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Skellefteå: Intelligent City Transformation Overview

ICC Final Deliverable

European Commission | The Intelligent Cities Challenge is funded by COSME, the EU programme for Competitiveness of Enterprises and SMEs

Executive summary

At the time of preparation of the Expression of Interest (EoI) to join ICC in early 2020 it was stated that "*Skellefteå is growing, it will become a place where a lot more people will live and move, and the city in the middle of the efforts to deal that development*". The city of Skellefteå had just started to see some effects of the green industries such as Northvolt establishing in the city. The surrounding towns up north, had begun a similar journey. Now, 2 years later, the evolutions described in the EoI only accelerated - faster, bigger, and more intense.

The city of Skellefteå's issues and challenges were a perfect context for launching an ICC project. The strain on resources caused by the ongoing development forced the city to look for new and creative ways to make things to happen. The ICC program enabled the city to identify (and start implementing) some solutions for the challenges and made it possible to set up cooperation mechanisms and collaborations.

The city vision statement is "A sustainable place for a better everyday life". The idea is that Skellefteå should be a good place to live, grow and develop, sustainable in all meanings (socially, economically, ecologically). Because that is what we need for a good life. Every day.

For the work in ICC, we focused on solutions in mobility, energy and urban cultivation – solutions that we felt were relevant to most (all?) citizens, possible to move forwards on and where we had an ecosystem support. Of the 5 solutions 2 are put "on hold" and 3 are progressing in different ways – explained further in later slides.

The city of Skellefteå will now build on its ICC experience in several ways to continue to learn. The development of the "Viable Cities" project (with city climate contracts, possibly regional climate contracts) and the "Sustainable Skellefteå" project are the 2 main initiatives that we will be further built upon.

Mayor Foreword

”Building sustainable cities and societies is not something we can neglect, especially considering the unique growth the city of Skellefteå is facing right now - it is a natural thing for us, as a municipality and a region, in order to be interesting for more businesses to settle and to increase our population.

By signing a climate contract we want to strengthen and further develop upon projects and initatives as initiatted in the Intelligent Cities Challenge program, and to coordinate activities and strive for a sustainable development of our society.”

Mrs Evelina Fahlesson,

municipal commissioner and deputy mayor of Skellefteå

The city of Skellefteå pursued an EU-supported transformation over four main stages, and this document details that journey by these sections

Overview to the city's journey and structure of this document

Reported as one section

1 Preparation & assessment

5 months:
September 2020 – January 2021

2 Ambition & roadmap

3 months:
February 2021 – April 2021

3 Implementation

15 months
May 2021 – July 2022

4 Review & way forward

2 months
August 2022 – September 2022

Summary

As Skellefteå started the **turnaround**, coming from decades of a stable or even declining population, to a **quick growth**, support was welcome.

Can we provide new residential areas, new industries, new places to work and infrastructure while keeping and expanding **a beautiful, attractive, sustainable and fair city**?

How do we do that? What **teams** do we build?

Through **workshops**, **stakeholder dialogues** and **cooperative** efforts we focused on a number of solutions. These were chosen as ideas where ICC actually could make an impact.

Mobility, energy use and urban living spaces were put forward.

Mobility hubs and **local energy grids** are the solutions that have advanced the furthest. They are being **implemented** in **ongoing** city **developments** in several parts of the city, for example as a part of the development and retrofit of the **Campus** area.

Infraculverts have been investigated but put on hold and **autonomous shuttles** are seeking national funding and cooperation needed to meet legal requirements.

We have started a new way to collaborate, based on the **Sustainable Skellefteå Platform** that will continue with support of **Viable Cities**/Climate Neutral Cities with climate contracts.

As a part of that, measurement and follow-up methodologies will be further developed.

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Section

1

Skellefteå: Preparation and assessment

ICC transformation

September 2020 to January 2021

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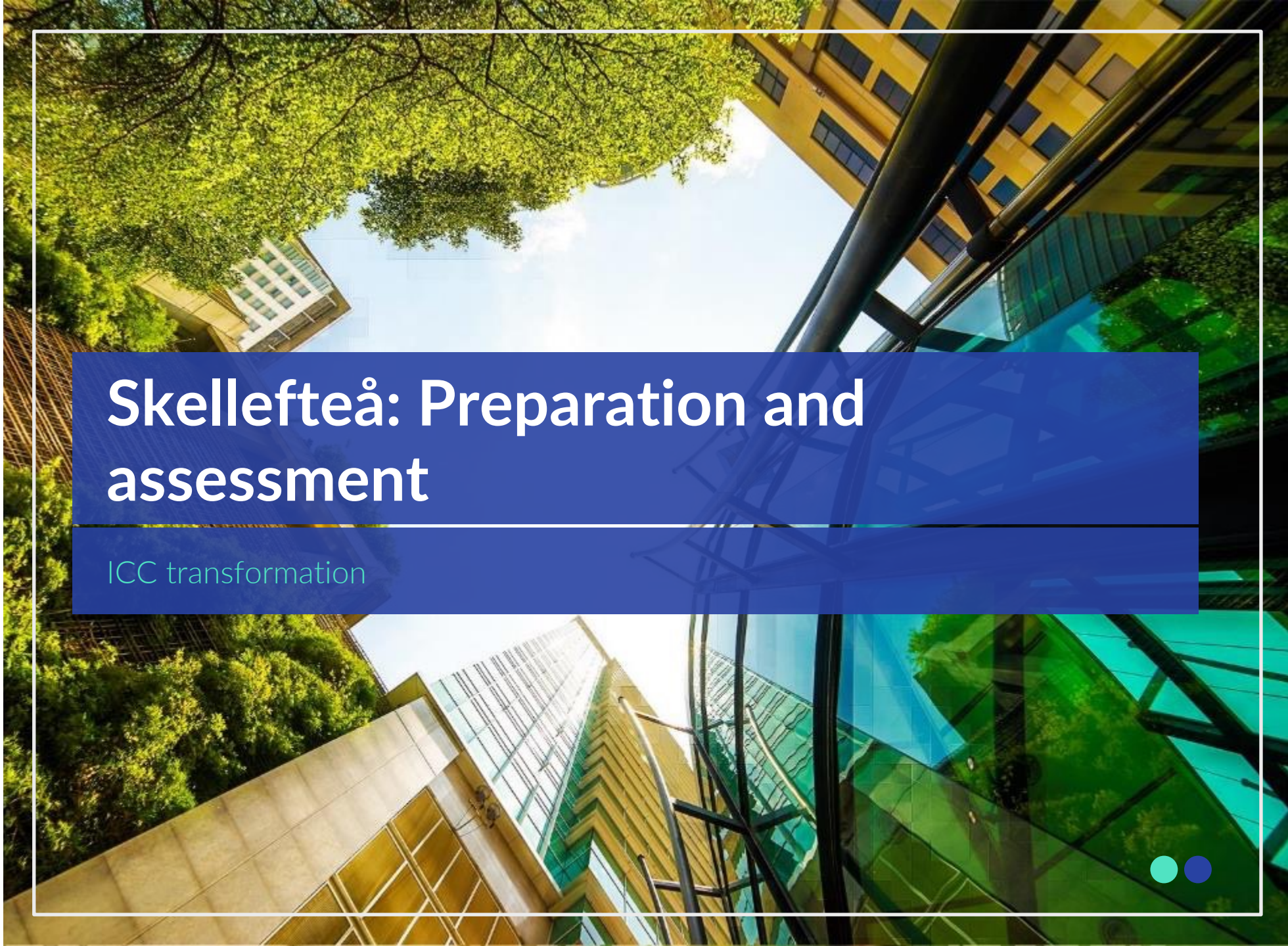

Introduction

Skellefteå is growing, it is a place where a lot more people will live and move, and the city is in the middle of the process of dealing with these challenges. The sheer volume of construction projects and planning processes is unprecedented for the city: new residential areas are being developed, new industries emerge, infrastructures and places to work are taking shape.... The process to build a beautiful, attractive, sustainable and fair city has started – requiring, at the same time, dedication and a long-term city plan.

