
Genoa 2050

Action Plan for
a Lighthouse City

Municipality of Genoa

Economic Development Department
Urban Agenda & Green Transition Office



COMUNE DI GENOVA



Genoa 2050

Action Plan

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1. Introduction

How will cities look like in 2050?

Overpopulated, polluted, islands of linear economy or will they be renewed, sustainable, inter-alia connected and with services affordable to everyone? Plenty of documents and reports released by the scientific authorities try to describe the future scenarios of the mega trends of our century such as the climate change, demographic change and the digital/technological transition and to calculate the medium-long term effects for local territorial realities. Equally important are the stimuli to invest in the incredible power of the human and environmental capital to build a symbiotic process to ingenerate a robust future prosperity. Today we can no longer afford to use the “learning-by-doing” methods, but it is necessary to develop a preventive knowledge, a proactive awareness and to courageously rethink models and processes of true sustainable innovation. In this perspective, every city, large, medium-sized or small, can make a difference and every single person can contribute to achieving a future by 2050 that leaves no one behind. If we consider, for example, the scenarios envisaged in the reports of the competent international agencies, they disclose that the average temperature of the atmosphere will continue to increase; precipitation regimes will be significantly transformed; the European population will decrease and will last longer while digital systems and infrastructures will determine the rise and fall of the cities’ positioning in the ability to provide services, to ensure prosperity at work,

to acquire skills in studying, caring, building solid relationships, etc. And Genoa? What is our city’s position between now and 2050 on these issues? At the end of 2019 it approved a strategic visioning document called “Genova Lighthouse City” where, questioning precisely on the topics covered and their impact dimension at the local level, it traced a participatory route focused on THREE clear work assets, THREE systemic goals and an implementation program based on 12 priority action areas described in this document. Genoa 2050 is an Action Plan, where the operational soul of the strategy is developed in a serious pathway made of anticipation and strengthening efforts on thematic focuses such as: innovating the planned land use, optimizing and renewing infrastructures, regenerating the urban fabric, creating multifunctional connections, investing in knowledge, innovative training, soft skills and improving the governance of the city system for the future generations. Furthermore, the current scenarios of prolonged and severe criticality caused by the coronavirus pandemic (COVID-19) effects further stimulated to deepen the preliminary study phases to properly consider the new and unexpected element of transformation, the one that in more technical terms it is called “gray rhino” or “black swan” according to our ability to forecast and consider it both as an implementation risk and as a new planning element. Finally, to measure effectiveness of the actions reported in this document, a particular attention was paid to



the monitoring and evaluation aspects of the interventions. This is an element that is not negligible and for which the same national and international authorities complain about a still too limited availability of knowledge in relation to most of the adaptation and transformation options already implemented. In absence of an univocal reference tool it has been developed, thanks to a research project, an innovative and flexible framework capable of expressing a quantitative

assessment of the asset resilience’s level already identified in the strategy document: infrastructures, environment and governance. Latter aspects brought back to the final goal of improving those qualities (liveability, inclusiveness, development, attractiveness, sustainability and well-being) which, as a whole, contribute to become a lighthouse city for present and future communities.

2. Legacy

The shared knowledge gained in the drafting phase of the Lighthouse Strategy represents a pivotal node that allows to better focus on both specific and systemic actions. The participatory and inclusive approach of the interested parties help to mainstream the preliminary work on the great trends of global change (climate, demographic, digital-technological transition) and to identify priority themes belonging to the three assets: the Innovative Development of Infrastructures, Networks and Communications (GREY Asset); the broad spectrum urban regeneration (GREEN Asset); the prosperous and sustainable development of the many communities and businesses (SOFT Asset). Then the municipality analysed and identified over 100 scenarios, their local impacts on which focus innovative actions for sustainable and resilient urban development in line with the international agendas, and to pay attention to in order to reach three fundamental objectives: innovation, anticipation and empowerment. Furthermore, the Action Plan is the operational instrument to put the strategic vision of a Lighthouse City on the ground, through the implementation of transverse or accurate actions. The main commitment is also to progress on 6 essential qualities:

Three working asset

01.
Innovative planning
of infrastructure

02.
Urban regeneration

03.
Community/
Enterprises

From the strategy to the Genoa 2050 Action plan

Three mega trends of change

01.
climate

02.
demographic

03.
digital-
technological

Three goals

01.
Innovation

02.
Anticipation

03.
Enhancement



- **Livability.** The livable city is a safe and healthy city, with the availability of satisfactory public spaces and green areas, good air quality and services
- **Development.** The city that wants to grow focuses on the development of the economic sectors and of its own society
- **Attractiveness.** The attractive city knows how to reach the trust of its citizens, people and businesses who choose it as a place to live, work, produce and study. But it also knows how to embrace visitors and tourists fascinated by its beauty and cultural heritage
- **Inclusiveness.** The resilient city is inclusive, offers equal opportunities for all and leaves no one behind and apply the DNSH principles in its choices
- **Sustainability.** The city that grows without compromising resources of the future (next) generations
- **Welfare.** The city that knows how to reach a good quality of life for its citizens and where it is pleasant and stimulating to move, spend time, enjoy the environment and the cultural heritage



3. Roadmap

Genoa 2050 Action Plan follows a nine-steps roadmap to improve local awareness, develop a sustainable perspective and transform the action of the public administration systemic and empathetic towards its many communities.

Some additional priorities have been identified by listening and analyzing the ground and pragmatic needs of the stakeholders community, the population, the indications and recommendations of the main international Agendas and commitments. They are summarised below:

- **Greater attention to the needs of the environmental, social and economic fabric in terms of simplifying and accelerating the activities of the Municipal Administration**
- **A different concept of vulnerability as an investment opportunity in research and development**
- **A different way to envisage the territorial vocation in terms of urban transformation and regeneration**
- **New stimuli to increase the green reputation of the city making it attractive for new population and investors**



The 9 Steps pathway towards a Lighthouse City



Improving knowledge basis on the needs of the territorial context



Promoting the Multilevel Governance approach



Strengthen ability to work in partnership



Preferably use an integrated approach whenever possible



Submit Sustainable Urban Development in all proposition



Guarantee coherency to the Goals of the International Agendas



Be fair and inclusive with the Internal and Functional Areas



Always enhance the Link between the Urban Territory and the Environment

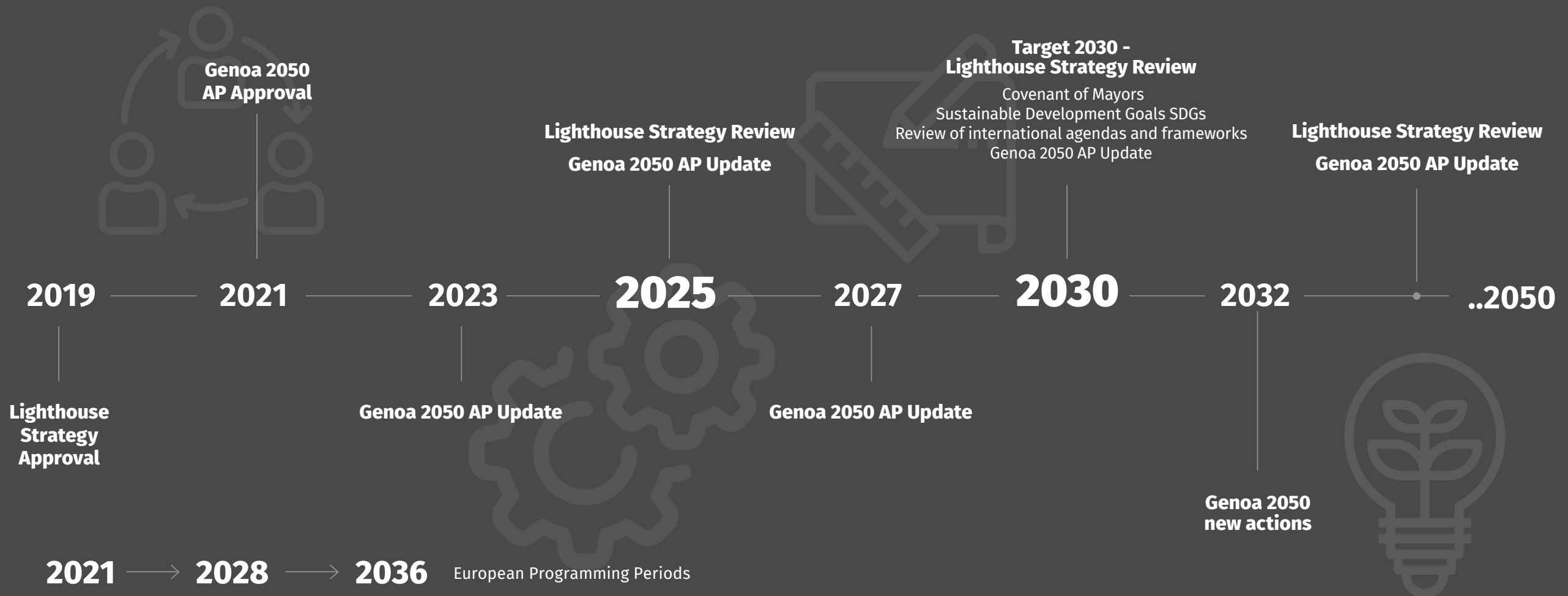


Better link and innovate the Civic Administration services

4. Timeline and Working method

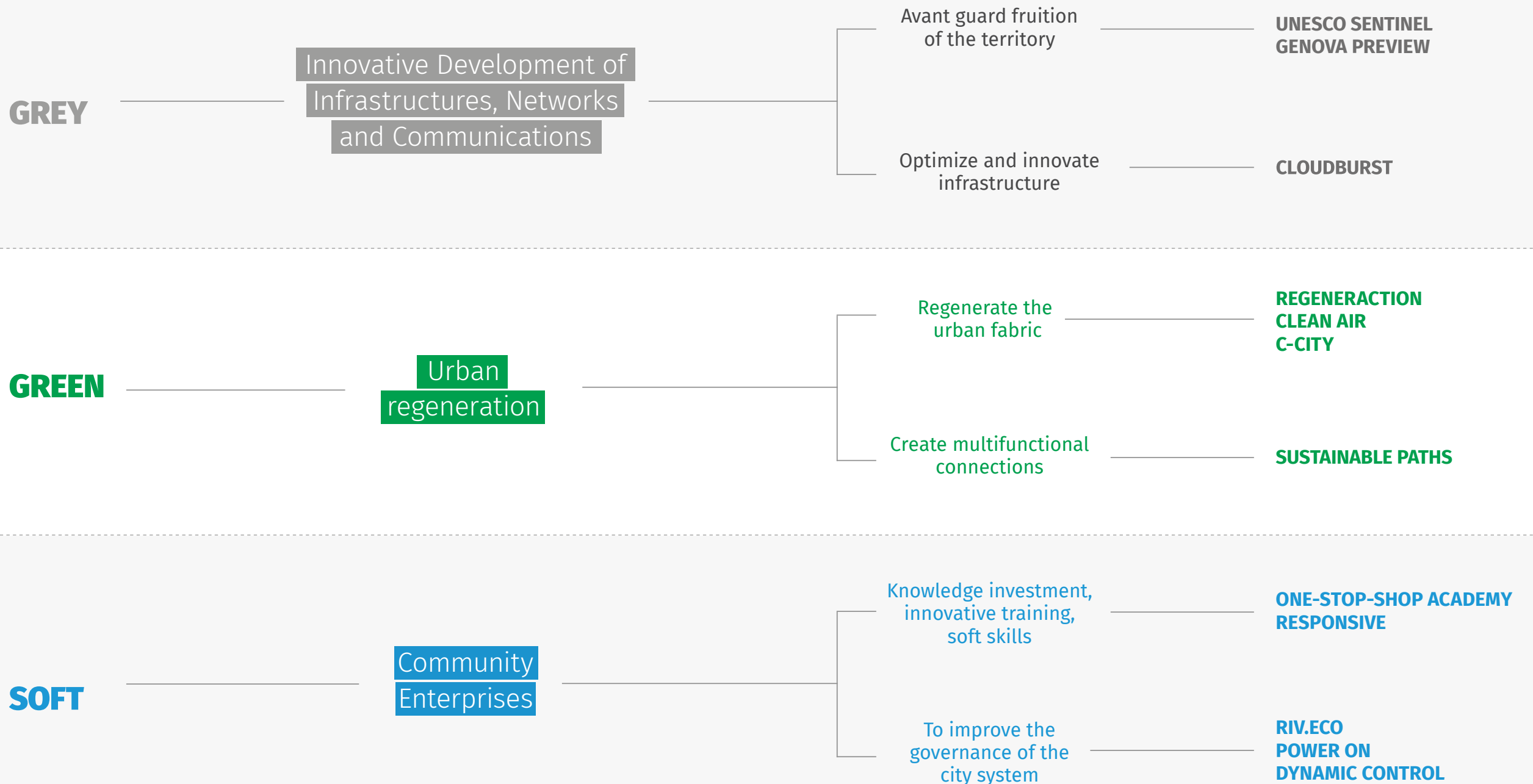
The proposed timeline is based on a systemic approach: firstly, it will be performed an innovative MONITORING and measuring impacts of the actions and initiatives already envisaged by the Institution in the planning documents of the city, in the Investments Plan (budget) and through multi-level collaborations and partnerships applying a resilience perspective. Secondly, NEW back casting ACTIONS are proposed in partnership with internal and external actors and in compliance with the studied scenarios.

