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URBAN GreenUP

D4.6: Report on implementation progresses in Izmir

WP 4 , T 4.8

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Versions

Table 0-1: Table of versions

Version	Person	Partner	Date
v1	Berna Ataman Oflas, Ayşe Didem Yaygel, Ertan Dikmen, Sinan Alper, Sibel Kozan Alper	IZM	07 May 2019
v2	Kaan Emir, Oya Tabanoğlu, Gonca Akgül	DEM	13 May 2019
v3	Koray Velibeyoğlu, Gülden Gökçen Akkurt, Yusuf Kurucu, Mustafa Tolga Esetlili, Şerif Hepcan, Çiğdem Coşkun Hepcan, Merve Özeren Alkan, Gülşah Adıgüzel Kaçmaz	IZT, EGE	16 May 2019
v4	Berna Ataman Oflas, Ayşe Didem Yaygel, Ertan Dikmen, Sinan Alper, Sibel Kozan Alper	IZM	24 May 2019
v5	Kaan Emir, Baha Kuban	DEM	28 May 2019
v6	Berna Ataman Oflas, Ayşe Didem Yaygel, Ertan Dikmen, Sinan Alper, Sibel Kozan Alper	IZM	29 May 2019
v7	Kaan Emir	DEM	30 May 2019
v8	Berna Ataman Oflas, Ayşe Didem Yaygel, Ertan Dikmen, Sinan Alper, Sibel Kozan Alper	IZM	27 August 2019
v9	Kaan Emir	DEM	29 August 2019
v10	Berna Ataman Oflas, Ayşe Didem Yaygel, Ertan Dikmen, Sinan Alper, Sibel Kozan Alper	IZM	25 November 2019
v11	Sinan Alper, Ayşe Didem Yaygel, Ertan Dikmen, Berna Ataman Oflas, Sibel Kozan Alper	IZM	27 November 2019
v12	Kaan Emir	DEM	29 November 2019

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0 Executive summary

This document contains fundamental information on current status of each NBS to be implemented in Izmir sub demos in the scope of URBANGreenUP project. The fundamental information includes overall progress on NBSs, implementation steps for completed interventions, (All Sub Demo A interventions), implementation progress of on-going interventions (on Sub Demo C) and updated timetables including implementation phase of the interventions.

After the introduction chapter, in second, third and fourth chapter the information mentioned in previous paragraph investigated for each sub demo respectively. In the subsections of these chapters there is a further investigation for each NBS in terms of their current status.

In chapter 5, non-technical NBSs are explained with similar tables representing the current status. Chapter 6 is summarizing the timetables and gives the opportunity to follow the planned important dates in terms of implementation of each NBS together.

1 Introduction

In this version of the implementation progress report, status of each intervention is updated by taking into consideration the following table:

Table 1-1: Explanation of percentages on status tables

Percentage delivery	Technical interventions	Non-technical interventions
10%	NBS locations under review	Non-technical interventions described
20%	NBS location agreed	Locations/approach proposed
30%	Detailed design and specifications are agreed and underway	Preliminary site visits/assessments made
40%	Economical specifications are calculated	Engagement with stakeholders, partners, and wider community started
50%	Technical project finished	Interventions mapped in detail/ Regular engagement with stakeholders
60%	Procurement of proposed works is underway	Stakeholder partnership established
70%	Tenders have been let	Interventions about to commence
80%	Works have started on site	Intervention has begun/ Stakeholders actively involved
90%	Good progress with on-site delivery	Good progress with delivering the Intervention/Stakeholders benefitting
100%	Works fully completed	Intervention completed

Interventions are investigated in specified subsections for each intervention under sections described for each sub demo.

Timetables for each intervention given in those subsections with foreseen dates of start and finish of the interventions.

Besides the information given for the NBSs which do not have any progress in terms of implementation yet, the implementation steps for the Parklets are given under the section 2.2 Installation of Parklets and for the green covering shelter, green permeable surface and green shady structures under the section 2.5 Green Covering Shelter for Car Parking Area.