The ICC program provided a suitable context for the city of Skellefteå's strategies and initiatives. Despite the sometimes-challenging circumstances for the cooperative approach within ICC (vs the increasing demand within the city for efforts), the workshops and one-to-one dialogues were a way to drive the city's developments in the right direction.

ICC activities have been connected to the existing strategies, mainly the Skellefteå 2030 strategy that has been revised during the ICC time frame – with inputs from ICC. The Skellefteå 2030 strategy is really an integrated strategy that leads the way to our city, in 2030, with a revised population target of 90 000 inhabitants (baseline 2019 ~70 000, former target 80 000).

City needs: State of the city overview

Significance of insight to what we want to do on the ICC

- Of critical importance to ICC journey and we should be working to change
- Of importance to ICC journey, and we should act to change this along the journey as opportunity presents
- Contextually relevant, but not major point of attention in ICC and unlikely to be impacted on the journey

The state of Skellefteå today

Skellefteå is a place where green and sustainable energy is the norm, and there is capacity in both grid and supply to grow. There are several ways to handle upskilling and reskilling, with training and education centers at several levels - from basic education, all the way up to university research.

The city has a low unemployment rate and is generally considered a safe and secure city. There are innovation labs and active communities, as well as support for startups and scaleups in different segments. Pandemic preparedness is good and there are no critical infrastructures or assets vulnerable for climate risks.

Digital services and e-government solutions are in place, but the journey has only started – there is room for improvement. A digital strategy for cohesive city planning is under development and will aim to create effectiveness, cooperation and ease implementation.

Because of the recent growth, there are some issues lurking. Traffic congestion is starting to become an issue and energy use (although "green") is increasing due to the new establishments. As long as the heavy traffic on road E4 still runs through the city center, some air quality standards are regularly exceeded in some city areas. There are also some surface water bodies that deviate in quality.

The city's starting points for ICC were the city goals "Smart and green mobility and transport" and "Transforming and greening construction, housing and urban management".

Key insights from city performance analysis

Higher performance observed

1. Availability of renewable energy
2. Innovation labs/accelerators/fablabs, accessible for companies in traditional sectors as well as new sectors such as gaming, including cross-cutting in between
3. Upskilling and reskilling strategies and training
4. Low unemployment rates
5. All five sustainable urban management principles apply.

Lower performance observed

1. Annual energy consumption is increasing
   (BUT it is tied to new establishments that otherwise would use less green energy!)
2. One or several air quality standards have regularly been exceeded over the last years in places
3. Biological and physio-chemical quality elements for one or several surface water bodies are unsatisfactory (sometimes)
4. No use of open data in policy making.
5. PPI has been considered but only used in a few cases.

City ecosystem

Key topics for discussion

- Shared aspirations and vision – do all stakeholders see the city in the same light and believe we are already on a journey?
  - Mostly yes but from different perspectives and starting points. Some are more pro-active, some active and some are more re-active. The question is addressed on some arenas and cohesive strategies within digital city planning amongst others is under development. Different stakeholders act as enablers in different ways but Skellefteå Kraft as a power company is vital, and other key players are the different construction and development companies that make new buildings happen.

- What we bring and how we work together – what capabilities are different parties bringing to the party? Do we work together well in ecosystem situations?
  - The municipal corporate group is diverse but is finding better ways to work together. Most capabilities have inter-dependencies and some have overlaps. For example; The municipality has formed special teams, to be able to earlier in the process meet demands from new establishments. The program "Sustainable Skellefteå" to drive projects within the area of renewable energy solutions. Working norms for the ecosystem is mainly informal but there is a general feeling of "togetherness" in most parts, meaning different ecosystem actors help each other. But being informal, sometimes it is difficult for newcomers to become included. While the ecosystem is generally strong and resilient, it is also under hard pressure to meet tough deadlines in a situation where there is a shortage of staff – meaning that sometimes it is hard to take the time to reflect and improve.

- Urban resources for transformation – does our wider city more broadly have the typical assets needed for a major transformation like access to capital, a skilled labour force and critical thinking?
  - Yes, in general. However, there is a clear need to continue to make room for growth and incoming people and businesses. We can also see a greater interest from external capital and private investors.

2 ICC strategy: Vision and ambition statements

"Skellefteå – a forward-looking, appealing and expanding municipality, which offers equal opportunities for those who live and work here, with the aim to have 80 000 inhabitants by 2030"

(A vision embedded in the city's 'Vision 2030 program')

(*Priority statements in blue.)

A sustainable and diverse environment

- Sustainable construction and exploitation of land
- Renewable and green energy

Knowledge and unique competence

- Upskilling and re-skilling

Globally competitive economy

- Innovation system support
- Start-up and scale-up support

Overcoming distance

- Supporting electromobility
- Sustainable transport systems and mobility hubs

City strategy: justification

The vision of Skellefteå is “A sustainable place for a better every-day”. As the municipality has a large area, transport and mobility is a key part of the everyday life of the citizens. That is why mobility solutions are highlighted. Energy is always present, from the power production to the need of keeping warm in cold and dark winters – more efficient use means we can grow the city while not increasing total energy use.

There are strong interactions between 2 sets of solutions:

- Solution 1 “multi-function parking complex” and solution “5 Rolling bus shelter” are closely linked: the parking complex or mobility hub will be connected to autonomous vehicles, where applicable
- Solution 2 “local energy grid” and solution to 3 “infrasystem culverts” also interact: local energy grids will be greatly improved by an approach with infrasystem culverts

These interactions has been highlighted through the work and interactions within the ICC project.

The three thoughts that have best guided the city on its way, what are (1) the importance of common vision and goals, (2) structures for prioritizing, and (3) an explicit mandate and roles for stakeholders connected to the projects

The key factors that define success across the solutions are (1) involving different stakeholders within the municipality organization, (2) having a functional system for co-operation, and (3) creating a functional common system for governance.

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Skellefteå: Ambition and roadmap