The entire set of existing and newly conceived interventions will be enhanced and indexed in the measurement framework (see page 78). The Action Plan is reviewed every two and a half years to set the scene for new initiatives and interventions, while the strategy is updated every five years.



5. The core of Genoa 2050

The beating heart of the Genoa 2050 Action Plan is based on THREE assets, THREE pillars, SIX focuses and 12 actions which aim to achieve a better governance of the city system, to strengthen the urban fabric and to innovate the development of infrastructures, networks, services and communications. The assets indicated are in some cases the prevailing ones, in the detailed legend of the actions presented in the following pages, transverse and complementary links with the others are shown.



5. The core of Genoa 2050

The actions are framed as scopes of intervention and solutions propositions to the challenges posed by the local effects of the change scenarios.

In the detailed parts are indicated the:

- trends of climate, demographic and digital-technological change
- the belonging to a specific asset (GREY, GREEN, SOFT)
- implementation modalities (PROJECTS, TIME, PARTNERS)
- correspondence with the objectives of the Unique Planning Document of the Municipality (DUP)
- interpretation of specific reference scenarios
- possible benefits for the city, the objectives and results in the short, medium and long term
- coherences with Agendas, International and National Initiatives

The proposed actions and areas of intervention are based on the analysis of 108 possible scenarios and their severity of impact; among them 51 occurrences have been identified as the most affecting the Genoese territory. This preparatory activity allowed us to identify the intervention priorities suitable also of improvement thanks to the annual monitoring and biennial review activities. Finally, for each action the incidence of Covid19 is assessed both in terms of implementation risk and in terms of its rebooting system effectiveness regarding to new needs and stimulus for new planning of spaces and services for the protection of health and well-being, both individual and social.

Actions' contribution to the six qualities of the city

	Inclusiveness	sustainability	well-being	liveability	development	attractiveness
UNESCO SENTINEL		●			●	
GENOVA PREVIEW	●	●	●	●	●	●
CLOUDBURST		●		●		
REGENERATION	●	●	●	●	●	●
CLEAN AIR	●	●	●	●		●
C-CITY		●		●	●	●
SUSTAINABLE PATHS	●	●	●	●		●
ONE-STOP-SHOP ACADEMY	●	●	●		●	●
RESPONSIVE	●		●		●	●
RIV.ECO	●	●	●	●	●	●
POWER ON				●	●	●
DYNAMIC CONTROL				●	●	●

6. The 12 actions

- » **UNESCO SENTINEL**
- » **GENOVA PREVIEW**
- » **CLOUDBURST**
- » **REGENERATION**
- » **CLEAN AIR**
- » **C-CITY**
- » **SUSTAINABLE PATHS**
- » **RESPONSIVE**
- » **ONE-STOP-SHOP ACADEMY**
- » **RIV.ECO**
- » **POWER ON**
- » **DYNAMIC CONTROL**



Grey Asset

Key elements:

Rational and Innovative development of infrastructures, networks and communications

Primary themes:

Mapping, Conditions, Monitoring, Innovative Design

Actions

» **UNESCO SENTINEL**

» **GENOVA PREVIEW**

» **CLOUDBURST**



Number of projects



Partners



Source: Unique Programming Document (municipality)

Mega trends of change



01.
climate



02.
demographic



03.
digital-
technological

Goals

01.
Innovation



02.
Anticipation



contribution to the fight against Covid 19 relating to local and international initiatives

UNESCO Sentinel

Cultural heritage, prevention, satellite data, identity, innovation, monitoring

CONTEXT

The “Strade Nuove e il Sistema dei Palazzi dei Rolli” is the denomination of the Genoese site included, since 2006, in the UNESCO World Heritage Site. 42 renaissance and baroque residences are part of it as well as a complex and articulated system of 82 buildings and architectural waypoints well known by an international public. This recognition represents an element of great prestige for the city and involves the responsibility and the burden of fulfilling specific tasks of protection and enhancement of the cultural heritage.

FUTURE SCENARIOS

The expected rise in temperatures and the increase in the frequency of heat waves contributes to the possible acceleration of the natural degradation of the structures and construction materials of the city's architectural and cultural heritage.

ACTION

The main purpose is to acquire detailed information on the state of conservation of the city's architectural heritage, which is essential to be aware of their vulnerability to the effects of climate change, in order to ensure a lasting usability of the historical and cultural heritage for future generations. The extreme complexity of the built heritage of the historic city center, its peculiar urban structure and the regulatory restrictions placed to protect it, offer a starting point for innovative experimentation in the field of the latest and next generation technologies as a valid support to planning and programmatic processes of the cultural heritage.

TREND



Climate change
Predominant



Digital transition
Links



Demographic change
Links

ASSET

Grey

Predominant

Soft

Links

GOALS

Anticipation



FOCUS

Avant-garde fruition of the territory

CONTRIBUTION TO THE QUALITIES OF THE CITY

Sustainability, Development



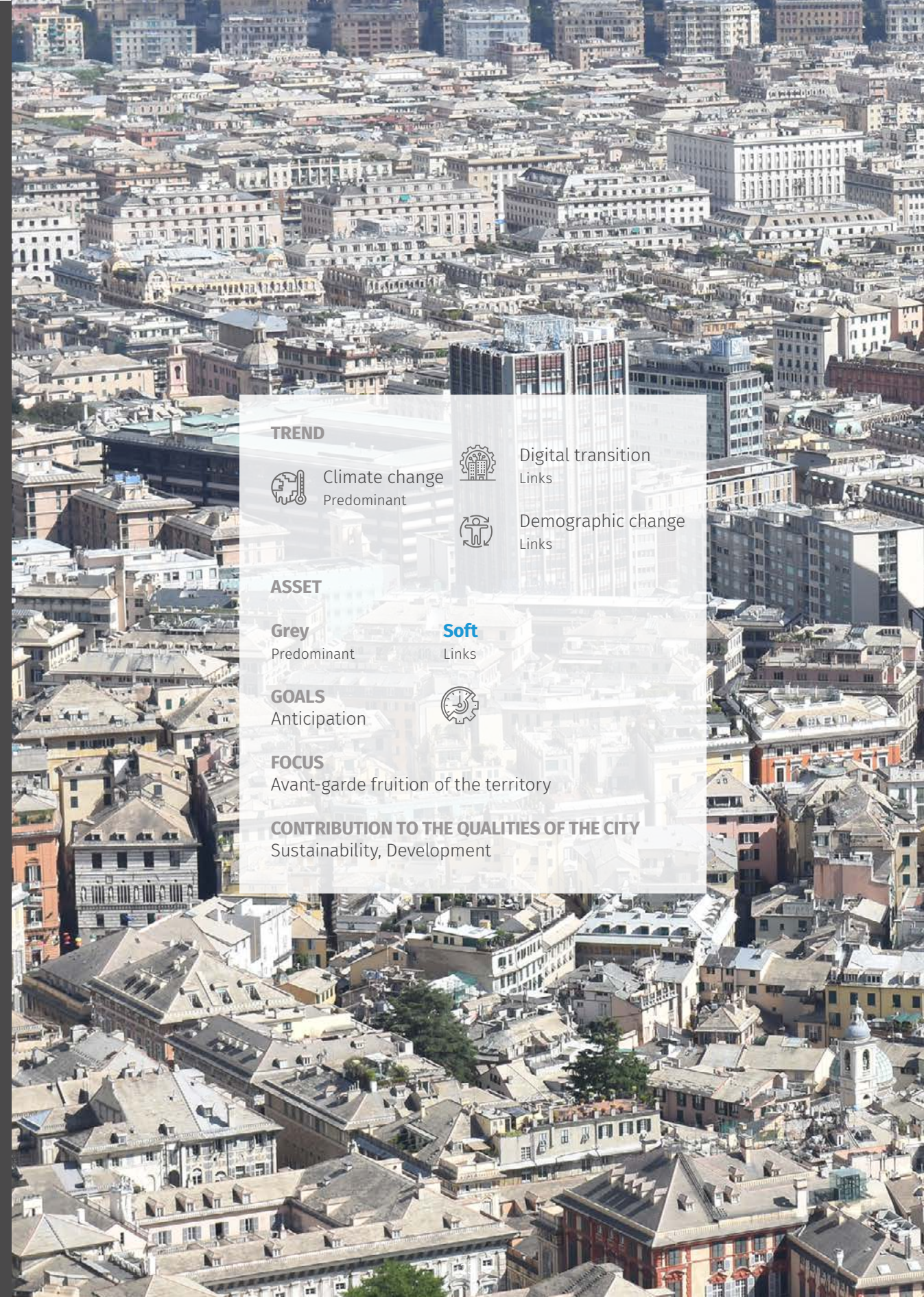
2 projects



6-8 partner



Unique Programming Document
(municipality)





Workplan - First Projects

In progress

- PIANO GESTIONE SITO UNESCO
- PROGETTO ROLLI-CHIESE

New proposals

BIG-EYE - Satellite mapping system of the conservation status of buildings and interoperable monitoring dashboard combined with proximity sensors for data collection and information on the effects of atmospheric pollution, intense rains and rising temperatures on the structures, decorations and architectural elements of the Palaces.

NET2PREV - Thematic participative roundtable with all the parties involved in the conservation of the site to choose and implement suitable and sustainable prevention and predictive actions in line with the Management Plan of the Genoese Unesco Site.

Timing (new proposals)

1-3 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda, Disaster Risk Management Plan Unesco, UNESCO Culture 2030

Next Generation EU, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan, Space Economy Strategic Plan

SECAP (Sustainable Energy and Climate Action Plan)

Output - short term

- Innovative infrastructure of the architectural heritage
- Collection and categorization of the information on the UNESCO Heritage's conservation state
- Elements to programming maintenance activities
- Periodic reports

Outcome - medium term

- Predictive maintenance elements on structures related to the expected climate change effects and the synergy with polluting elements
- Fruition program of the structures adequate to their state of conservation
- Sharing good practices at national and international level

Impact - long term

- Improvement of the conservation of the historical architectural heritage
- Sharing good practices at national and international level

Condivisione buone pratiche a livello internazionale

Benefits for the city

Improved competitiveness and contribution as a distinctive element of the cultural heritage conservation to the image of the city

Better positioning and visibility in the field of innovation technology

Visibility in relation to national and international networks on investments in the field and on adhesion to the upcoming international European policies
Increased attractiveness for researchers and investors in the sector



- Safety Spaces
- Risks awareness
- Infrastructure resilience

GENOVA preview

Interpretation, innovation, continuity management, gamification, sustainable tourism

CONTEXT

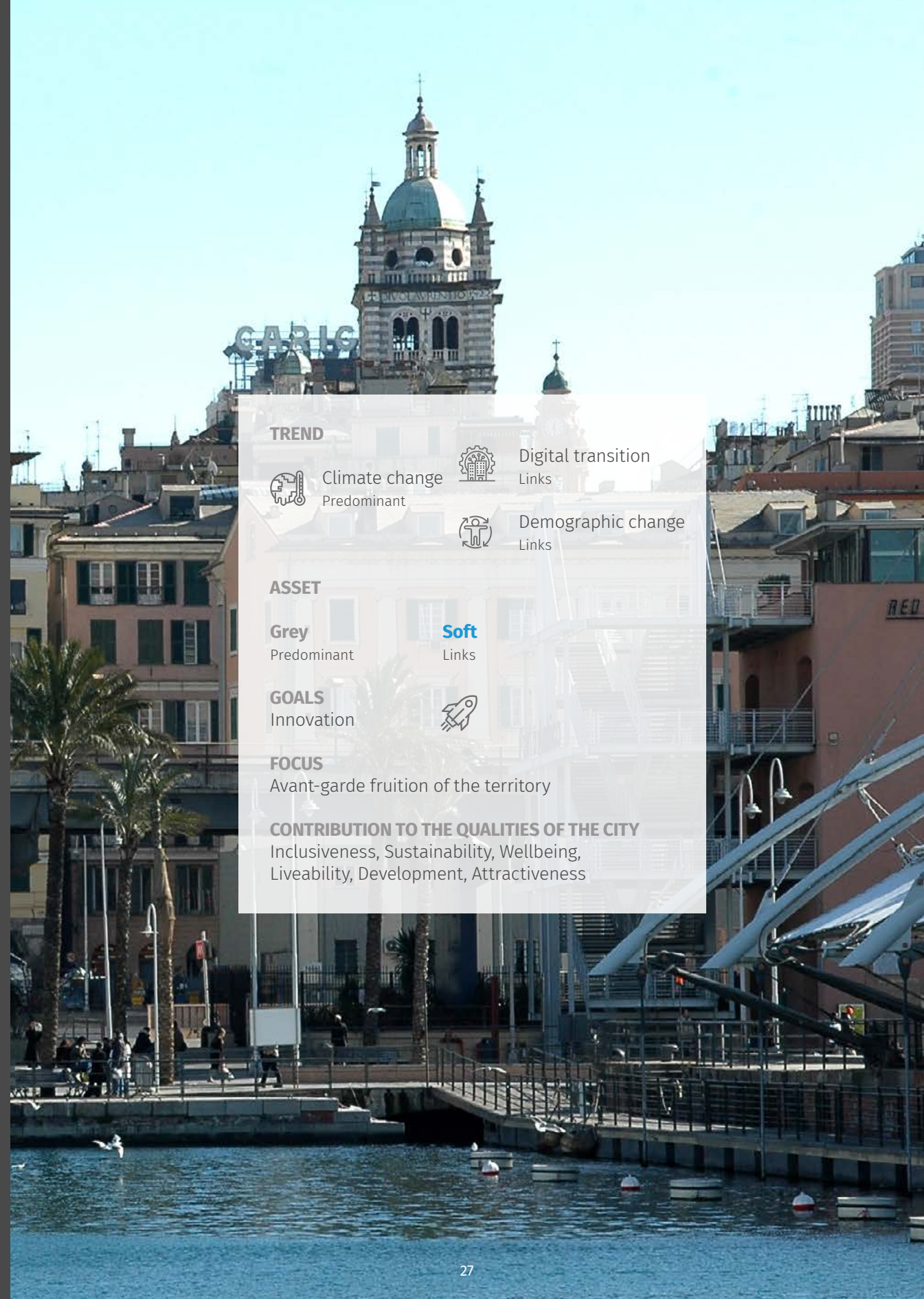
The topic about a different interpretation of the city's cultural, human and natural heritage and its future grow up more and more often with greater attention towards the sectors that foster new sustainable economic development models.