1.1 Purpose and Target Group

The report has become a basis for following studies of Task 4.8 Supervision of NBS implantation and civil works as well as providing the implementation progress and current status and timetable for the following studies of each NBSs in Izmir's sub demo areas,

The document brings the summarized information in terms of status of each NBS and the implementation steps for the actions that has been completed in the demo sites of Izmir:

- IAc4, installation of parklets,
- IAc14 green covering shelter for car parking areas,
- IAc15 green permeable pavement around car parking area,
- IAc16 green shady structures for car parking area,
- IAc3 Arboreal areas around Car Park Areas (Planting 26 trees around car park and parklets),

- IAc10 Smart Soil (Biochar) into green shady structures.

On going implementations:

- Progress of IAc5 Culvert works on Peynircioğlu stream is explained in detail with photographs from construction site.

1.2 Contribution of partners

During the preparation stage of this report the municipality team (IZM) and DEM had a collaborative study to reflect the status of the interventions on this deliverable. IZM also worked with EGE and IZT teams to add their necessary contributions related with final decisions of design and implementation timetables.

1.3 Relation to other activities in the project

WP1 - D1.1 - NBS Catalogue: During the preparation of this document the information given in D1.1 and outcomes of the D1.1 used as resource.

WP4 - D4.1 & D4.2 & D4.3- Diagnosis Report on Izmir & Baseline Definition of Izmir & Technical Specifications of Izmir Demo: Those deliverables provide information during the determination of status of each NBS. Also, information from those reports will be used as resource for evaluation of implementation progress and the timetables which going to be followed during the implementation of those NBSs. Besides these, those deliverables give the possibility of comparison of the previous decisions with updated decisions.

2 Implementation Progress in Sub Demo A

Sub Demo A will be deployed in the central area of Karşıyaka Metropolitan District characteristic of highly-urbanized areas (see Figure 2-1). The NBSs defined in this sub demo will be related with re-naturing urbanization and singular green infrastructure interventions. The list of the interventions implemented and/or going to be implemented on sub demo A are given in the Table 2-1.

Figure 2-1: Sub Demo A: Karşıyaka Metropolitan District

Table 2-1: List of interventions in Sub-Demo A

Re-naturing urbanization	Water interventions	Singular Green Infrastructures
Arboreal areas around Car Park Areas		Smart Soil (Biochar) into Green Shady Structures
Installation of parklets		Green Covering Shelter for car parking area
		Green Permeable Pavement Around Car Parking Area
		Green Shady Structures for car parking area

2.1 Arboreal areas around Car Park Areas

Implementation of arboreal areas around car park areas is completed. Details can be found under the section 2.5 Green Covering Shelter for Car Parking Areas.

The overall progress on this NBS is given in Table 2-2.

Table 2-2: Status for IAc3

IAc3	Arboreal areas around Car Park Areas (Planting 26 trees around car park and parklets)								
Implementation of this intervention is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 2-3.

Table 2-3: Timetable for IAc3

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Arboreal areas around Car Park Areas	Nov -18	Dec-18	May-19	Jun-19	Nov-19

2.2 Installation of Parklets

Implementation of Parklets is completed. Detailed progress is explained in below paragraphs with photographs from implementation steps.

After the completion of the tender process of 4 Parklets in Girne Street, a control team consisting of 1 architect, 1 landscape architect, 1 construction technician and 1 machine technician has been commissioned for the construction audits of the work. The control team, visited the planned area of the intervention, then they left the area to contractor to start the implementation.

At the beginning of the implementation, the list of materials to be used in the project is provided by the contractor with the material approval certificates. Then, materials to be supplied were checked for compliance with the technical specifications. After the confirmation of the suitability of the materials, the necessary procedures for ordering the materials has started.

Figure 2-2: Audit for iron construction production

The production of iron constructions has been placed on the floor of the flowerpot, living unit and floor covering started. During the manufacturing process, the conformity of the thickness and production measures checked and confirmed by the control team.

In the meantime, for the drip irrigation system to be located in the flower pots, the piping infrastructure line, supplied from the irrigation line in the traffic island placed at the centre of the street, is connected to the parklets.