ICC Transformation

February 2021 to May 2021

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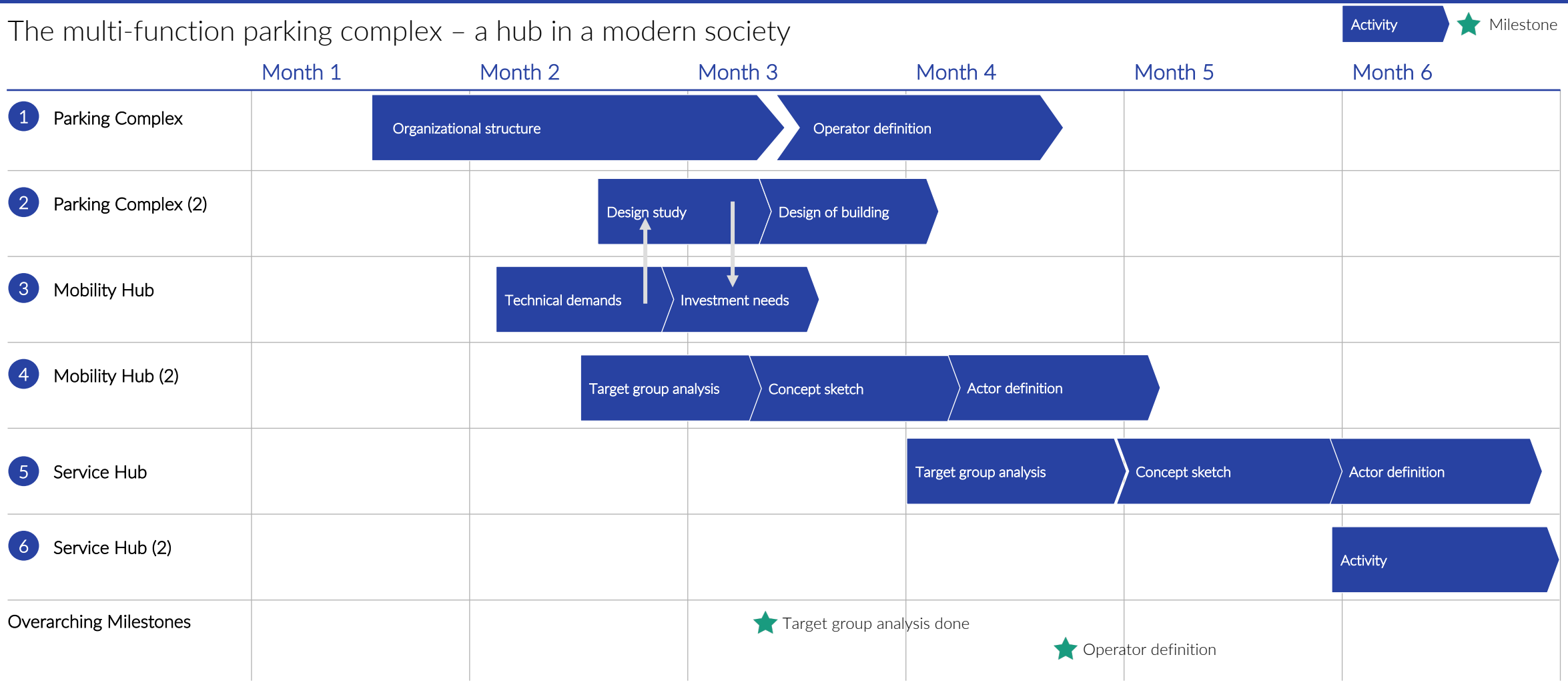
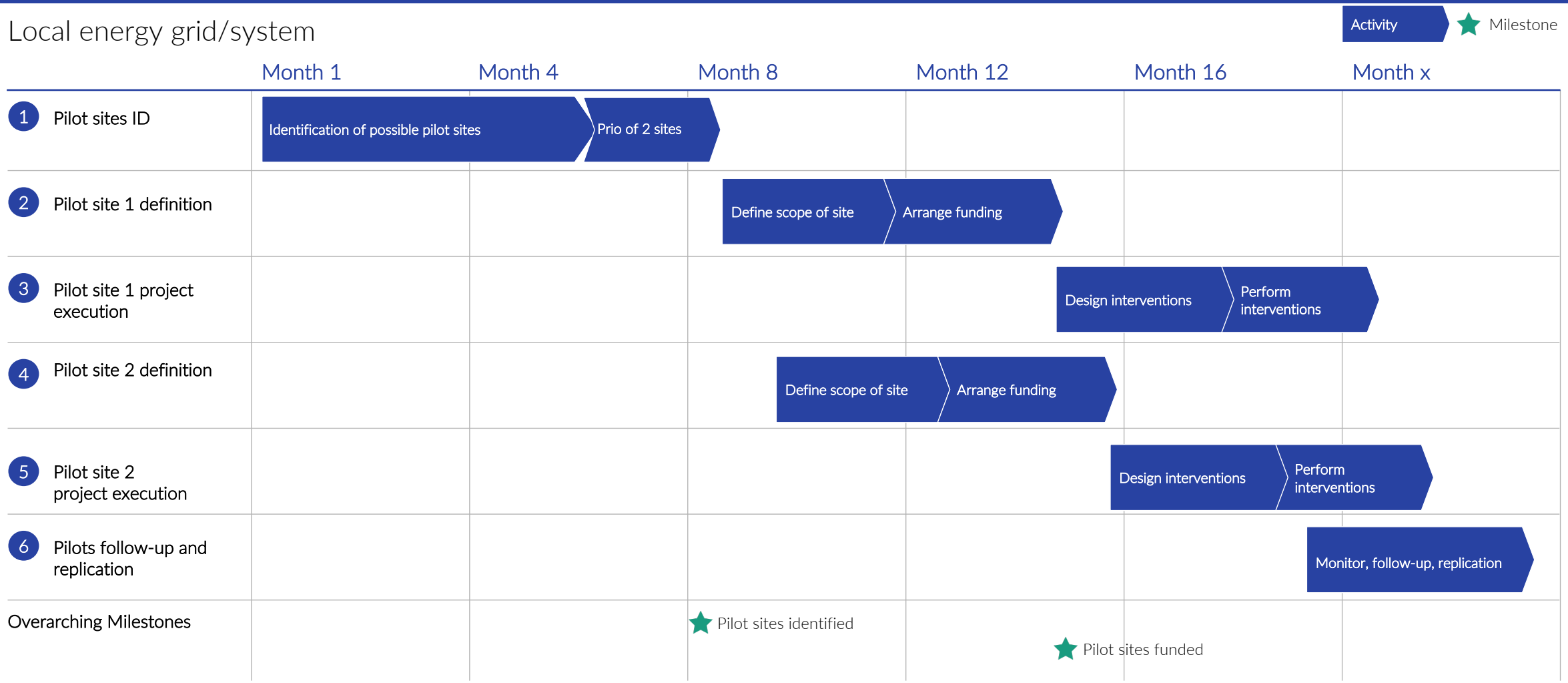
High level implementation roadmap for solution (“10000m plan”) – Solution #1

The multi-function parking complex – a hub in a modern society



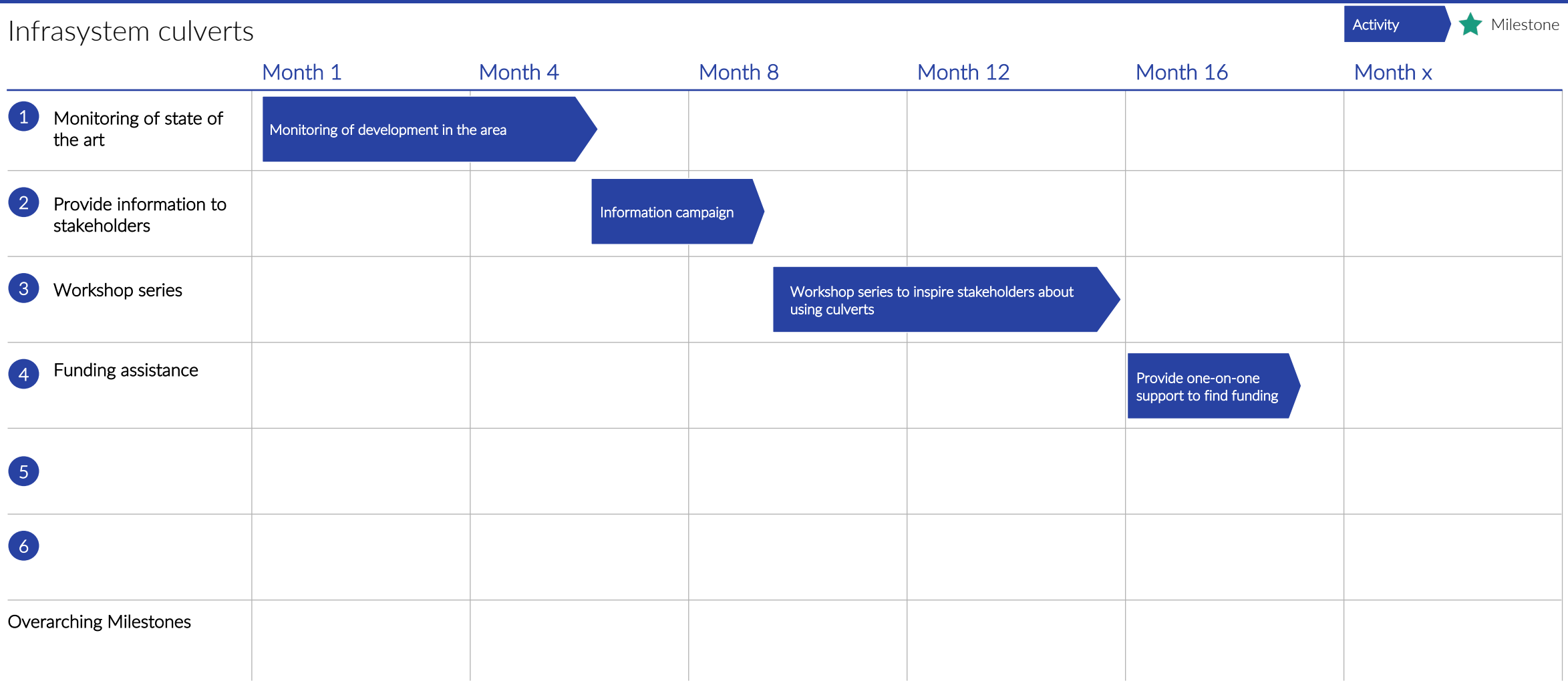
High level implementation roadmap for solution (“10000m plan”) – Solution #2