FUTURE SCENARIOS

The cultural heritage and the identity elements of the territory may show vulnerabilities linked to the different conditions and fruition, due to the effects of climate change respect the comfort parameters of the urban environment and the pressure of tourism with a different degree of exposure. The possibility to innovate the perspective and the interpretation of this heritage can benefit from the opportunities offered by the digital transition with a viewpoint to preserve and enhance places.

ACTION

The action develops a careful process of virtualization of the City's entire heritage, in order to make it livable in an unprecedented way. Always available, in the form of immersive preview and new forms of experiential visit, it connects the main attraction poles with other online intermediates and in situ. This offer will be enriched with different contents from the usual, suitable for the multi-generationality of users and visitors. The use of new technologies will transform, for example, the classic guided tour into a completely renewed one where elements such as bots and IOT, a gamified city with the possibility of roleplay, virtual and augmented reality will accompany people on an unusual journey that generates new memories every time. The action will help to keep the attendance of the city even when the sites should not be visited due to temporary restrictions (weather alerts, infrastructural break, safety or health requirements).



TREND

- Climate change
Predominant
- Digital transition
Links
- Demographic change
Links

ASSET

- Grey**
Predominant
- Soft**
Links

GOALS
Innovation

FOCUS
Avant-garde fruition of the territory

CONTRIBUTION TO THE QUALITIES OF THE CITY
Inclusiveness, Sustainability, Wellbeing, Liveability, Development, Attractiveness



2 projects



6 partners



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- PIANO GESTIONE SITO UNESCO
- PROGETTO ROLLI-CHIESE

New proposals

NEW WAVE - Systemic and renewed mapping of well and less known waypoints in terms of sustainability, experiences, customer satisfaction, availability, accessibility, related adaptive potential and alternative accommodating capacities.

ALL IN ONE - Creation of innovative, distributed itineraries, set up in the intermediate waypoints between one site visit and another for new multilingual and multigenerational HI-Tech services with immersive audiovisual supports, bot guides, multimedia supports, API for devices mobile, gaming and holographic tools. Last but not least, it will be released a complete adaptive virtualization of the visiting tour for online users through IoT, Bot, avatar etc.

Timing (new proposals)

2-5 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement,
The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter,
European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU,
EU Biodiversity strategy for 2030,
Green Deal, European Climate Pact

National Plan PNIEC, National Strategy
Adaptation to Climate change and future Plan

Output - short term

Study on the current tourist offer and how it is conveyed to the transient and resident public

Analysis of tourist flows, mapping of the intermediate stations between one site visit and another available for online and offset ICT setups

Feasibility study according to specifications by young companies or startups able to design immersive audiovisual supports, bot guide, multimedia support, APIs for mobile devices and holographic supports.

Cost-benefit analysis of the fruition offer innovation in relation to the effects of the Lighthouse trends and further perturbative elements

Outcome - medium term

Realization of the virtual fruition planning and a media promotion campaign

Customer evaluation through insights, visits, choice of characters and devices for immersive visit

Increase of visitors and distribution of cultural, museum and informative products

New services for the territory's interpretations

Impact - long term

Improvement of the visitor flows management towards a 360-degree fruition of the city in compliance with sustainability and demand diversification criteria

Improvement of the city positioning and contribution to its image as attraction for new forms of tourism, including web ones

Benefits for the city

A renewed model of territory's sustainable fruition

Contribution to the image of the city as a distinctive element for the renewed and absolutely innovative fruition of all its identity and cultural heritage

Increased attractiveness for researchers and investors in the sector

Leading positioning and attractiveness in the field of innovation technology

Visibility in relation to national and international networks on investments in the field and adherence to international European policies



- Safety Spaces
- Risks awareness
- Infrastructure resilience

CLOUDBurst

Climate change adaptation, prevention, strengthening, water resource

CONTEXT

Nowadays climate change is an issue that can no longer be postponed and is truly connected to those phenomena of weather extremes with which it occurs (extensive fires, droughts, floods, extreme meteorological events) and which cause losses of human life and huge economic damage for several assets and sectors.

FUTURE SCENARIOS

The availability and quality of the water resource is closely linked to the projections of the rainfall regime which foresee a reduction in annual quantities and, at the same time, an increase in the intensity and frequency of phenomena capable of causing sudden flooding, even in their less severe manifestations, with a possible increase in damage to service delivery infrastructures.

ACTION

The main objective of the action is to reduce the damage caused by intense meteorological events through the optimization and improvement of infrastructures devoted to the collection and outflow of rain and stormwater. It responds to two needs in particular: 1- contributing to the vulnerability analysis, it constitutes an element of knowledge useful for reducing the damage deriving from the effects of disaster or adverse meteorological events on the territory, their economical impacts on infrastructures and on the costs of restoring phase sustained by the public and private parties; 2- it promotes circular approaches for a rational use of the meteoric water resource which, accumulated where possible, can be used instead of drinking water for urban service uses and constitute a first step for the planning of duality in the city plants (in public properties).

TREND



Climate change
Predominant

ASSET

Grey

Predominant

Green

Links

GOALS

Anticipation



FOCUS

To optimize and renovate infrastructure

CONTRIBUTION TO THE QUALITIES OF THE CITY

Sustainability, Liveability



2 projects



4 partners



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- PIANO GESTIONE SITO UNESCO
- PROGETTO ROLLI-CHIESE

New proposals

WATER-NET - A dynamic GIS mapping on the effectiveness of the network for collecting and draining rainwater, according to the intensity of current and expected events and the presence of underground tanks suitable for their containment.

PERMA-LAND - Investigation on the public spaces soil permeability and their climate proofing capacities vs the impact of heavy rainfalls and implementation of green and nature-based measures. Reuse of water collected in tanks for urban service (i.e. gardening, road cleaning) in public spaces

Timing (new proposals)

3-6 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU, EU Biodiversity strategy for 2030, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

SECAP (Sustainable Energy and Climate Action Plan)

Output - short term

Mapping and detailed knowledge of the road network for the rainwater collection and outflow

Report on stormwater disposal's conditions and effectiveness

Report on the permeability's degree of the public spaces grounds and possible proposal of permeabilization measures (NBS) and the presence of hypogean tanks suitable for the collection of rainwater

Feasibility study on the reuse of water collected in tanks for urban service purposes in public spaces

Outcome - medium term

Progressive decrease in road and public space flooding as a result of activities undertaken thanks to the better knowledge of the pavements drainage systems and the collection network, outflow and disposal rainwater

Impact - long term

Prevention of road and public space flooding phenomena through the adaptive transformation of areas exposed to impacts due to the expected increase in the intensity and frequency of meteorological phenomena induced by climate change

Benefits for the city

Progressive decrease in economic damage due to flooding on road and public space

Improving the safety of public spaces

Rational use of the meteoric water resource



- Safety Spaces
- Risks awareness and analysis

Green Asset

Key elements:

Climate Change, Urban Regeneration

Primary themes:

**Adaptation, Prevention, Sustainable Development, SECAP
(Sustainable Energy & Climate Action Plan)**

Actions

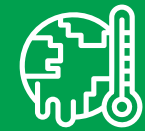
» **» REGENERATION**

» **» CLEAN AIR**

» **» C-CITY**

» **» SUSTAINABLE PATHS**

Mega trends of change



01.
climate



02.
demographic



03.
digital-
technological

Goals

01.
Innovation



Number of projects



Partners



Source: Unique Programming
Document (municipality)



contribution to the fight against
Covid 19 relating to local and
international initiatives



REGENERaction

Multifunctionality of spaces, innovation, climate-proof, quality of life

CONTEXT

Healthy, green and liveable cities in their urban spaces are vital needs of the inhabited area and contribute to the comfort of communities under different perspectives. The topic about the regeneration of urban public spaces, so close and dear to the people, is firmly linked to the needs of those who live, work or move in these spaces and those who must ensure their safety, conservation and functionality to decisively throw themselves into the most modern concept of sustainable urban environment.

FUTURE SCENARIOS

The main reports focus on the foreseeable increase in the frequency of heat waves in urban areas, on the variation in the rainfall regime as effects that more than others combined with the increase in the average age of the population could generate discomfort effects in living and enjoying urban spaces. The related cascading effects such as increased marginalization, gentrification, or a worsening of the healthiness of places can be mitigated by improving the quality and functionality of socialization spaces.

ACTION

This action proposes to regenerate neighborhood spaces at district level, not necessarily large, scattered throughout the Genoese territory. It is structured into preliminary studies and pilot experiments. In these spaces will be applied innovative planning criteria, synergistic measures to both mitigate pollution and adapt to climate change, aimed at promoting the improvement of the urban environment's quality, the increase of its residential and real estate value, the satisfaction and participation of the population as well as the neighborhood economic development. In terms of space redrawing, the action also intercepts the stimuli matured with the recent critical issues linked to the persistence of the pandemic and offers a positive perspective vision of territory reappropriation, also seeking and regenerating the small interstitial space of the city, often underused, which represents a resource of undisputed added value. service uses and constitute a first step for the planning of duality in the city plants (in public properties).



2 projects



6 partners



Unique Programming Document
(municipality)

TREND



Climate change
Predominant



Digital transition
Links



Demographic change
Links

ASSET

Green

Predominant

Soft

Links

GOALS

Innovation



FOCUS

To regenerate the urban fabric

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Sustainability, Wellbeing,
Liveability, Development, Attractiveness



Workplan - First Projects

In progress

- WATERFRONT DI LEVANTE
- SILOS HENNEBIQUE
- PROGETTO "CARUGGI"
- PARCO DEL PONTE E CERCHIO ROSSO
- PROGETTO EU UNALAB

New proposals

CAT2ADAPT - Pragmatic characterization method for public spaces in terms of climate resilience, multifunctional, social, economic and recreational abilities and release of a catalog of grey, green and soft measures suitable for the Genoese context that can enhance the adaptive transformational potential of spaces, promoting smart technologies where possible.

OPEN-DOORS - Identification of spaces, designs and experimentation pilots to regenerate firstly 10 city sites (gardens, squares, open spaces, etc.).

Timing (new proposals)

3-6 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU, EU Biodiversity strategy for 2030, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan SECAP (Sustainable Energy and Climate Action Plan)

Benefits for the city

Increase in available regenerated spaces

Strong renewal of multifunctional spaces, equipped with smart facilities, in accordance with possible spontaneous behavioral changes or requested to the population, which can count on a redrawn public heritage

Increased attractiveness of neighborhoods, real estate value and appeal for investor

Output - short term

Characterization method of urban spaces, unified on a local scale, with environmental, climate and social regeneration purposes

Set of environmental, climatic and social indicators, with relative baseline

Outcome - medium term

Urban planning based on specialized analyzes and carried out according to environmental and climatic sustainability criteria as well as social inclusion

Local monitoring database and with reliable historical series

Punctual improvement of the quality of the environment, climate and population well-being

Impact - long term

Planning of urban areas carried out according to environmental and climate resilience criteria, as well as social inclusion ones

Extensive monitoring database and with reliable historical series

Reticular improvement of the quality of the environment, climate and population well-being

Potential replication effects of good practice on an urban scale



- Social distance
- Safety Spaces
- Next Generation EU



Health, innovation, air quality, comfort of open spaces, attractiveness

CONTEXT

The topic about air quality and, in general, healthy urban environments, is a central one reflected in the international and European targets for 2030 and 2050. At the same time, also the awareness has improved from people and governance systems on a local scale. The choices that public administrations and each individual will make in relation to these scopes will play a primary role in the near future and will have a not negligible impact in the process of strengthening the trustworthy relationship with the Institutions, increasing the possibility of conserving population in the urban environments and to attract new one, favoring development and new sociality according to the sustainable city models.

FUTURE SCENARIOS

The combination of rising average temperatures and atmospheric pollutants describe a possible future escalation in the

cardio-respiratory diseases and allergic and/or asthmatic crises also in consideration of a possible increase in vulnerability due to the population urbanization and the growth of the average age.

ACTION

The main objectives are to stimulate attention and improve the offer of comfort areas with high air quality standards for their wider public use. Thanks to the systematic implementation of the future policy of the administration to reduce the emissions of pollutants in terms of mobility, tourism, productive processes, economic development and their sharing with stakeholders and civil society, it will favour the widespread adoption of virtuous behavior in daily activities (already target 2030 SECAP).