Figure 2-3: Connection of pipeline to parklets for drip irrigation

After the production of the iron construction was completed, installation works started in the area. 5 cm thick concrete production was made on the road line and the construction was mounted on the concrete to ensure the integrity of the pavement with the road surface.

Figure 2-4: Installation of iron construction

After the installation of the iron construction, the sheet metal forming the inner surface of the pots were assembled. Simultaneously, the wooden dials of the pots anchored to the iron construction.

Figure 2-5: Placing the pots in iron construction

Then, covering of pots had started by providing coating materials.

Figure 2-6: Covering the iron construction and pots

During the installation of pot coating; insulating materials, herbal soil and plants were supplied, controlled and planted in the field. Planting started after confirmation of conformity of material and plants.

Figure 2-7: Soil and plant supply

The plants were planted in suitable pots in terms of number and material on the basis of the Landscape Project. The drip irrigation line was completed and activated.

Figure 2-8: Activation of drip irrigation and planting the plant species

Finally, elements such as seating unit and table were produced and installed in the units.

Figure 2-9: Installation of seating units and tables

The final view of one of the parklet units is given in the figure below:

Figure 2-10: Final view of a parklet unit

2.3 Smart Soil (Biochar) into Green Shady Structures

Implementation of smart soil (biochar) into green shady structures has been completed. Details can be found under the section 2.5 Green Covering Shelter for Car Parking Areas.

The overall progress on this NBS is given in Table 2-4.

Table 2-4: Status of IAc10

IAc10	Smart Soil (Biochar) into Green Shady Structures								
Implementation of this intervention is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 2-5.

Table 2-5: Timetable for IAc10

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Smart Soil (Biochar) into Green Shady Structures	Nov -18	Dec-18	May-19	Jun-19	Nov-19

2.4 Green Permeable Pavement Around Car Parking Area

Implementation of green permeable pavement around car parking area is completed. Details can be found under the section 2.5 Green Covering Shelter for Car Parking Areas.

The overall progress on this NBS is given in Table 2-6.

Table 2-6: Status of IAc15

IAc15	Green Permeable Pavement Around Car Parking Area								
Implementation of this intervention is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen inTable 2-7.

Table 2-7: Timetable for IAc15

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Green Permeable Pavement Around Car Parking Area	Nov -18	Dec-18	May-19	Jun-19	Nov-19

2.5 Green Covering Shelter for Car Parking Areas

Implementation of green covering shelter for car parking areas is completed. Detailed progress explained in below paragraphs with photographs from implementation steps.

The overall progress on this NBS is given in Table 2-8.

Table 2-8: Status of IAc14

IAc14	Green Covering Shelter for car parking area (1450 m2 green covering shelter)								
Implementation of this intervention is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in the Table 2-9.

Table 2-9: Timetable for IAc14

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Green Covering Shelter for car parking area	Nov -18	Dec-18	May-19	Jun-19	Nov-19

After the tender was completed within the scope of the construction of the Green Covering Shelter, Green Permeable Pavement and Green Shady Structures; a control organization consisting of 1 architect, 1 landscape architect, 1 civil engineer, 1 mechanical engineer and 1 map technician was commissioned for the construction control of the work. As a control organization, the project area was visited with the contractor and delivered to the contractor.

At the beginning of the implementation process the material approval documents were obtained from the contractor about the materials used in the project and the compatibility of the materials to be supplied was checked with the technical specifications. The conformity of the materials was confirmed and the necessary procedures regarding the material order were initiated.

As shown in Figure 2-11, necessary safety measures are taken for the construction site and its surroundings and the construction site is surrounded with safety material.

Figure 2-11: Safety zone around the implementation

As shown in Figure 2-12, excavation had been finalised for the foundation of the green covering shelter structure.

Figure 2-12: Excavation on site of green covering shelter

After the excavation was completed, the foundation grocer concrete was poured and foundation reinforcement operations were started (Figure 2-13).

Figure 2-13 Construction work on green covering shelter foundation

The existing floor was removed for permeable surface applications and the layers of the permeable surface were manufactured according to the project detail (Figure 2-14).