Local energy grid/system



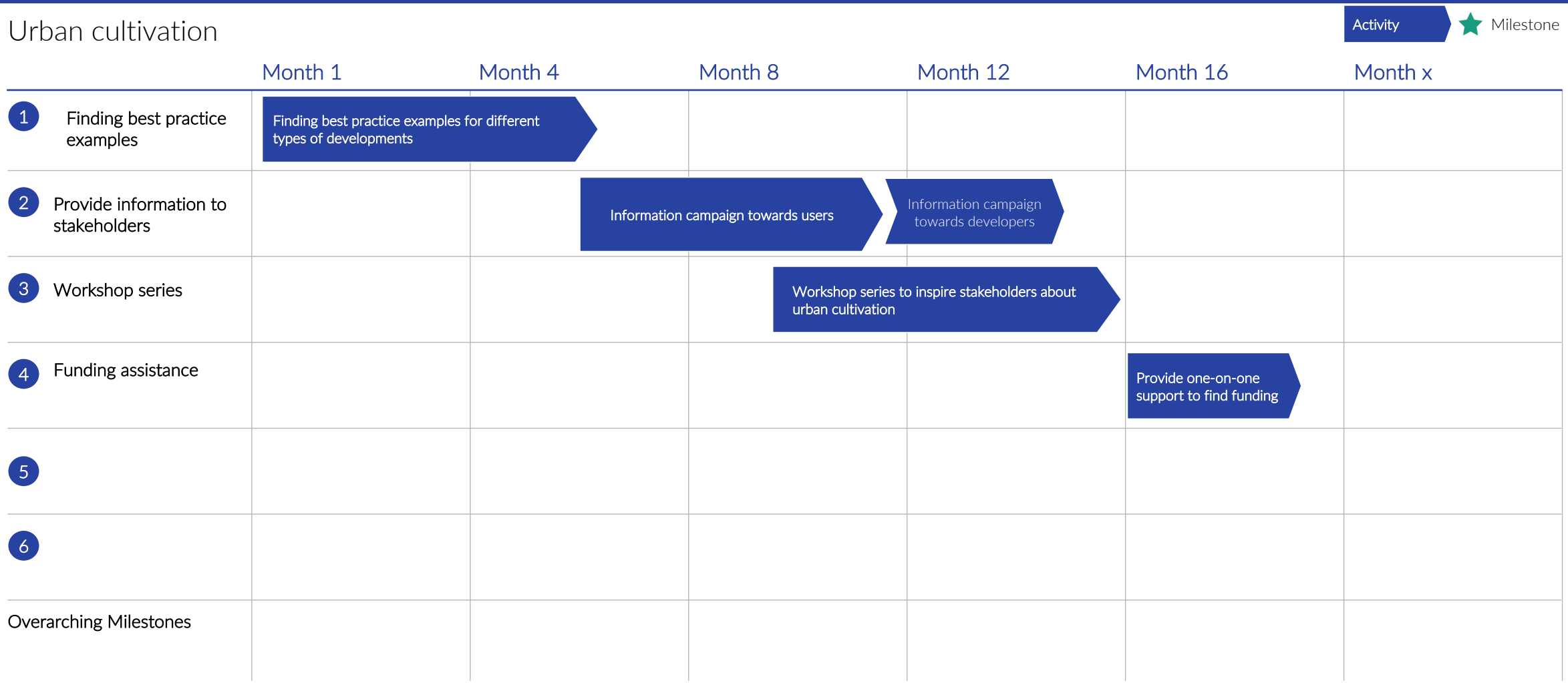
High level implementation roadmap for solution (“10000m plan”) – Solution #3

Infrasystem culverts

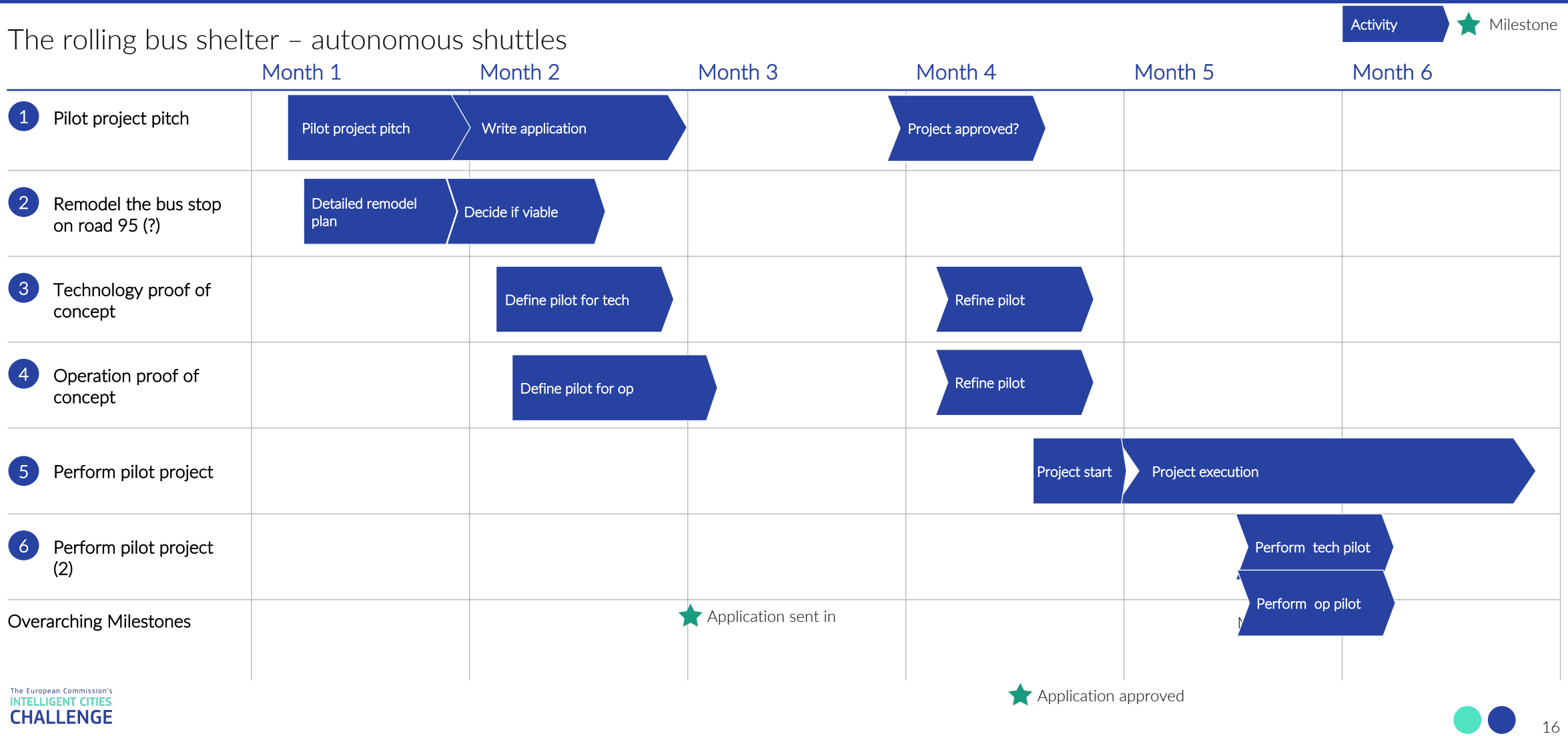


High level implementation roadmap for solution (“10000m plan”) – Solution #4

Urban cultivation



High level implementation roadmap for solution (“10000m plan”) – Solution #5



Rationale to road map

Roadmaps were made for only two tangible solutions for which sufficient (planning) information was available to report on. Both roadmaps contain critical tasks or processes (e.g., remodelling a bus stop) over which the city itself has no full control – and which slowed down the progress.