2 projects



4 partners



Unique Programming Document (municipality)

TREND



Climate change
Predominant



Digital transition
Links



Demographic change
Links

ASSET

Green

Predominant

Soft

Links

Grey

Links

GOALS

Innovation



FOCUS

To regenerate the urban fabric

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Sustainability, Wellbeing, Liveability, Attractiveness



Workplan - First Projects

In progress

- PROGETTO AER NOSTRUM
- PROGETTO CLIMATIONS CCM

New proposals

BREATH THE CITY - Realization of a mainstreaming mapping of policies, actions and interventions to improve the air quality parameters, pollen distributions, allergenic substances, humidity, temperature, pollution by fine dust. Innovative collecting data sources available from existing, experimental and satellite sensors to identify critical areas in terms of comfort parameters on which intervene with high priority.

AIRPATHS - Feasibility study, experimental projects, on site infrastructure and testing of an integrated Infrastructure as a Service (IaaS) system of low cost sensors in pilot sites, with API services for information and real-time alerting, plus the disposal of an integrated dynamic CLEANAir path network to help to reorient the users according to their needs.

Timing (new proposals)

1-3 years



Output - short term

- Distribution of a capillary network sensors on pilot areas
- Standardized analytical method for combining data from surveys on the ground with data from other sources
- Information service useful for citizens to stimulate a different fruition of the territory
- Distribution mapping of allergenic species and seasonality variations

Outcome - medium term

- Raising public awareness on the issue of quality air in the city
- Improvement in the fruition and distribution of spaces with high standards of comfort
- Better territorial maintenance against strongly allergenic species

Impact - long term

- New models of territorial fruition
- Growth of areas with high air quality standards

Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Next Generation EU, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

SECAP (Sustainable Energy and Climate Action Plan)

Benefits for the city

Better liveability of city neighborhoods

Attractiveness for new population and companies

Visibility in relation to national and international networks on investments in the field and adherence to European and international policies



- Safety Spaces
- Next Generation EU
- Risk awareness



Circular economy, resources, up-cycling, bioeconomy, sustainability, energy

CONTEXT

The topic about waste and its enhancement in a virtuous cycle of circular economy is essential for a community and an urban context that looks to the future in terms of sustainable development. The reduction of the carbon footprint is a requirement of the New Green deal, the new and next European regulations and of the international guidelines adopted by the Italian government. The economy of the future aims to be decarbonised. Many of the wide consumer materials, an economic bulwark of a few decades ago, are the subject of an effective request for replacement by the European institutions due to the cascade effects that do not spare, among other things, even the same sector of the economy and trade as in the case, for example, of the presence of microplastic derivatives in the seas with the consequent impact on the fishing sector, on the conservation and trade of food. Confirming the need to rethink the linear model of production and consumption, the pandemic crisis and the consequent massive use of materials that are not easy to work off, it shows the criticality of a conventional use of products with degradation times incompatible with the achievement of a significant reduction of waste and the “zero waste” goal.

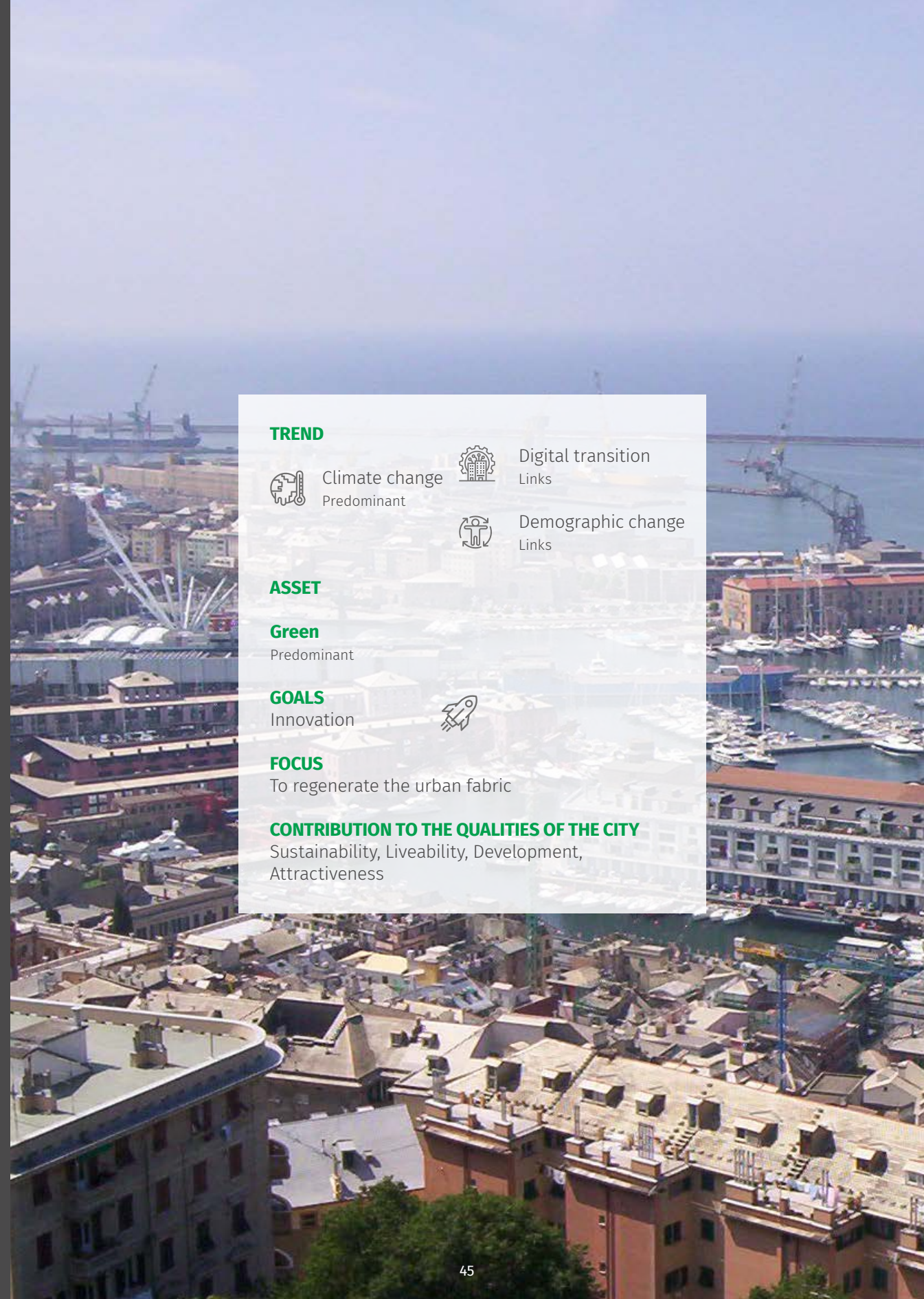
FUTURE SCENARIOS

The need to reduce the use of raw materials

and, therefore, to transform into a resource the different types of waste in urban areas, contributes to the containment of GHG emissions and consequently mitigates the effects of the expected rise in temperatures.

ACTION

The action responds to the willpower to improve the positioning of the city in the field of technological innovation applied to the green and bioeconomy sectors, in the circularity of the energy resource and the change of social paradigm from consumer to prosumer. Genoa, already a signer of the European Circular City Declaration and by virtue of partnerships and capitalized projects, will be able to benefit from the study and application of a new business model aimed at promoting prevention and up-cycling in the field of waste management, improving collection schemes, encouraging reuse, working on a neighborhood scale to favor social circularity and strengthening the stakeholder network. Moreover, in the field of bioeconomy the municipality would encourage the experimentation of converting some of the current production lines into new circular ones that will be able to intercept international funding applied to the issues of production processes’ sustainability and marketing of products and services. Finally, in the field of circularity and energy positivity, the city will experience the potential of energy communities on a neighborhood scale.



TREND

- Climate change
Predominant
- Digital transition
Links
- Demographic change
Links

ASSET

- Green
Predominant

GOALS

- Innovation

FOCUS

- To regenerate the urban fabric

CONTRIBUTION TO THE QUALITIES OF THE CITY

- Sustainability, Liveability, Development, Attractiveness



3 projects



5 partners



Unique Programming Document (municipality)



Workplan - First Projects

In progress

- SPORTELLI RIQUALIFICAZIONE ENERGETICA
- PROGETTO EU FORCE
- PROGETTI VINCITORI HACKATON BLUE
- OCEAN RACE - THE GRAND FINALE

New proposals

GC-CITY-STRATEGY - Release of a medium-long term genoese circular economy strategy.

CC-DISTRICT - Study and experimentation of a circular district, through the implementation of a Circular Hub and Laboratory of ideas, circular communities at district-scale including energy communities

NET2INNOVATE - Thematic roundtables for pilots activities on innovative experimentation on technological applications in the bioeconomy field, i.e. on packaging materials, Personal Protective Equipment and on the regenerative processes of concrete for the building sector.

Timing (new proposals)

2-5 years

FORCE@ActiveCells



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda, Circular Economy Action Plan

Next Generation EU, EU Biodiversity strategy for 2030, Green Deal, European Climate Pact, FARM TO FORK STRATEGY

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

SEA20

Benefits for the city

Positioning and visibility in the field of green innovation technology and carbon footprint reduction

Adhesion and coherence in relation to international and national policies on circular economy

Increased attractiveness for researchers and investors in the bioeconomy sector



- Protection of Employees
- Consumer safety
- Next Generation EU

Output - short term

Preliminary report on the city's circular economy initiatives

Development of a flexible circular economy strategy

Research and innovation projects on new sustainable and circular product chains

Identification and characterization of possible experimentation sites

Outcome - medium term

Implementation of new circular economy initiatives

Experimentation of a circular district (Circular Hub and laboratory of ideas)

Partnership agreements on experimentation activities on technologies in the bio-economy field

Impact - long term

Progressive decarbonization of the traditional economy

New green production and conversion activities of the companies' production lines in the sector during the period of economic crisis underlying the market demand's perturbations

SUSTAINABLE paths

Sustainable urban environment, light mobility, territorial identity, sociality, inclusion

CONTEXT

The urban territory with its arteries, secondary roads and communication paths from and to the suburbs, the functional areas, central or more ancient places, recalls the architecture of a complex and multi functional vascular system. Optimization of available spaces, a careful customization and the study of alternatives are the win-win strategy to avoid chasing changes, anticipating them. In this perspective lost or underused connections represent the ecosystem services that will allow us to re-connect to the urban fabric, improving its fruition and satisfaction in daily movements.

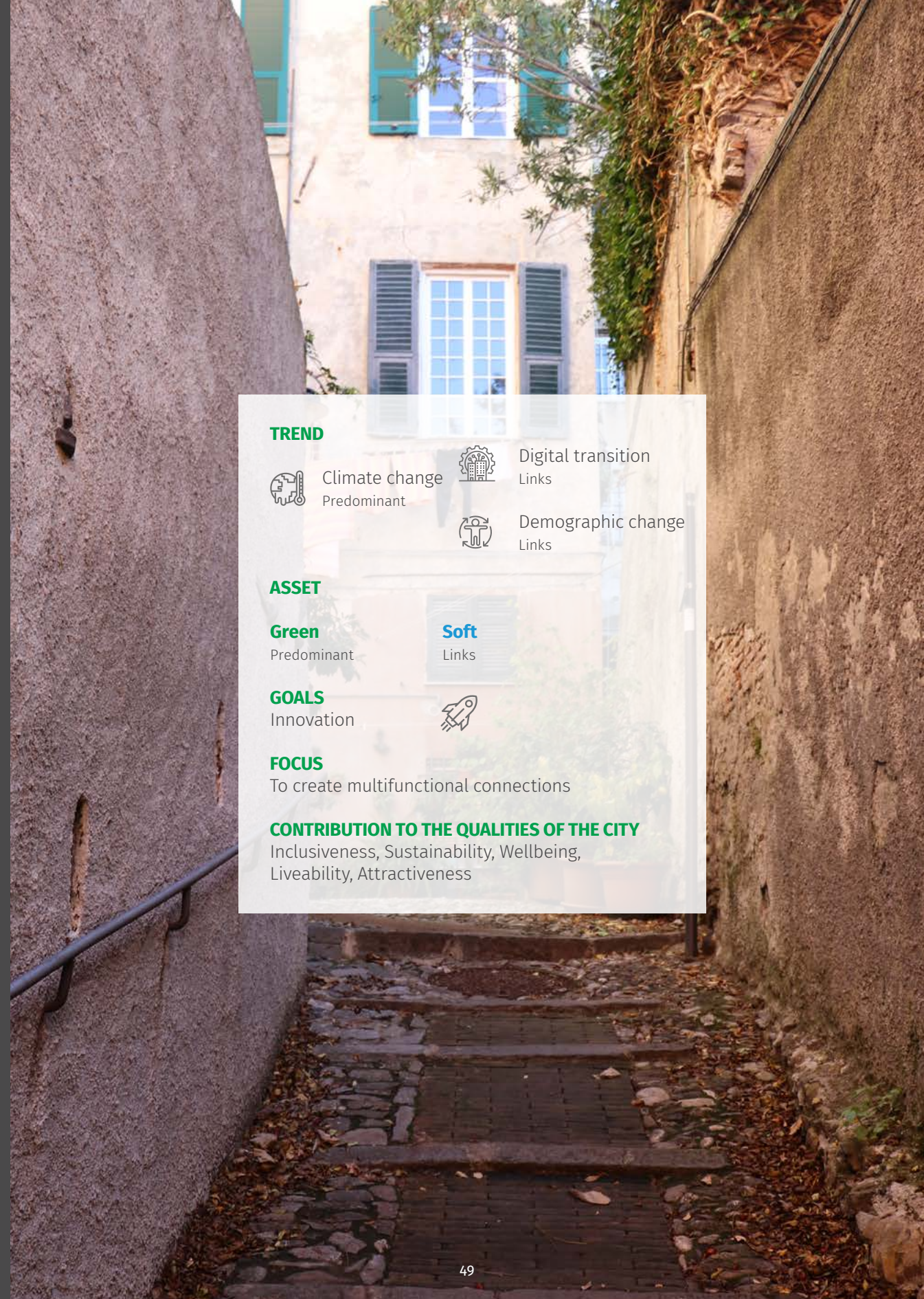
FUTURE SCENARIOS

It is widely recognized that climate change derives from an imbalance in the accumulated GHG emissions in the atmosphere. In terms of anthropogenic contribution to this phenomenon, mobility and transport have been thoroughly investigated and there are numerous incentivizing policies and actions for the progressive decarbonisation of the sector. In the near future the concept itself of mobility of people and goods in urban areas will be significantly transformed. In the local context a considerable increase in the demand for vehicles with low environmental impact is foreseeable, both

for public transport and for individual mobility, such as to satisfy the flexibility of use, the affordability, the practicality of use and a renewed attention to ecological aspects and a better quality of life.