Figure 2-14: Removal of the existing surface and laying the layers of permeable surface

In Izmir Natural Life Park and Izmir Vilayetler Evi car park, foundation construction was completed and both areas were made ready for the installation of steel structures.

First, steel column assembly in Vilayetler Evi car park was finalized. Simultaneously, the Life Park Car Park structure was completed and both areas were prepared for permeable surface implementations.

Figure 2-15: Steel column assembly in Vilayetler Evi car park

Within the scope of the Green Roofed Car Park Project, 2 different types of permeable surfaces have been implemented in 2 implementation areas. Material procurement process for the cube stone application to be implemented in the parking lot of İzmir Vilayetler Evi has started. For the second implementation area, a sample implementation was requested from the contractor company for the permeable concrete implementation to be made in İzmir Natural Life Park. Permeability and strength tests of the material were made by making sample casting via implementation in the manufacturing area of the contractor company.

Figure 2-16: Permeability tests on material

Simultaneously, the cube stone material to be applied at Vilayetler Evi was procured and brought to the demo site. After the levelling of the area of implementation, sub-layer applications were completed. The area was prepared for implementation of the green roof structure and coating application started.

Figure 2-17: Sub-layer applications on Vilayetler Evi Car Park

Before the implementation of permeable concrete in the Natural Life Park, a test has been performed in a small area and the technical details of the implementation were explained to the technical team. The first stage of the permeable concrete implementation was completed and permeability tests were performed.

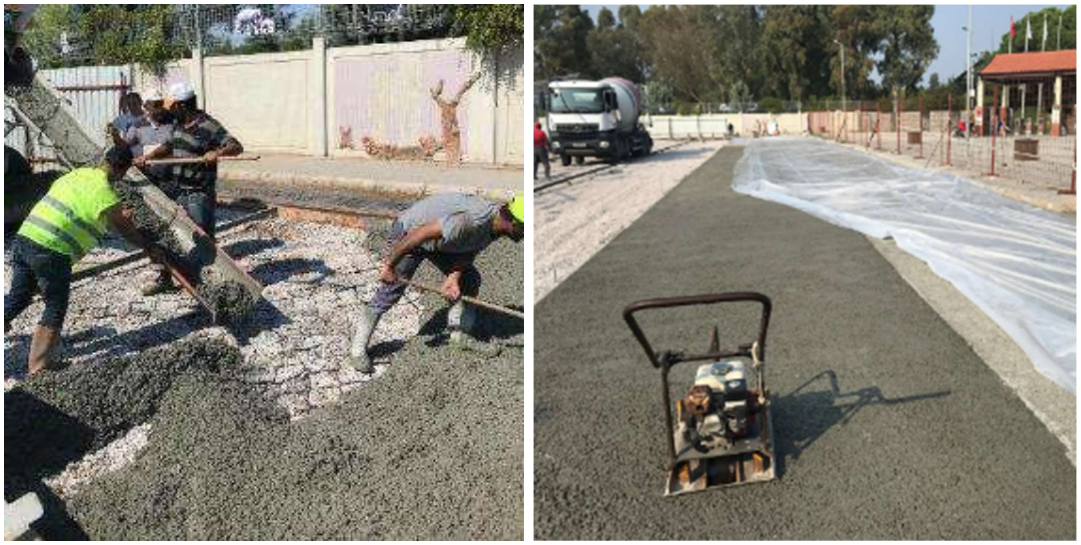

Figure 2-18: Permeable surface material implementation on Natural Life Park car park area

While the coating applications continued, the steel structure was completed simultaneously and the wire grids implemented on the area where the green shady structure going to be planted.

Figure 2-19: Steel structure assembly

Landscape applications were completed. After the production of the rejuvenation area where the plant soil was kept, plant soil and biochar (smart soil) were mixed and the area were prepared for planting. The ivy plants (green shady structures) were planted and attached to the structure. Irrigation systems were installed. Finally, tree planting was carried out in 2 car park areas as planned.

Figure 2-20: Biochar (smart soil) implementation, ivy plants and tree planting

The construction of the green roofed parking lots project was completed on 22nd of November 2019.