The roadmaps have been planned using established models (used in the city administration) and with best available knowledge about funding, time restraints etc.

All solutions are dependant on external factors and these are critical. As an example, the development of mobility hubs/parking complexes is tied to the contractors that design and build new areas. They are connected to how the roads, parking spaces and public transport is being planned. It is all part of a puzzle where pieces need to fit together. The ICC solutions are pieces of the puzzle and implementation needs to respect the other processes.

Partly resource limitations impact the priority but more often the timing is connected to other developments.

Initiative charter Solution #1:
The multi-function parking complex – a mobility hub in a modern society

Strategy

Description

What: The concept of mobility hubs expands a parking complex to a versatile hub with mobility as the central feature (combining parking, mobility services and other services)

Why: Provides mobility in a more efficient way using shared resources and public transport

How: Concept development – possible locations – business models

Link to vision

A sustainable place and a better everyday life

Link to ambition statement

Sustainable transport systems and mobility hubs

Supporting electromobility

Expected impact and timing

Less surface space taken up by private parking – more shared rides

Increased use of public transport and micro mobility

Can be implemented in small scale from late 2022 – full impact starts 2023?

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Stakeholders involved

Solution lead: Skellefteå kommun

Solution working team: Simon Markusson

Gustaf Ulander, Petter Johansson, Seved Lycksell
Ronny Söderberg, Elin Blom

Michael Carlberg Lax

Contributors: Housing/construction

Carpool – Public transport – mobility services – other services

Risks and mitigation

What are the key risks?

Finding suitable locations, getting the services together, overarching agreement to actually "do it"

What challenges are likely to arise during implementation?

Business models, user acceptance

What are mitigating measures that are being put in place?

Designing a pilot to demonstrate feasibility and "kick start" the market

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Combination of municipal funds, private investors and possibly external funding (ERDF, Vinnova…)

Solution maturity outputs

Generic open data platform(s) and strategy is crucial to reach full potential in the hubs.

City performance outcomes and impacts

The initiative will have a substantial impact on quality of life and possibly air quality when fully implemented.

Initiative charter Solution #5 : The rolling bus shelter – autonomous shuttles

Strategy

Description

What: Autonomous shuttles to connect smaller, remote villages to main bus lines.

Why: Attractive and cost-efficient public transport also for people living in smaller, more remote and sparsely populated areas

How: "Real" pilot (proof of concept x2), improved bus stops

Link to vision

A sustainable place and a better every day life

Link to ambition statement

Sustainable transport systems and mobility hubs

Supporting electromobility

Expected impact and timing

More attractive public transport (both the main lines since they will be better, and the connections) – more use of public transport – less private car traffic

True impact is dependent on regulations for autonomous vehicles – 2025-2028?

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Stakeholders involved

Solution lead:

Skellefteå kommun

Skellefteå Buss

Solution working team:

Gustaf Ulander, Petra Bassioukas Hanseklint

Petter Johansson

Contributors:

Ramboll, RISE

Risks and mitigation

What are the key risks?

Regulations allowing use of autonomous vehicles on public roads with traffic

What challenges are likely to arise during implementation?

Need to improve regular bus stops in order to perform pilots, road and weather conditions

What are mitigating measures that are being put in place?

Policy work on regulations

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Bus stop improvement around 2 million SEK, regional transport plan funding, local funding or possibly other state funding

Technology proof of concept 3-6 million SEK, funding from Vinnova/Drive Sweden. "Low cost option" 1 million SEK

Operational proof of concept, 4-8 million SEK, Vinnova, Drive Sweden, Trafikverket or European funds?

Solution maturity outputs

The solution relies on broadband/4G and in the future 5G coverage to give a complete service for the entire journey,

City performance outcomes and impacts

The initiative will have a substantial impact on quality of life when fully implemented, especially in rural or countryside settings.

Initiative charter Solution 1 and 5: Digital Infrastructure for Mobility

Strategy

Description

What: Developing digital infrastructure for mobility services in Skellefteå. This is a result from needs identified in solution 1 and 5

Why: Lack of shared data and management of big data hinders development of mobility services where multiple municipal stakeholders and external stakeholder are involved

How: Implementing common framework for working with digital infrastructure and concrete applications

Link to vision

A sustainable place and a better every day life

Link to ambition statement

Sustainable transport systems and mobility hubs

Supporting electromobility

Expected impact and timing

More attractive public transport and more individualized solutions for the citizens and visitors of Skellefteå

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Stakeholders involved

Solution lead: Skellefteå municipality CIO

Solution working team: Michael Carlberg Lax, Alexander Starek, Petter Johansson, Seved Lycksell, Marie Larson

Contributors: Skellefteå kommun, Skellefteå Kraft, Skellefteå Buss, SkeBo, Skellefteå Airport

Risks and mitigation

What are the key risks?

Cyber security, lack of establishing clear roles among stakeholders

What challenges are likely to arise during implementation?

Getting all different organizations on the same page

What are mitigating measures that are being put in place?

We are using different tools for establishing a common goal and concrete steps around existing visions and goals

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

No external funding so far, mainly in-kind

Solution maturity outputs

Number of concrete cases concerning mobility that utilizes digital infrastructure

City performance outcomes and impacts

The initiative should have a substantial impact on quality of life when fully implemented

Initiative charter Solution #2:
Local energy grid/system

Strategy

Description

A system where energy can be shared, transferred and generated within buildings and operations in the district/block using municipal or public infrastructure rather than private.
Note; energy can be transferred via for example electricity, heating and cooling

Link to vision

A sustainable place and a better everyday life

Link to ambition statement

Sustainable construction and exploitation of land

Renewable and green energy

Expected impact and timing

Enabling growth without (or less) need to increase energy use as energy can be shared between buildings and districts.

Piloted at Sara Kulturhus, expected to be further implemented at Campus Skellefteå, Arctic Center of Energy building (2022-2024)

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Stakeholders involved

Solution lead: Skellefteå kommun

Solution working team:

Ida Lindh

TBD (procurement processes, hiring staff)

Contributors:

Energy company/companies – municipal planning and regulatory agencies – housing companies/developers – private businesses/service providers

Risks and mitigation

What are the key risks?

The legislations of today hinder other entities than power companies selling energy

What challenges are likely to arise during implementation?

Implications of working with other price methods than kWh. Technical limitations and cooperation issues.

What are mitigating measures that are being put in place?

National work is being done

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Combination of municipal funds, private investors and possibly external funding (ERDF, Vinnova...)

Solution maturity outputs

TBD

City performance outcomes and impacts

Energy use

Initiative charter Solution #3:
Infrasystem culverts

Strategy

Description

Culverts connect different buildings underground, where all infrasystem connections are made. In the culverts the lines for power and communication, pipes for water, waste water/grey water, heating/cooling and similar run.