ACTION

The proposed action is part of this process of change, integrating the interventions already put in place by the Administration with a new proposal of carbon free paths or corridors to be used as alternative connections to the circulation in and among the neighborhoods in the city. In all these studied and realized paths will be implemented a pilot site for sustainable urban mobility, slow, pedestrian, with green vehicles and diversified by type of use: free time; functional or tourist mobility, service and last mile delivery. The process to create connection paths for active and smart mobility on a neighborhood and urban scale will count on the use of innovative “on-hand” technologies through which people can be encouraged to use these new paths. In this way it will be possible to act, in the medium term, on the neighborhood economy, road safety linked to the separate use of streets and, at the same time, the spaces of the pilot sites will be made more pleasant and liveable, facing in an alternative way the effects of climate change and city pollution.



TREND

- Climate change
Predominant
- Digital transition
Links
- Demographic change
Links

ASSET

- Green
Predominant
- Soft
Links

GOALS

- Innovation

FOCUS

To create multifunctional connections

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Sustainability, Wellbeing, Liveability, Attractiveness



2 projects



6 partners



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- MIMOTO
- SMART MOVE
- ELVITEN
- SISTEMA DEI FORTI
- CABINOVIA PORTO ANTICO - FORTE BEGATO (in previsione)
- PARCO DEL POLCEVERA E CERCHIO ROSSO (in previsione)

New proposals

PIT-STOP - Thematic Mapping and characterization of the different types of mobility, existing functional connections and identification of new linkages using the secondary road network, "creuses", paths, brick roads, squares and urban parks as multifunctional ecosystemic services.

NEW ROUTES - Development of multimodal system aimed at conveying useful and customised information: air quality parameters, temperature, humidity and attractive elements for their fruition, i.e. reduction of traffic noise, incentives for the use of green vehicles, service facilities if pedestrianized, ongoing promotions in the area. Initial pilot experimentation in 10 sites of sustainable re-connection paths.

Timing (new proposals)

1-4 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Next Generation EU, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

SUMP - Sustainable Urban Mobility Plan (Metropolitan City of Genoa)

Benefits for the city

Increase of available regenerated spaces for usability and alternative shifts

New connections in the territory, between the usual and less known areas, multifunctional, in line to the possible spontaneous behavioral changes or requested to the population

Increased attractiveness of urban and peri-urban neighborhoods, their real estate value and destination of interest for residential renovation tourism (staycation

Output - short term

Analysis and characterization of alternative and complementary connection possibilities to the existing one

Mapping of planning opportunities considering the supply and demand also of the peri-urban areas

Outcome - medium term

Implementation of new circular economy initiatives

Experimentation of a circular district (Circular Hub and laboratory of ideas)

Partnership agreements on experimentation activities on technologies in the bio-economy field

Impact - long term

Progressive decarbonization of the traditional economy

New green production and conversion activities of the companies' production lines in the sector during the period of economic crisis underlying the market demand's perturbations



- Social distance
- Safety Spaces
- Next Generation EU

Soft Asset

Key elements:

Economic Impacts, Community / Enterprises

Primary themes:

(Analysis) Vulnerability, (Analysis) costs / benefits, Information / fruition tool, Resilient Community, Welfare and related measures, Integrated planning, Actions for socio-economic fabric, Organizational resilience

Actions

» **ONE-STOP-SHOP ACADEMY**

» **RESPONSIVE**

» **RIV.ECO**

» **POWER ON**

» **DYNAMIC CONTROL**



Number of projects

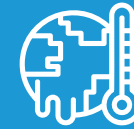


Partners



Source: Unique Programming Document (municipality)

Mega trends of change



01.
climate



02.
demographic



03.
digital-
technological

Goals

02.
Anticipation



03.
Enhancement



contribution to the fight against Covid 19 relating to local and international initiatives

ONE-STOP-SHOPacademy

Innovation, future, soft skills, sustainability, transition, empowering, capacity building

CONTEXT

The question about possible futures has always accompanied the collective imagination and stimulated debates from experts and numerous works by writers and directors. The language with which science expresses itself towards the political, decision-making class and the business world can sometimes generate a certain resistance, shyness and uncertainty regarding the interpretation of the phenomena dealt with and, therefore, not enable in the most effective way the path of homogeneous and necessary transformation to anticipate the future effects of the changes induced by the great trends of this century.

To act in a systematic way it is necessary to share the understanding of a common baseline of knowledge, to make a change in the decision-making and negotiation processes, to invest in new skills on services planning and to achieve greater cohesion between the different areas of the administration, the socio-economic fabric of the city and the different stakeholders.

FUTURE SCENARIOS

The availability of innovative technologies,

data, new abilities for analyzing and interpreting phenomena will offer the possibility of facing issues related to the progressive urbanization of the population, its predictable aging and the variability of the effects due to climate change in a more effective and functional way.

ACTION

The action arises from the need to release an innovative service and at the same time has the ambitious goal to create a virtual and real place to discuss and contribute to design sustainable futures.

It proposes an investment in innovation and in the enhancement of the skills of administrations, their networks of stakeholders, entrepreneurs, business communities, civil society and, more generally, individuals to foster new models of sustainable behavior, both in the urban fabric (environmental, social and economic) and in the governance processes and its application tools.

This renewed ability will have a positive impact on performance and future planning, maximizing the many skills and excellence already present with other innovative ones, thus guaranteeing greater reactivity and proactivity in a dynamic and attractive reality.

TREND



Digital transition
Predominant



Climate change
Links



Demographic change
Links

ASSET

Soft

Predominant

Green

Links

Grey

Links

GOALS

Enhancement



FOCUS

To invest in knowledge, innovative training, soft skills

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Wellbeing, Development



2 projects



3-5 partners



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- SCUOLA DI AMMINISTRAZIONE
- ERZELLI GREAT CAMPUS
- SMARTER ITALY

New proposals

HUB&LAB - Thematic networking with research and innovation institutions in the macro-sectors: health, environment, economy and services to set up a knowledge HUB and promote a laboratory of ideas for new projects in a participatory perspective.

SYNTO-SAPIENS - Design of a one-stop-shop platform of useful services to improve soft skills on cross-sectoral development issues in relation to the global trends and their local transformation starting points for different destinataries: decision makers of institutions and administrations, professional orders, school and research, business, young graduated students, associations and, more generally, civil society.

Timing (new proposals)

1-3 years

Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU, EU Biodiversity strategy for 2030, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

Benefits for the city

Strengthening the skills present in the administrative, technical, decision-making structure in relation to new needs

City positioning improvement, public administration more reactive and competitive, less resistant to change

Strengthening of the city fabric in terms of investments in soft skills, competitiveness, flexibility to the change induced by mega trends

Contribution to the image of a city that is renewing itself, opportunities for synergy between institutions, companies and start-up

Visibility in relation to the national and international networks regarding adhesion to upcoming international European policies



- Risk awareness
- Soft skills investment
- Social and economic impacts
- Next Generation EU

Output - short term

Collaborations with dedicated subjects to find innovative elements of knowledge to be included in the custom platform for diversified users

Structuring of the one-stop-shop academy, the content catalog available to staff and users, always updated testing of innovative service delivery methods

Outcome - medium term

To contribute to a more accurate information on the issues of change Improvement in personnel skills, greater interest and proactiveness of the various desinatory structures

Greater cohesion in the different areas of the administration and of the stakeholders who use the platform

Improvement in the ability to plan local actions

Impact - long term

Adequate knowledge and skills to anticipate the effects of changes of the Lighthouse trends and other disturbing elements

Renewal and strengthening of relations with international expert groups on new systemic and integrated projects

New partnership models to facilitate fundraising activities

RESPONSIVE

Competitiveness, attractiveness, governance, future generations, specialization, excellence, quality

CONTEXT

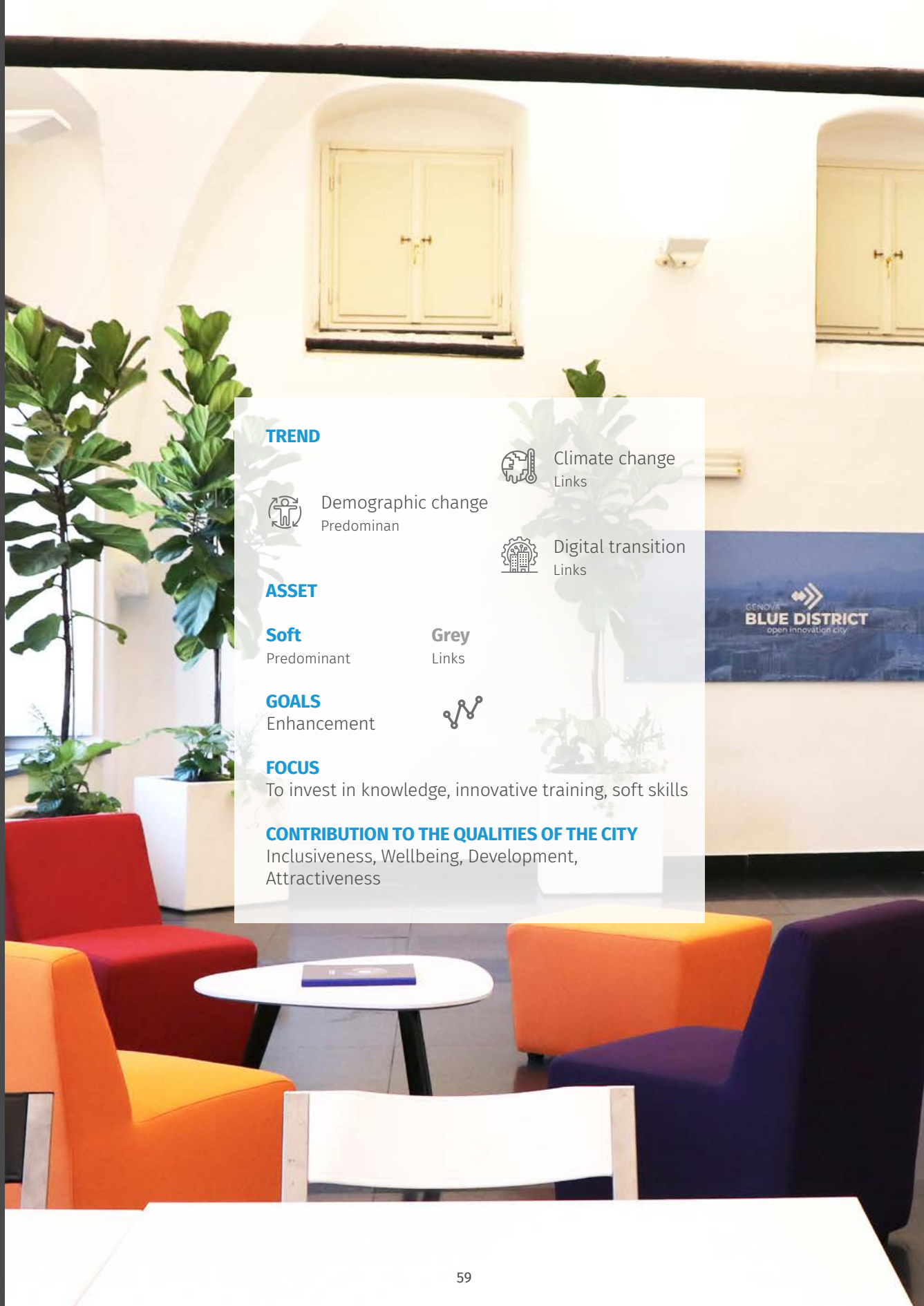
Until now the choice related to a service by a customer has mostly depended on guaranteed promises of reliability and affordability that meet specific needs. In general, these aspects cannot continue to determine the success of an offer if they are not accompanied by the new demands for flexibility, sustainability, freshness and solidity necessary to deal with endogenous changes and market variations in the near future. To ensure continuity and prosperity to the dimension of the skills present in the socio-economic fabric of the territory and to improve the attractiveness of the city it becomes a priority to examine the current business models with a view to enhance and gain innovative configurations that are more aligned with the global and local demand transformations.