2.6 Green Shady Structures for car parking area

Implementation of green shady structures for car parking area is completed. Details can be found under the section 2.5 Green Covering Shelter for Car Parking Areas.

The overall progress on this NBS is given in Table 2-10.

Table 2-10: Status of IAc16

IAc16	Green Shady Structures for car parking area (Green shady structures with ivy plants)								
Implementation of this intervention is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 2-11.

Table 2-11: Timetable for IAc16

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Green Shady Structures for car parking area	Nov -18	Dec-18	May-19	Jun-19	Nov-19

3 Implementation Progress in Sub Demo B

In the heart of Sub Demo B there is 'Sasalı Natural Life Park' designed by Izmir Metropolitan Municipality and was recently considered to extend its area of influence through new ecologically-sensitive developments (Figure 3-1). The NBSs defined in this sub demo will be related with water interventions and singular green infrastructure interventions. The list of the interventions implemented and/or going to be implemented on sub demo B are given in the Table 3-1.

Table 3-1: List of interventions in Sub-Demo B

Re-naturing urbanization	Water interventions	Singular Green Infrastructures
	Grassed swales and Water Retention Ponds around Bio-boulevard	Smart soil production in climate-smart urban farming precinct
		Natural pollinator's modules
		Climate-smart greenhouse in urban farming precinct
		Biofuel production unit
		Development of Smart soils from mud plant, to use in urban farming

Figure 3-1: Location of Sub Demo B

3.1 Smart soil production in climate-smart urban farming precinct

Implementation of smart soil production in climate-smart urban farming precinct has not started yet. The preliminary project phase of the intervention has been completed. License application was made. After obtaining the license, the implementation projects will be transferred to the tender unit and the tender process will begin.

Tender process will be completed at the end of November 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 3-2.

Table 3-2: Status of IAc9

IAc9	Smart soil production in climate-smart urban farming precinct									
Selection of the location is completed and resulted with the decision of using an area owned by municipality within the boundaries of sub-demo B. Studies on technical project with external consultancy about the technical details of the production unit are completed. Tender process will be completed at the beginning of December.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 3-3.

Table 3-3: Timetable for IAc9

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Smart soil production in climate-smart urban farming precinct	May-19	Jun-19	Nov-19	Dec-19	Feb-20

3.2 Natural pollinator's modules

Implementation of natural pollinator's modules has not started yet. Tender process is completed. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 3-4.

Table 3-4: Status of IAc11

IAc11	Natural pollinator's modules (20 pollinator houses along the bio-boulevard)									
The technical project for this intervention is completed. Procurement of proposed works is underway. Implementation will start once the tender process is completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 3-5.

Table 3-5: Timetable for IAc11

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Natural pollinator's modules	Nov-18	Dec-18	Nov-19	Dec-19	Feb-20

3.3 Development of Smart soil from mud plant, to use in urban farming

Implementation of development of smart soil from mud plant has not started yet. Tender process is on-going and will be completed in November 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 3-6.

Table 3-6: Status of IAc18

IAc18	Development of Smart soil from mud plant, to use in urban farming (Increase efficiency in agriculture with using the by-products from wastewater treatment)									
The technical project for this intervention is completed. Tender process started and will be completed on the beginning of December.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 3-7.

Table 3-7: Timetable for IAc18

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Development of Smart soil from mud plant	May-19	Jun-19	Nov-19	Dec-19	Feb-20

3.4 Grassed swales and Water Retention Ponds around Bio-boulevard

Implementation of grassed swales and water retention ponds has not started yet. Tender process is on-going and will be completed in November 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 3-8.

Table 3-8: Status of IAc6

IAc6	Grassed swales and Water Retention Pounds around Bio-boulevard									
The technical project for this intervention is completed. Procurement of proposed works is underway. Tender process will be completed at the end of November. Implementation will start once the tender process is completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 3-9.

Table 3-9: Timetable for IAc6

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Water Interventions	Grassed swales and Water Retention Ponds	Mar-19	Apr-19	Nov-19	Dec-19	Feb-20

3.5 Climate-smart Greenhouses

Implementation of arboreal areas around car park areas has not started yet. Tender process is on-going and will be completed in in November 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 3-10.