Link to vision

A sustainable place and a better everyday life

Link to ambition statement

Sustainable construction and exploitation of land

Renewable and green energy

Expected impact and timing

The solution has been evaluated and discussed in a workshop series ("sprint") and it has been decided that it is put on hold for now as a "standard solution" meaning it is not viable to use as a standard for new developments. Still encouraged on a case-by-case basis.

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Stakeholders involved

Solution lead: Skellefteå kommun

Solution working team: Skellefteå kommun, Skellefteå Kraft, developers

Contributors: Energy company/companies – municipal planning and regulatory agencies – housing companies/developers – private businesses/service providers

Risks and mitigation

What are the key risks?

Not financially viable at this time.

What challenges are likely to arise during implementation?

Division of costs are unfair (the original contractor takes the cost while the benefits are seen by others).

What are mitigating measures that are being put in place?

Possibly finding other business models

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

In general private funding connected to development of residential and industrial areas.

Solution maturity outputs

n/a

City performance outcomes and impacts

Energy use

Initiative charter Solution #4:
Urban cultivation

Strategy

Description

Making explicit room for urban cultivation in the remodeling of Anderstorg that utilizes energy, water and biowaste in a sustainable way.

Link to vision

A sustainable place and a better everyday life

Link to ambition statement

Sustainable construction and exploitation of land

Expected impact and timing

The solution has been evaluated and discussed in a “sprint”.

It has been given a lower priority at this time, but will be brought up again through Viable Cities/Climate neutral cities and the idea of a City Expo in 2026.

The European Commission's INTELLIGENT CITIES CHALLENGE

Stakeholders involved

Solution lead: Skellefteå kommun

Solution working team: Skellefteå kommun, non-profit organizations, developers

Contributors: Energy company/companies – municipal planning and regulatory agencies – housing companies/developers – private businesses/service providers

Risks and mitigation

What are the key risks?

Conflicts of interest regarding land use

What challenges are likely to arise during implementation?

Uncertainties in responsibilities

What are mitigating measures that are being put in place?

Collaborative workshops to find common interests and mutual trust

Inputs, outputs, outcomes and impacts

Source of funding and estimated cost

Private funding, cost depending on solution and location.

Solution maturity outputs

n/a

City performance outcomes and impacts

TBD

Key Performance indicators - overview

Solution	Activities – Inputs and actions	Solution Maturity - outputs	City performance – outcomes and impacts
SOLUTION #1: The multi-function parking complex – a hub in a modern society	• Target group analysis has been performed • Project team with representatives setup • Commercial model/models have developed	• EV carpool operator in place • Bike pool operator in place • Mobility app/platform	• % public transport use • % population within 10 mins walk of public transport access • Public transport frequencies • Public transport total capacity • % of shared transport modes
SOLUTION #5: The rolling bus shelter – autonomous shuttles	• Funding scheme(s) were identified • Pilot project funding application was submitted (and accepted) • Operator has been identified	• Autonomous vehicle identified • Route for shuttle programmed/scanned • Pilot testing started	• % public transport use • % population within 10 mins walk of public transport access • Public transport frequencies • % of multi-modal trips

Key Performance indicators - Cross cutting indicators

Cross cutting indicators

At the moment, there is nothing firm to present. Will be developed through Viable Cities / Climate Neutral Cities initative.

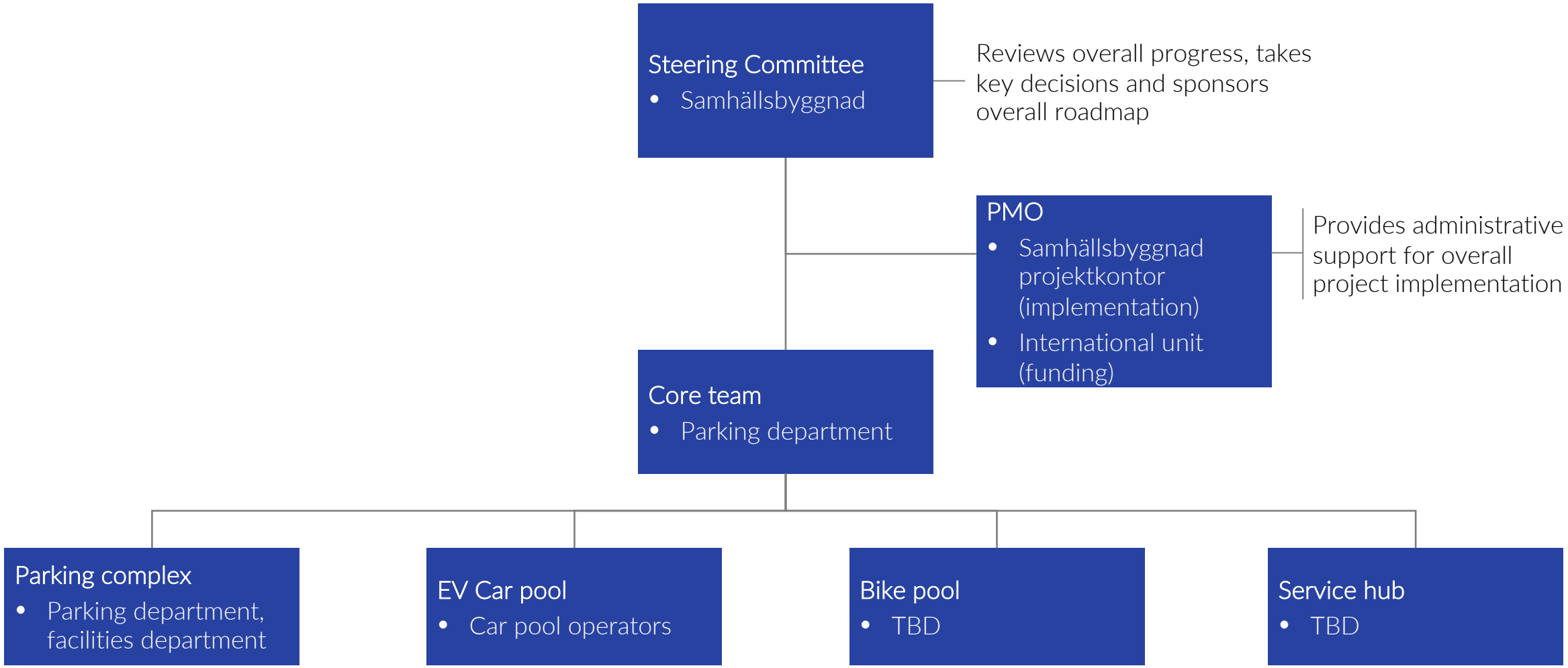
Rationale to KPI approach

It has been difficult to set good KPIs that are feasible (and relatively straightforward) to follow up, while still being relevant.