FUTURE SCENARIOS

Climate Change, Demographic Change and Digital / Technological Transition foresee such a variety of possible impacts that will be reflected in the need to adopt sustainable economic models and governance systems adequate to interpret them effectively and to encourage the development of new professional skills.

ACTION

It responds both to the need to acquire the necessary skills in emerging professions to guarantee investment in innovative sectors and to keep alive the high professionalism recognized in the identity fields of the city. The pillars of the action are the measures and criteria that can foster a rooting of skills useful for consolidating the offer of increasingly qualified services and professionalism, developing new forms of entrepreneurship capable of improving the positioning of the city and its socio-economic fabric, achieving the requalification or reconversion of those skills with a more transient and therefore more vulnerable character, favoring eco-loyalty mechanisms and investments in sustainable finance such as to support changes in the economy of scale. Furthermore, a virtuous mechanism of insertion into the workplace would guarantee an increase in the reputation and attractiveness of the city, supported by favorable economic conditions and quality of life for the introduction of a prosperous productive population.



TREND



Demographic change
Predominant



Climate change
Links



Digital transition
Links

ASSET

Soft

Predominant

Grey

Links

GOALS

Enhancement



FOCUS

To invest in knowledge, innovative training, soft skills

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Wellbeing, Development, Attractiveness

GENOVA
BLUE DISTRICT
open innovation city



2 projects



6 partner



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- CITY BUSINESS UNIT
- PROGETTO EU HUB-IN
- GENOVA BLUE DISTRICT
- PIATTAFORMA PER LE POLITICHE DEL LAVORO (PON METRO GE11.1.m)

New proposals

BUSINESS HUMAN CAPITAL - Capitalization and strengthening of innovative territorial projects, with a strong push towards internationalization and the potential for economic development in relation to the prospects set in the 2030 and 2050 targets.

BEYOND - Accompanying measures to speed up business creation and innovation to mitigate the mismatch in skills and supporting emerging professionalism for future generations.

Timing (new proposals)

1-3 years



ENHANCEMENT

Output - short term
Useful skills for strengthening the economic fabric in relation to the changing trends

Capitalization of business acceleration and innovation measures in the various sectors

Outcome - medium term
Less time off the market due to high technical professionalism

Better attractiveness for the productive segment to remain in a renewing context, more reactive and competitive, less resistant to change

Ability to convert skills in relation to new market needs

Impact - long term
Robust policy ability to anticipate potential variation of market demands

Networking to encourage skills and experience recovery measures through experiments with companies

Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement, The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter, European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU, EU Biodiversity strategy for 2030, Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to Climate change and future Plan

Benefits for the city

Improvement of the city positioning and its socio-economic fabric

Investment in emerging professional figures without forgetting the multifaceted excellence of the technical and professionals identitarian ones in the various sectors

Improvement of policies ensuring better attractiveness for the productive segment to remain in a context that renews itself, more reactive and organic compared to the new needs of supply and demand

Contribution to the planning of new services



- Risk awareness
- Soft skills investment



Simplification, updating, anticipation, robustness and flexibility, regulation

CONTEXT

The ability of an administration to prevent and intervene on the effects of global changes at the local level can improve in terms of innovation, promptness and effectiveness if it is accompanied by a progressive transformation of the rules that enable its action anticipating, where possible, the related impacts of the early future scenarios.

For example, climate change effects recorded with a higher frequency of occurrences and intensity respect to the past, show that the conventional way of working or to put in place interventions may no longer be effective and even can be recidivist. In this sense, the European Commission itself stimulates all levels of government to adopt adaptation measures (green and blue, grey and soft) that are effective in guaranteeing the robustness of urban transformation processes in its human, environmental and economic ecosystem.

FUTURE SCENARIOS

The projections of a progressive reduction of GHG emissions necessary to contain the effects of climate change by the end of the century can find valid support in the

revision of the international, national and local normative apparatus and Regulatory Framework, which acts as an enabling factor for achieving sustainable urban transformation in the medium term vision.

ACTION

The action aims to revise some municipal regulations to identify opportunities for updating and improvement and to favor the processes of urban transformation and regeneration that are more in line with the recommendations of international agreements which, very often, coincide with the needs represented locally by the stakeholders of the municipality (see Lighthouse strategy). Improvements will be investigated and proposed. They will be able to mitigate, i.e. the damage caused by the effects of severe storms, preventing the risk of fires and urban heat island phenomena, planning a rational use of the meteoric water resource and its substitute use of drinking water for service purposes (street washing, irrigation, urban decoration), to manage waste according to the principles of circular economy and to use green adaptive measures in the regeneration of urban spaces.



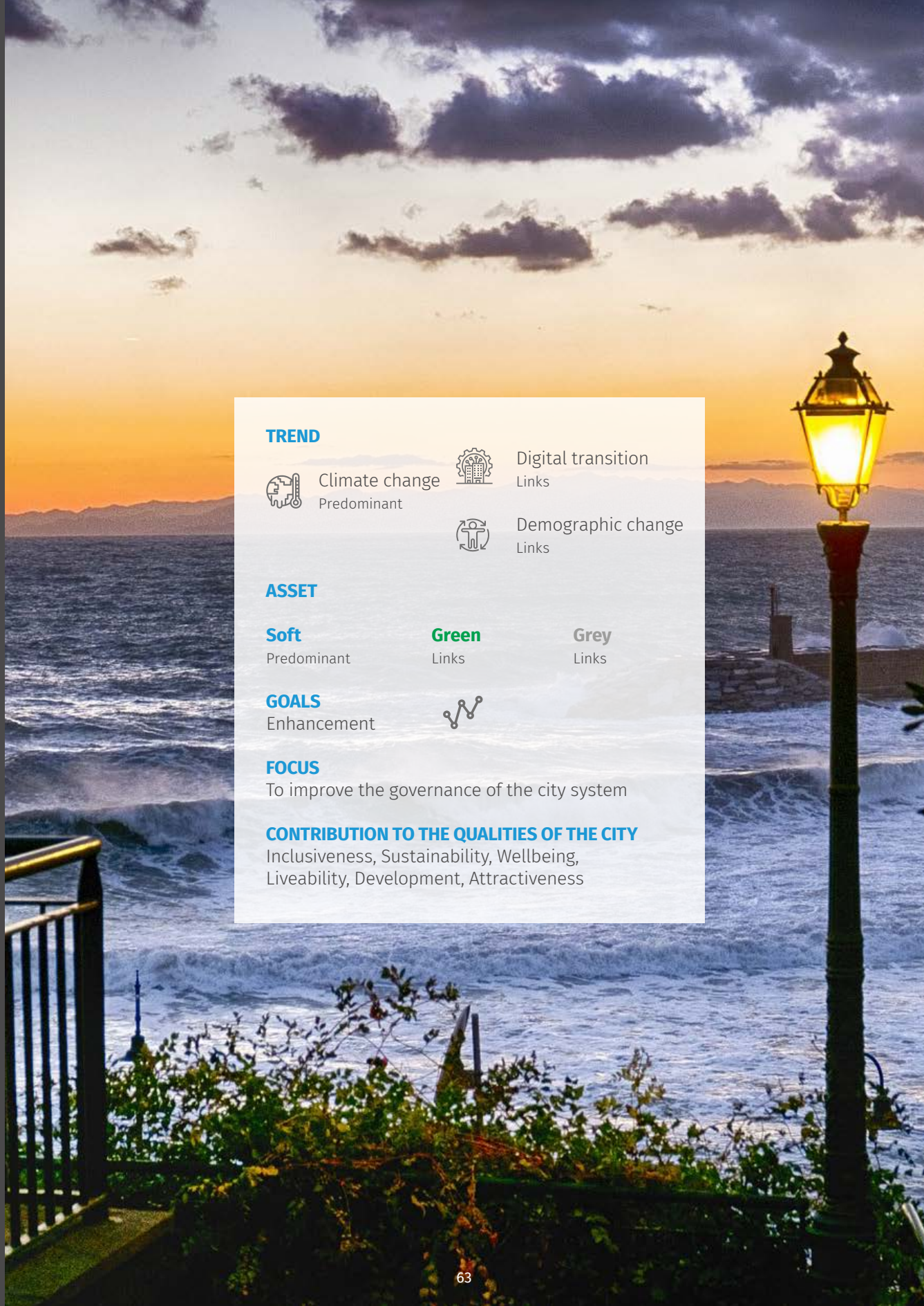
2 projects



3 partners



Unique Programming Document (municipality)



TREND



Climate change
Predominant



Digital transition
Links



Demographic change
Links

ASSET

Soft

Predominant

Green

Links

Grey

Links

GOALS

Enhancement



FOCUS

To improve the governance of the city system

CONTRIBUTION TO THE QUALITIES OF THE CITY

Inclusiveness, Sustainability, Wellbeing, Liveability, Development, Attractiveness



Workplan - First Projects

New proposals

FAST-CHECK - Recognition and identification of the regulations suitable for possible innovations adhering to the requests of the international agendas (in accordance with the regional and national regulations actually in force).

IMPROVE - Review of 6 municipal regulations, followed by 10 others, enhancing the renewal process already started by the Institution with a green perspective on the issues of public and private building industry and energy efficiency. Proposed changes in agreement with internal structures, multi-level governance subjects and stakeholders.

Timing (new proposals)

1-3 years



ENHANCEMENT

Output - short term
 Analysis and reporting of 6 regulations
 Proposal of suggestions for variations

Outcome - medium term
 Evaluation of the updates of the first 6 regulations
 Analysis and reporting of 10 additional regulations
 Proposals and suggestions for variations

Impact - long term
 Evaluation of the updates implemented in the first 6 regulations
 Evaluation of the updates implemented in the 10 additional regulations

Coherency to Agendas, international, national and local Initiatives

Sendai Framework, Paris Agreement,
 The 2030 Agenda for Sustainable Development

Urban Agenda for the EU, New Leipzig Charter,
 European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU,
 EU Biodiversity strategy for 2030,
 Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation
 to Climate change and future Plan

Benefits for the city

Better adherence to the need for simplification of the administrative processes

Renewed capacity for planning and investment (fundraising) in territorial sustainable project



- Safety Spaces
- Risks awareness and analysis
- New measures

POWERon

Prevention, innovative processes, business continuity, empowering, governance

CONTEXT

Climate, Demographic Changes, and the Technological/Digital Transition exert a considerable pressure on the responsiveness capacities of the various sectors, stressing both the city architecture and its administration. Too often the effects of events are chased, rather than anticipated, also due to the succession of contingencies that can over-stress the management continuity. A positive aspect, now consolidated in the Italian panorama, is highlighted when in situations of emergency shock and relative stress the energies and collaborations between the structures are strengthened to respond in a timely and adequate manner to the needs that require immediate attention. However, once back in conditions of supposed normality, it is often not possible to assure the capitalization of the gained experience in improving and strengthening the prediction, prevention and business continuity skills experienced.

FUTURE SCENARIOS

The predictions of an increase in temperature and change of the rainfall regime will show at local level a possible

increase in the intensity and frequency of adverse meteorological phenomena and an expected increase in the specific vulnerability of infrastructures and services with possible impacts on the health of the population due also to an increase in the average age.

ACTION

The action intends to progressively improve the capacity, effectiveness and efficiency of the Institution, examining the organizational processes and good practices used in response to severe external shock and stress events, enhancing which of these can be usefully applied to the work routine in order to strengthen the business continuity and the organizational resilience with a prevention perspective. To start to innovate the services and the future administrative structure in a process of co-design with the main stakeholders it will gain targeting public services on redundant infrastructures, simplified processes, training, better knowledge of the criticalities and potentialities connected to the social, environmental and economic context.



2 projects



6 partners



Unique Programming Document (municipality)

TREND



Climate change
Predominant



Digital transition
Links



Demographic change
Links

ASSET

Soft

Predominant

Grey

Links

GOALS

Enhancement



FOCUS

To improve the governance of the city system

CONTRIBUTION TO THE QUALITIES OF THE CITY

Liveability, Development, Attractiveness



Workplan - First Projects

In progress

- SMARTWORKING IN RED - EMERGENCY (COVID19)
- ZONA LOGISTICA SEMPLIFICATA
- PROGETTO EU CYBERSEC4EUROPE

New proposals

MAP2LEARN - Extensive Map of the significant measures adopted by the city system in response to the most severe emergencies faced in recent years such as the floods in 2011 and 2014, the collapse of the Morandi Bridge in 2018 and the COVID-19 pandemic in 2020.

RE-GROWTH - Creation of a systemic-solution portfolio that can become standards to guarantee and enhance simplification, performance improvement, business continuity, protection of human resources, demand and supply services to share with the network of cities and stakeholders at the metropolitan, regional and national level.

Timing (new proposals)

2-3 years



Coherency to Agendas, international, national and local Initiatives

Sendai Framework,
The 2030 Agenda for Sustainable Development

United Nations Making Cities Resilient Campaigns

Urban Agenda for the EU, New Leipzig Charter,
European Urban Initiative

Water Framework Directive, Flood Directive

Next Generation EU

ENHANCEMENT

Output - short term
Report on the selection and characterization of the three case studies (floods in 2011-2014 , Morandi bridge's collapse in 2018, COVID19 in 2020)

Analysis of procedures, communication, equipment, measures put in place during the emergency response and recovery phase and their contribution to systemic and governance changes or improvements

Census of the soft measures put in place by administration and stakeholders, their criticalities in the implementation and which of these have improved the daily living conditions and welfare.

