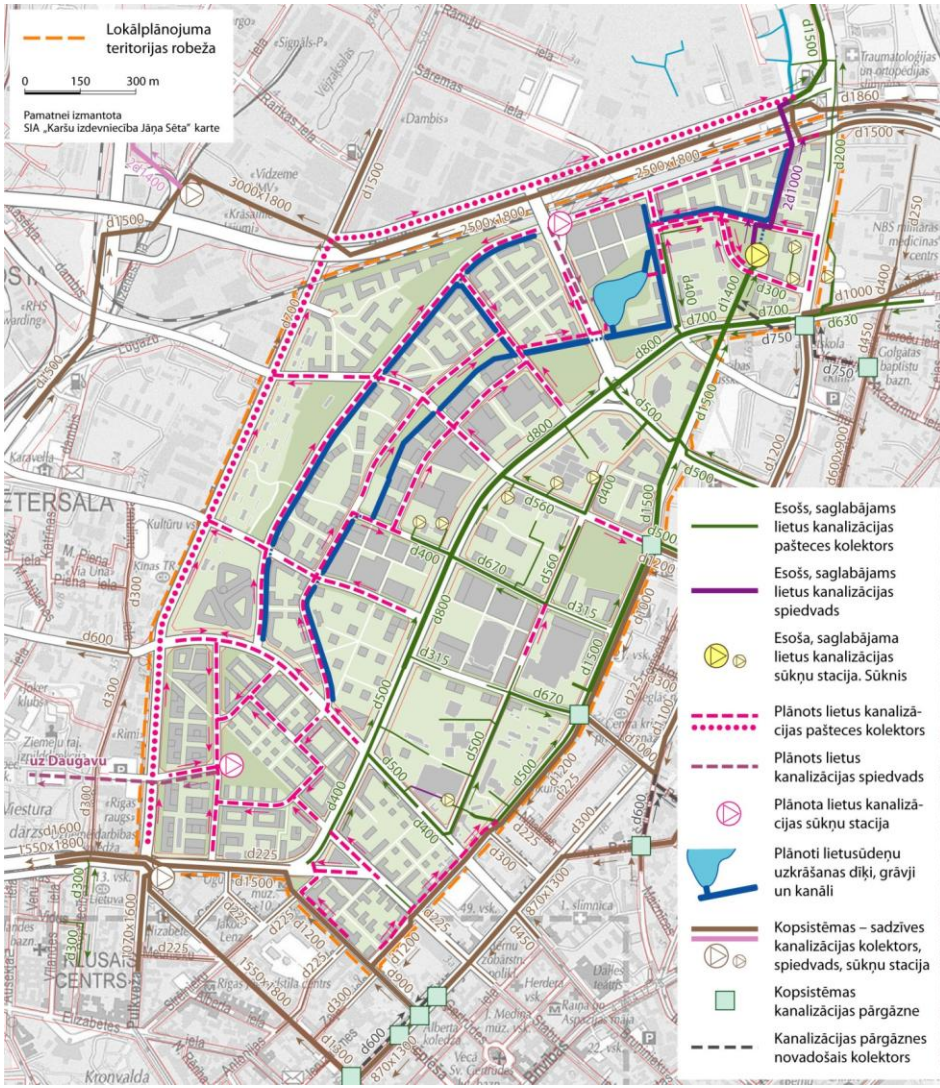
Skanste local plan

- DFL proposal taken further and refined
- Pond and a system of canals with permanent water level
- Combined with rain sewer network in the streets



Questions remaining

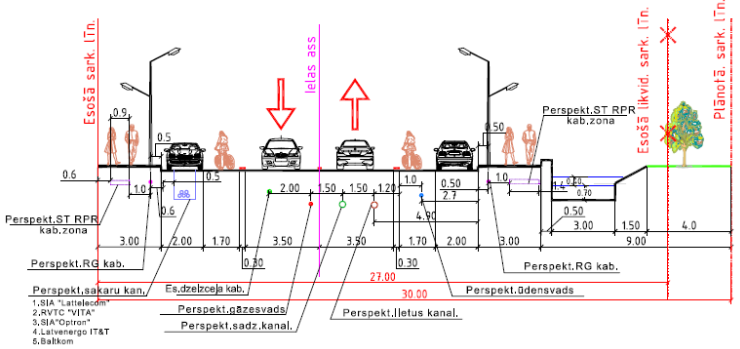
- Degree of reglamentation in the building regulation:
  - Coverage of the system (sewer/canal);
  - Land levels;
  - Water levels.
- Avoiding redundance
- Land ownership



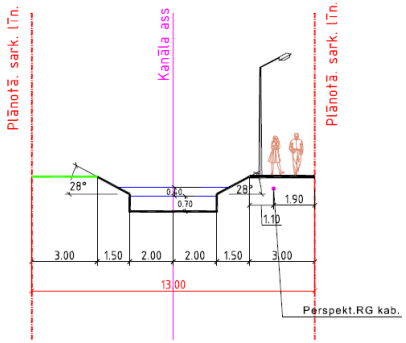
Questions remaining

- Ways to ensure permanent water level and circulation:
  - Pumping;
  - Recharge from ground water;
  - Weirs?

Laktas ielas šķērsprofils
(no Sporta ielas līdz Zirņu ielai)
6-6



Komunikāciju koridora šķērsprofils
(starp Jāņa Krūmiņa ielu un Zirņu ielu)
48-48



General questions for later projects

- Cost-effective hydrologic modelling tools
- Comprehensive cost and benefit studies
- Planning and financial instruments (e.g. rain water tariffs, discharge limitation etc)
- How do SUDS work in our specific conditions (pilots)
- Water quality regulation

Thank you !

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www.grupa93.lv

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