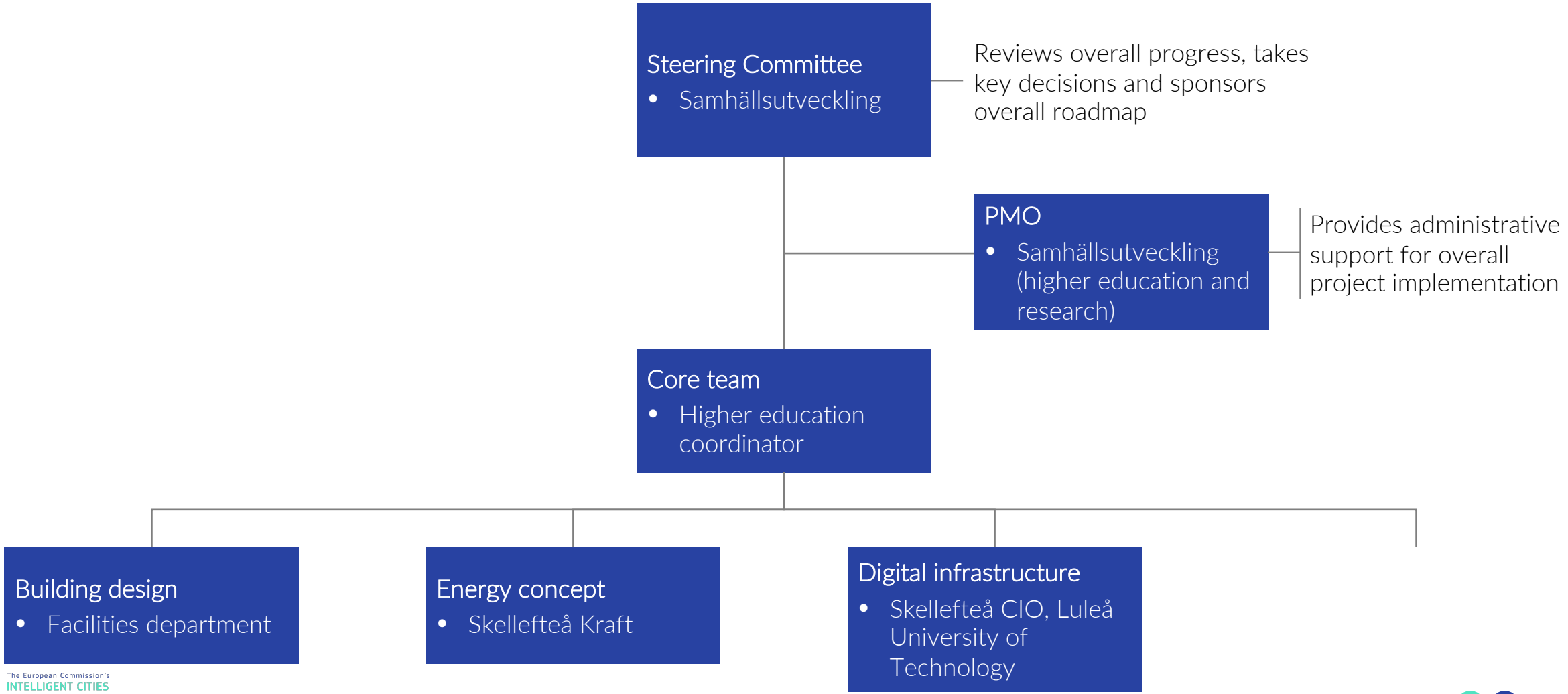
This is one area where the city should have asked for/needs more support from the ICC framework (experts and the community) - as a non profit organisation, there is little experience with working with KPIs in this kind of processes.

ICC City Lead Expert has been useful but with limited time and resources available it has not been possible to reach further at this time.

Governance structure for roadmap implementation: Solution #1 - The multi-function parking complex – a hub in a modern society



Governance structure for roadmap implementation: Solution #2: Local energy grid/system



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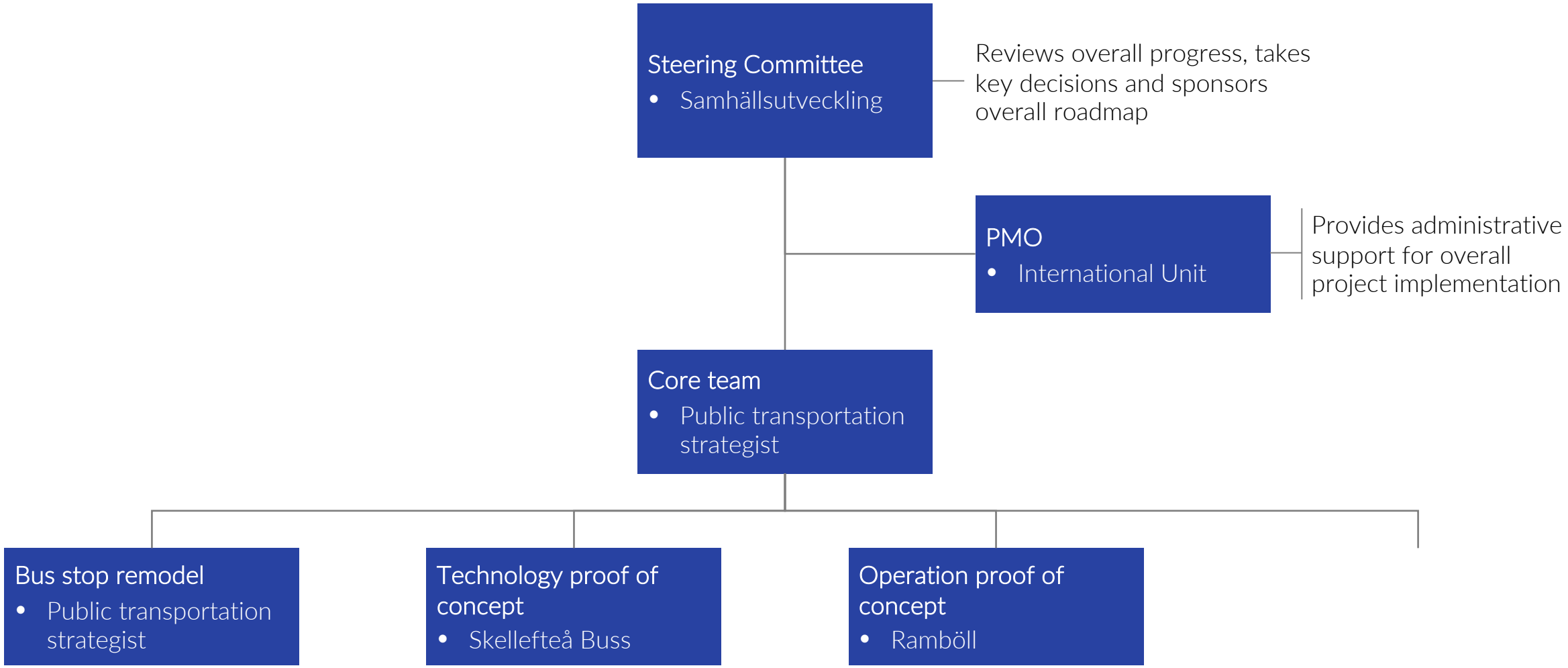
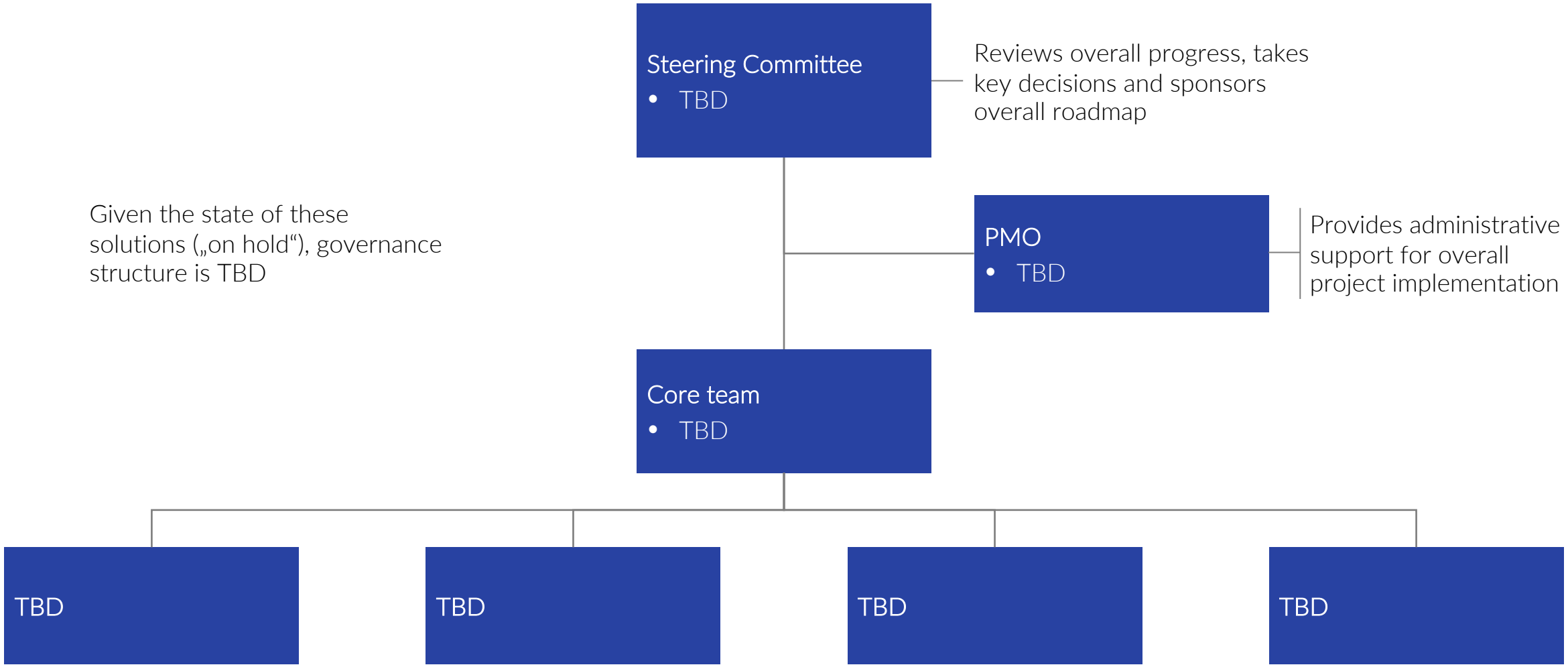
Governance structure for roadmap implementation: Solution #5: The rolling bus shelter – autonomous shuttles