Outcome - medium term
Proposal for the innovation of processes supporting the administrative structure which in the maximum of its rigidity shows the minimum of resilience

Sharing of measures with the private third sector to strengthen networks, invest in innovation technology and above all in the certification of communication processes from and towards the public and private

Roadmap and catalog of practices to be used as a city system and to foster relationships with an active resident and transient citizenship

Impact - long term
Federated and redundant infrastructures, new procedures and change of traditional services into innovative ones

Roadmap improvement and catalog of practices to be used as city system

Benefits for the city

Simplification of the administrative actions, proceedings, towards a truly robustness that can guarantee business continuity through a different services supply value chain system

Improved dialogue and systemic collaboration with other institutions and private subjects in sharing information to optimize future choices and decisions

Clear workflows, rules, conflict resolutions and tools to manage appropriately service supply issues and to enhance citizen satisfaction in relation to possible break down or restrictions.



- Protection of Employees
- Risks awareness and analysis
- Investment in Soft skills

DYNAMICcontrol

Innovation, communication, dynamism, operational flexibility, decision making

CONTEXT

Local experiences and discussions with scientific and technological institutions, with European and transnational partnerships, confirm the leading role played by the collection, management and representation of data in order to better analyze and understand the effects of the scenarios and to set the scene for effective decision-making processes. Over time, although more and more enabling technologies have been acquired for this purpose, the analyzes have not always been accompanied by synthesis processes for an understandable representation of the phenomena by all people at all levels, nor has it been possible to build a dynamic path of effective communication with and between interested parties.

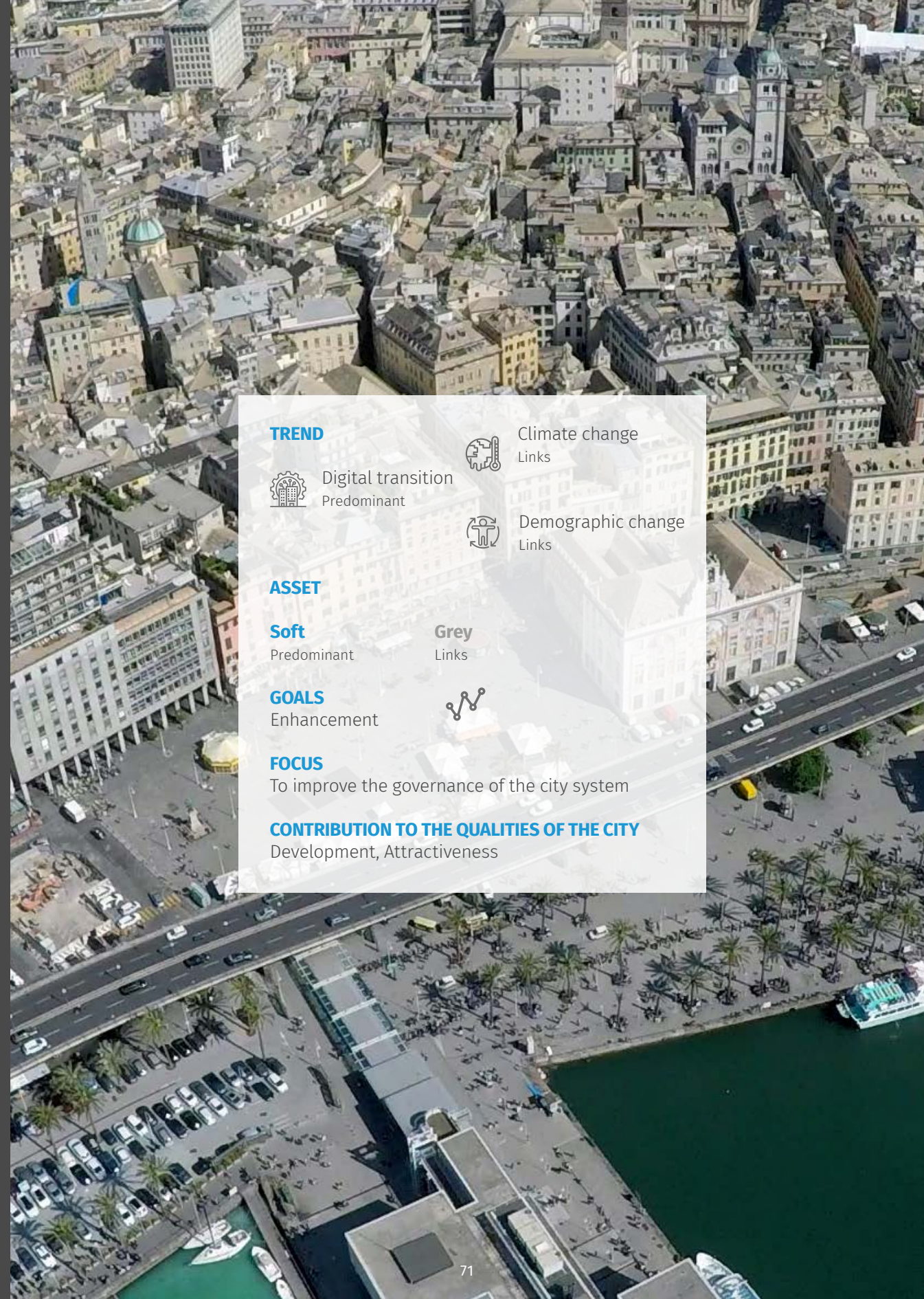
FUTURE SCENARIOS

The predictable significant increase in opportunities offered by the development of technological and digital tools and their possibility of application to advanced forms of survey and monitoring of the territory and governance systems will also contribute

to a better understanding of the expected phenomena of demographic and climatic transformation.

ACTION

The purpose of the action is to provide a quick consultation tool to improve the communication of the Institution's activities and at the same time to improve the services planning activities in relation to climatic, demographic and technological trends with improved interpretation and for their evaluation in terms of socio-economic impact, investment risk and opportunity. Through a selection of representative qualities of the city fabric, such as the livability of the urban environment, the sustainability of the transformation processes, socio-economic development, individual well-being, tourist and entrepreneurial attractiveness and the inclusiveness of its inhabitants, the progress of the plans and actions will be assessed towards better standards of robustness, redundancy, efficiency, investment and spending capacity to innovate and strengthen the city system by 2050.



TREND

- Digital transition
Predominant
- Climate change
Links
- Demographic change
Links

ASSET

- Soft**
Predominant
- Grey**
Links

GOALS
Enhancement

FOCUS
To improve the governance of the city system

CONTRIBUTION TO THE QUALITIES OF THE CITY
Development, Attractiveness



2 projects



2-5 partners



Unique Programming Document
(municipality)



Workplan - First Projects

In progress

- SUPERCOMPUTER DI LEONARDO
- SPERIMENTAZIONE 5G - PROGETTO SMART ROAD

New proposals

SMART DRAW - Rational mapping of the existing and planned actions, interventions, policies of the Institution in the short term with a view to develop the city in terms of sustainability, ecological transition and resilience.

MONITOR - Creation of a multifunctional dashboard that returns dynamic database extractions, flexible and agile monitoring of the actions, interventions and projects contained in this document. Results of the qualified Lighthouse framework will be shown via a GIS dynamic map at territorial and neighborhood level through indicators that monitor the progress of the city in the six priority qualities. It will be equipped with an innovative impact simulation tool to support decisions.

Timing (new proposals)

1-3 years



ENHANCEMENT

Output - short term
 Census of interventions and actions of territorial resilience obtained from documents of existing institutions
 Georeferenced mapping available in open access

Outcome - medium term
 Operational dashboard that relates territorial resilience with actions and interventions and sets up a trend of local growth capacity

Impact - long term
 Improved knowledge basis of the territory from the population and the stakeholders
 Improvement of decision-making and negotiation processes

Coherency to Agendas, international, national and local Initiatives

Sendai Framework,
 The 2030 Agenda for Sustainable Development
 United Nations Making Cities Resilient Campaigns

Urban Agenda for the EU, New Leipzig Charter,
 European Urban Initiative, EU territorial agenda

Water Framework Directive, Flood Directive

Next Generation EU,
 EU Biodiversity strategy for 2030,
 Green Deal, European Climate Pact

National Plan PNIEC, National Strategy Adaptation to
 Climate change and future Plan, Digital agenda plan

Benefits for the city

Better knowledge of territorial actions and interventions, their benefits, impacts and participative perspective

Improvement of the monitoring tools of the actions and the expected results of interventions on the territory, both in terms of risk mitigation and in terms of opportunities for new investments

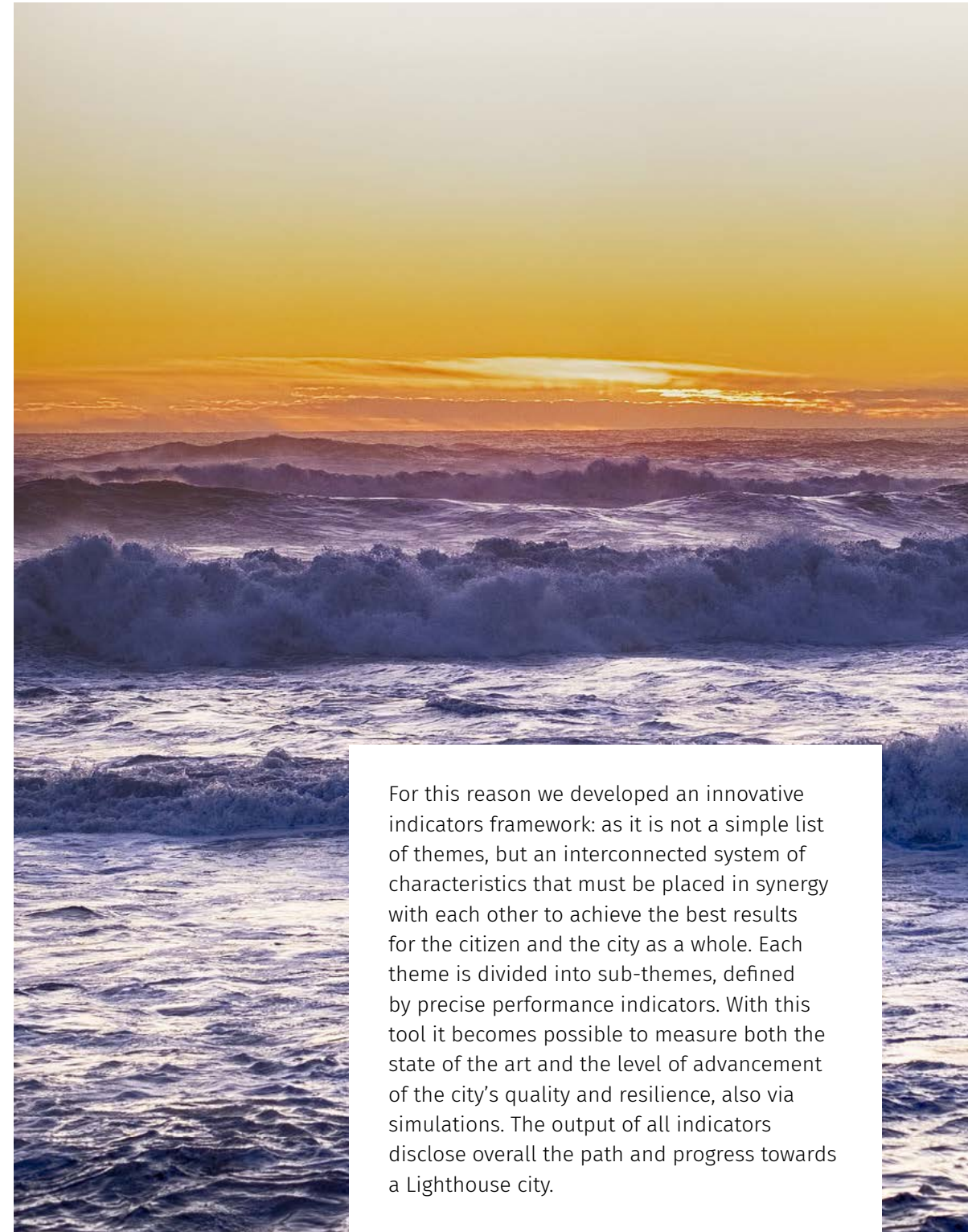


- Risk awareness
- Soft skills investment
- Social and economic impacts
- GRCN-World Bank Initiative : Towards the Pandemic-Resilient City

7. How to measure a Lighthouse City

To measure the progress towards a Lighthouse City within its qualities of livability, inclusiveness, development, attractiveness, sustainability and well-being, it has been defined a framework directly inspired by the organizational scheme of the working assets, themes and priorities contained in the Strategy approved at the end of 2019 and which takes into consideration the different dimensions and elements that contribute to make a city resilient at 360°. The framework, realized in collaboration with the Department of Economics of the University of Genoa, was based on the analysis of the most widespread resilience models in use for the urban environment, having as a focal element the people's quality of life and the ability of the city not only to react to shocks and stresses, but above all to anticipate them, to prepare and innovate itself in order to minimize the negative effects and fully catch the opportunities for improving capacities. The framework, therefore, takes into consideration the constitutive elements distinguishing between physical and intangible ones. The physical elements concern the GREEN and GREY assets, that are the environmental and infrastructural elements of the city. A robust and resilient city invests in its infrastructures and environmental protection, pursuing safety, innovation and services to citizens. The intangible elements concern the SOFT Asset, appropriately expanded, that deals with the concept of the people's quality of life, influenced by the economic, social, individual well-being and participatory aspects to city governance. An innovative and resilient city aims at improving the economic and social conditions of its citizens, promoting their inclusion and participation and reducing inequalities.