Governance structure for roadmap implementation: Solutions #3-4:



Given the state of these solutions („on hold"), governance structure is TBD

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Section

3+4

Skellefteå: Impact

ICC Transformation

February 2021 to May 2021

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Impact executive summary

Through the city's efforts in ICC successful collaborations were set up with the different city ecosystems. The *Sustainable Skellefteå platform* enabled the city to perform 'sprints connected to ICC solutions' - workshops building new relationships and helping make progress with the proposed solutions, and their interactions. These newly built relationships will also help the city to tackle some of the obstacles encountered, in establishing viable business models for solutions and linking these to other ongoing developments in the city.

It turned out to be difficult to monitor the KPIs that were set. It might have helped to break them down into components, but a "qualitative" review showed that the city is moving towards the targets. It should also be emphasized that the ICC solutions all depend on (interactions wit) external actors in different ways - the city is not solely responsible for (and has no exclusive mandate over) the solutions.

However, it is very clear to the city of Skellefteå that – in order to meet current challenges and to cope with the ongoing developments, the city needs the entire society to support the required actions and commitments. For the upcoming three years, focus will be put on catching up with building homes for all the new citizens - which is connected to all five solutions that were worked on in the scope of the ICC project. The solution outlines and experiences will be used to feed into this focal point at all levels. What can be observed is that there is an even stronger market that two years ago (before ICC) and the city is confident that it can be a helping driver in the development.

Assessment of city performance - discussion

The KPIs that were put forwards were focused on mobility and public transport, since that is the area in which the city had most of its solutions and for which the city thought it would be easier to find data. However, the data collection is still not as advanced as planned and no regular data is available (yet).

Another reflection is that it takes time to create (and measure) impact, and the city has not been able to reach full impact during the (relatively) short project duration of ICC. Also, solutions that depend on changes in physical infrastructure, take time to implement – the city planning procedures are too slow to reach real implementation during the available time frame in ICC.

Assessment of solution maturity - discussion

Solutions have not progressed as quickly as thought/hoped/initially planned for. The guidance from the ICC project has helped the city to make the plans and set 'checkpoints' that are relevant and helpful.

For solution #1 "multi-function parking complex", contractors/builders are being contracted right now. The development of a digital platform for mobility is progressing, with the aid of ICC. There are now two carpool operators active in the city, one of them is a candidate for a mobility hub, and one of them is established in an existing parking garage that could possibly be converted into a hub.

For solution #2 "the rolling bus shelter", the city got stuck due to the fact that national funding is needed and the implications of performing changes in a state owned road. With a state owned road, any interventions needs to be in the national or regional plans – a lengthy process that the city can't dictate.

The KPIs that were set up are probably useful for measuring "success" – but it could have been meaningful to look for aspects that could have also helped reaching these KPIs: "What are the success factors?"

Assessment of city ecosystem and activities - discussion

No KPIs related to the city ecosystem were set.

However, the different city ecosystems have certainly been active throughout the city's ICC journey in different ways. Through the *Sustainable Skellefteå platform* 'sprints' connected to some solutions were organised: e.g., the infraculverts (as a systemic approach to prepare for energy communities and districts), where many parts of the ecosystem cooperated to increase knowledge about tis topic within the city. This resulted in the identification of the need to find better ways to set the business cases for those solutions. For the solutions mobility hubs / multi function parking complex, more progress was made (e.g., services such as electric carpools and shared micro mobility (scooters) have been implemented) and further developments are taking shape at the moment– but alignment with other developments is required now.

5 key lessons

Lesson	Reflections
1	Importance of common vision and goals
2	A functional system for cooperation - inside the municipal organization and outside
3	Explicit mandate and roles for stakeholders connected to the projects
4	Structures for prioritizing
5	Ensure that everybody is prepared to take in external advice and support

Reflections on city collaborations

Being inspired by other cities has been a positive experience in the ICC project. Several cities gave interesting perspectives and inputs – it is not obvious to give very specific / individual examples of inspiration, it is really the ”sum of all combined inputs” that is the real benefit of joining the ICC sessions.

It would have been much easier to deepen the relations and build further on the collaborations if the cities would have had the opportunity to meet in person. Overall, the digital format worked well, but it has its limitations and it cannot replace the valuable exchanges at the ”coffee-breaks” or ”before dinner-mingle”, where the real networking takes place.

Commitments

Commitments to on-going resources	Commitments to on-going collaboration	Commitments to on-going KPIs
Merge and capitalise upon the work from ICC into “Viable Cities” / “Climate Neutral Skellefteå 2030” Make sure “Sustainable Skellefteå” - when evolving - still has a supporting role for the ongoing/future ICC work	Re-use the ecosystems from ICC for “*Viable Cities*”	Revisions needed

3 Year plan - ambitions

Building on the ICC, what would will the city aim to achieve in 3 years time?	• Mobility hub(s) established • Pilot for “rolling bus shelter” • Local energy grid/district level in implementation
What steps will you take over the next 3 years to achieve these goals?	• Digital infrastructure for mobility will be further developed (as initiated under ICC) • New discussions with state/regional government about Road 95, bus stops etc., to provide a place for piloting of “rolling bus shelter” • Define The “Arctic Center of Energy”-building at Campus Skellefteå to use a local energy grid in some way

3 Year plan - targets

KPI	Category	What commitments will the city make to this end?
1	City Performance	Through our commitment in “Viable Cities” / “Climate Neutral Skellefteå 2030”, several tools will be developed to measure performance in different ways. Climate performance is the top priority.
2	City Performance	The mobility KPIs mentioned before should be refined and the digital platform for mobility initiated during ICC will be the city’s focal point to deliver this.
3	Solution maturity	Solution maturity KPIs developed in ICC will serve as a basis for giving these a “generic” nature so they can easily be re-used and if needed adopted for coming solutions
4	Activities & ecosystem	Based on the work in ICC the city will look at possible ecosystem KPIs, together with the ecosystem actors and stakeholders. Established network0 will be used for this, such as Sustainable Skellefteå