The elements are therefore arranged on six sub-Axes (derived from the Grey, Green, Soft Assets): Environment, Infrastructure, Economy, People, Society, Governance. Each of these sub-axes is divided into intertwined key themes, as resilience and quality of life depend not on individual aspects considered separately, but on the way in which they interact with each other.



For this reason we developed an innovative indicators framework: as it is not a simple list of themes, but an interconnected system of characteristics that must be placed in synergy with each other to achieve the best results for the citizen and the city as a whole. Each theme is divided into sub-themes, defined by precise performance indicators. With this tool it becomes possible to measure both the state of the art and the level of advancement of the city's quality and resilience, also via simulations. The output of all indicators disclose overall the path and progress towards a Lighthouse city.



Linear, circular, doughnut and resilient economy

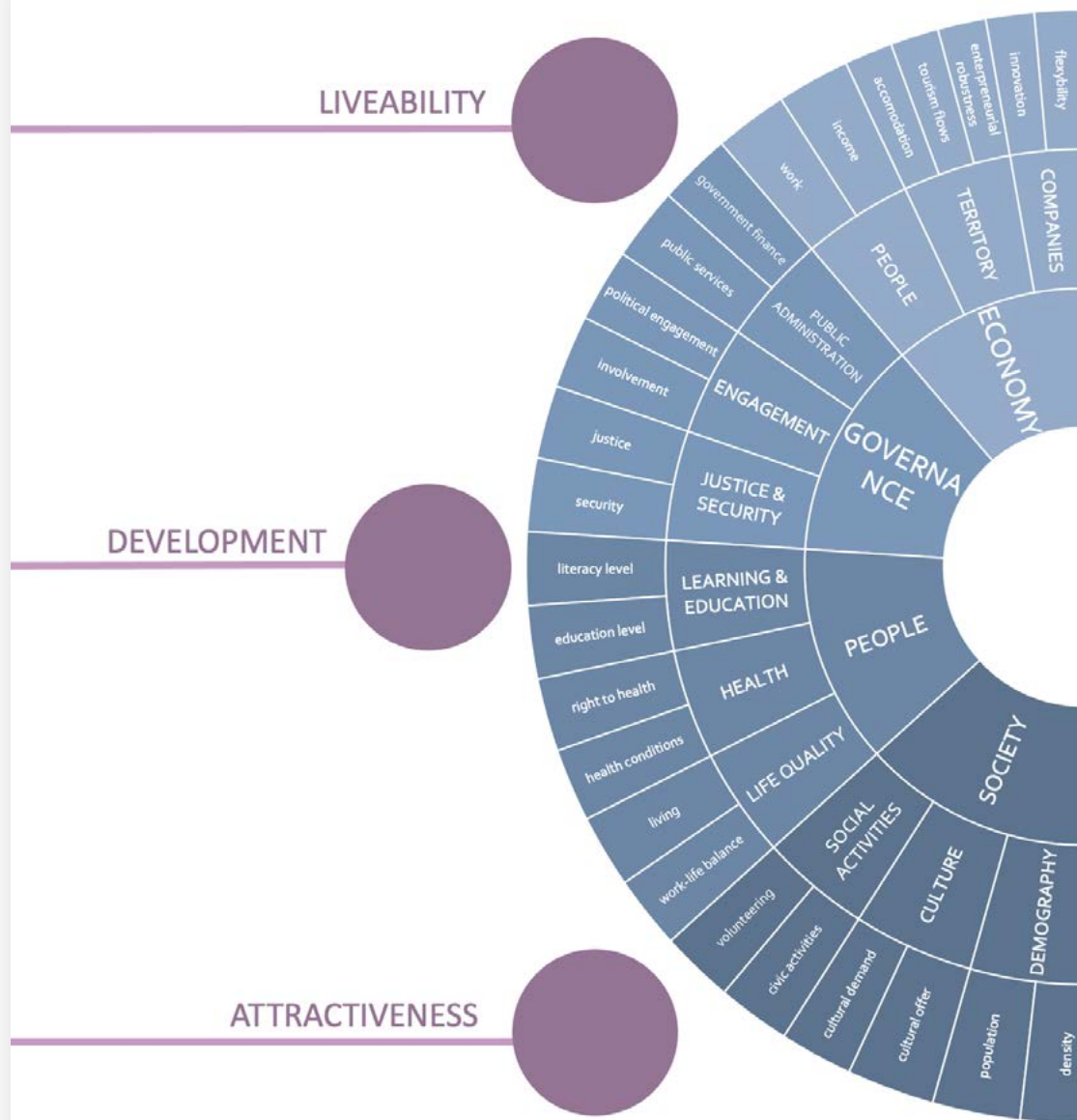
In the last few years the need to rethink the different approaches to economic development and associate them with sustainable finance tools have become a reason for concern, proposition and investment by many international, public and private realities.

Traditionally linear supply chains have gradually shown vulnerabilities and now could leave the floor to more circular ones that support collective growth and development in the medium term. This progression finds a solid basis in the principles of the circular economy and in the most recent initiatives such as the establishment of the theoretical framework of the Doughnut Economy. The scheme defines the prosperity of an urban system on the basis of political and economic choices within two thresholds (social foundation and ecological ceiling) relating to 12 essential elements and 9 planetary areas to be safeguarded.

The city of Genoa has already begun an evaluation process on how to embed the Doughnut Economy in this Action Plan in accordance with the framework proposed by researcher Kate Raworth. The joint effort with the European realities with which a collaboration is active is also dedicated to scaling this framework at the local district level. The Lighthouse City framework is therefore already inspired by the opportunities offered by investment in urban resilience and the progressive development towards the Doughnut Economy which, like two sides of the same coin, are the expression of urban strategy's transversal systems. These systems interact through two interconnected measurement and evaluation frameworks which, through the use of the same indicators, allow to re-orient in a more extensive way for the actions towards a sustainable urban economy.



The Lighthouse framework is represented as a ring. On the left side the intangible aspects are identified, attributable to the Lighthouse SOFT asset in different shades of cyano: Economy, Governance, People, Society.



On the right side, there are the physical aspects attributable to the Lighthouse GREY and GREEN assets: Environment (in green) and Infrastructures (in grey).



8. The monitoring Framework

I. Environment

it considers which aspects must be taken care of and pursued to preserve the environment and reduce the risks and vulnerabilities of the city associated to shock events such as floods or long-term stresses such as pollution and climate change, health disease.

II. Infrastructure

it examines all the infrastructural elements present in the urban territory, from roads to buildings, from utility networks (electricity, gas, water) to communication and the Internet network. The resilient city must offer abundance of infrastructures, make it safe in case of shock and reduce their environmental impact.

III. Economy

it evaluates the prosperity and economic dynamism of the city, considering the economic well-being of citizens, the prosperity and solidity of businesses, innovation and the attractiveness of the territory.

IV. People

it analyzes the individual well-being of citizens, i.e. their state of health, the level of Education, the quality of life. A resilient city pursues the well-being of every citizen, trying to provide everyone with the best quality of life both in a tangible and immaterial way.

V. Society

it considers the demographic situation of the population, any conditions of social hardship and the quality of relationships and life in common, pursued through the offer of social and cultural activities and the activities of associations and forms of cultural and sporting aggregation.

VI. Governance

it measures the quality of governance capacity through indicators relating to public spending, services offered to citizens by the public administration, to the participation of citizens in the choices of city government, to the level of security and justice detected in the territory.



Consumption and land use
Energy production and consumption
Pollution and waste management



Quality of public and private buildings
Robustness of service networks
Structures and services for urban mobility



Economic well-being of people
Business profitability and robustness
Innovation and territorial development



Health
Training and education
Quality of life



Demographic data
Culture and participation
Social activities



Public finance and citizens services
Political engagement and active participation
Justice, safety and security

Qualities of Genoa 2050

At a glance, the indicators of the framework are 170 and each of them contributes to provide an assessment of one of the themes described above. Furthermore, the indicators also measure the progress of the city towards six qualities that contribute to make it a Lighthouse city:

I. **Livability.**

The livable city is a safe and healthy city, with the availability of satisfactory public spaces and green areas, good air quality and services

II. **Development.**

The city that wants to grow focuses on the development of the economic sectors and of its own society

III. **Attractiveness.**

The attractive city knows how to reach the trust of its citizens, people and businesses who choose it as a place to live, work, produce and study. But it also knows how to embrace visitors and tourists fascinated by its beauty and cultural heritage

IV. **Inclusiveness.**

The resilient city is inclusive, offers equal opportunities for all and leaves no one behind and apply the DNSH principles in its choices

V. **Sustainability.**

The city that grows without compromising resources of the future (next) generations

VI. **Welfare.**

The city that knows how to reach a good quality of life for its citizens and where it is pleasant and stimulating to move, spend time, enjoy the environment and the cultural heritage

9. Our meeting and content sharing platform

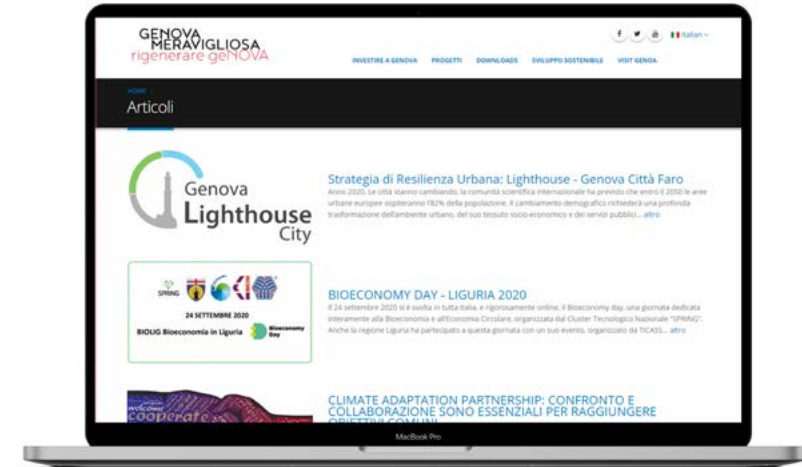
The platform is a place for sharing and training, accessible to everybody, where it is possible to read and download contents of the Strategy and Genoa 2050 Action Plan and to be updated on the activities carried out by the Office on the topic of sustainable and resilient urban development.



www.genovameravigliosa.com/en/genova-lighthouse-city

The platform can be visited at the above-mentioned address, it is divided into several evolving sections, proving the great dynamism of the underlying issues that the Office deals with, including the great/major global change trends such as climate change, demographic change and the digital-technology transition. To bring future generations closer and raise awareness, the Office collaborates at the national level with numerous Universities and other Research Centers including i.e. the University of Genoa, the University of Turin and the IUAV University of Venice.

Through these Institutions it is possible to activate curricular internship programs for students interested in examining in depth the challenges and objectives with which cities are confronted. The general subjects are related to urban resilience and sustainable development and, in particular, to the circular economy, policies to mitigate greenhouse gas emissions, adaptation to climate change, natural and anthropic risks, energy efficiency policies, urban regeneration, sustainable mobility, smart specialization and digital systems at the service of communities.



In the main sections of the platform you can explore specific areas of interest including:

a) Events - The Urban Agenda & Green Transition Office actively participates in international conferences, conventions and workshops for sharing and comparing with the various European realities on the topics related to climate change adaptation, urban regeneration and development of resilient and sustainable communities as well as to the measures taken by the City during the COVID-19 pandemic emergency. For each event, you can consult the links that refer to the organizing institution and access to the interventions summaries carried out by the Office.

b) Library - In this area you can access the main open publications used by the Office for defining and drafting the Genoa Lighthouse City Strategy and the Genoa 2050 Action Plan.

c) Alliances, Networks and Partnerships - Section dedicated to networking and to the national and international partnerships in which the Municipality of Genoa is involved, i.e. URBAN AGENDA for the EU - the European Pact of Amsterdam; EUROCITIES - the

network of 190 European cities representing 130 million citizens; GREEN CITIES - the national network for the development of green actions in accordance with the most advanced European and international experiences.

d) European Projects - Section that collects a short summary and the link of the numerous European projects in the field of resilience and territorial transformation in which the Municipality of Genoa has participated and currently participates i.e. Anywhere - Force - Flood-Serv - UnaLab under the H2020 Framework) - PONMetro (Operative Plan for Metropolitan Cities) - etc.

e) Latest Blog Posts - A dynamic section drawn for reading home-made articles on the main issues dealt by the Office and aimed at emphasizing the commitment of the City of Genoa. Through the platform it is also possible to access to the blogging platform "Medium", a great collector of news from all over the world in which the Office is engaged in sharing its publications with an international audience and where new food for thoughts on the outside of their local context can be easily obtained.



Acknowledgments

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The Indicators framework was developed with a research project in collaboration with the University of Genoa, Department of Economics (DIEC).

This document will be accompanied by technical annexes available on the website:
www.genovameravigliosa.com/en/biblioteca

The source of the “Projects in progress” section is an excerpt from the Strategic Plan of the City of Genoa 2021, Made by the Management Economic Development, Innovation Projects of the Municipality of Genoa.

Credits

Municipality of Genoa
Alderman for Green transition, Transports, Integrated Mobility,
Environment, Waste, Animals, Energy
Economic Development Department and Innovative Projects

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