Table 3-10: Status of IAc17

IAc17	Climate smart greenhouses								
The technical project for this intervention is completed. Procurement of proposed works is underway. Tender process will be completed at the end of November. Implementation will start once the tender process is completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 3-11.

Table 3-11: Timetable for IAc17

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Climate-smart Greenhouses	Mar-19	Apr-19	Nov-19	Dec-19	Feb-20

4 Implementation Progress in Sub Demo C

Sub Demo C is formed by a 10 km long green corridor from the coastal areas, river beds to highly sensitive nature protection areas (see Figure 4-1). The proposed green corridor includes sustainable transportation options (cycling &walking) and special sections like the Bio-Boulevard that will provide important ecosystem services for urban biodiversity. Sub Demo C also includes non-technical interventions aiming bio-diversity increasing education activities. The NBSs defined in this sub demo will be related with re-naturing urbanization, water interventions, singular green infrastructure and non-technical interventions. The list of the interventions implemented and/or going to be implemented on sub demo C are given in the Table 4-1.

Figure 4-1: Sub Demo C: Peynircioğlu Stream and Urban Green Corridor

Table 4-1: List of interventions in Sub-Demo C

Re-naturing urbanization	Water interventions	Singular Green Infrastructures	Non-technical interventions
Cycle and pedestrian route in new Green Corridor	Culvert works for Peynircioğlu Stream	Green fences	Industrial Heritage Route along the Izmir Urban Green Corridor
Planting 4800 Cool & Shady Trees	Green pavements for Peynircioğlu Stream	Fruit walls	
Urban Carbon Sink			

In sub demo C the tender processes of all of the interventions listed above applications are proceeding simultaneously. The tender preparations of the interventions have been completed and the tender is in the process of announcement. Constructions are started in October.

Work on the Industrial Heritage Route project continues. Construction tender will be held as soon as possible.

4.1 Cycle and pedestrian route in new Green Corridor

Implementation of cycle and pedestrian route in new green corridor has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-2.

Table 4-2: Status of IAc1

IAc1	Cycle and pedestrian route in new Green Corridor									
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 4-3.

Table 4-3: Timetable for IAc1

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Cycle and pedestrian route in new Green Corridor	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.2 Planting 4800 Cool & Shady Trees

Implementation of planting 4800 cool & shady trees has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-4.

Table 4-4: Status of IAc2

IAc2	Planting 4800 Cool & Shady Trees									
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 4-5.

Table 4-5: Timetable for IAc2

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Planting 4800 Cool & Shady Trees	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.3 Urban carbon sink

Implementation of urban carbon sink has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-6.

Table 4-6: Status of IAc5

IAc5	Urban Carbon Sink (Creation of new green areas with special species of plants for high-level carbon capture)									
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 4-7.

Table 4-7: Timetable for IAc5

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Urban carbon sink	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.4 Culvert works for Peynircioğlu Stream

Implementation of culvert works for Peynircioğlu Stream started October 2019.

After the tender processes of Peynircioğlu Stream Landscaping Project was completed, a group of architects, civil engineers, landscape architects, electrical and mechanical engineers were assigned for construction controls of the work. The project area was delivered to the contractor company on 18th of October 2019. Implementations within the scope of this project are; green pedestrian and bicycle path, planting 1000 trees, applications to reduce carbon emissions, green culvert works on stream, green pavement application, green fence application, 10 pollinator house and fruit wall application.

Construction Steps for Peynircioğlu Stream

During the initial phase of the civil works, materials approval documents were obtained from the contractor about the materials used in the project and the conformity of the materials to the technical specifications was checked. The conformity of the materials was confirmed and the necessary procedures regarding the material order were initiated.

The site have been closed and visuals and information boards about the project were placed.

Figure 4-2: Project information boards around construction site

Stone filling operations for the parts to be filled in the stream have started. During the manufacturing process, the project control team checked whether the stones conformed to the specifications.

Figure 4-3: Stone filling application inside the stream

In order to be able to perform the implementations in the stream simultaneously with this process, a narrow section of the stream was drawn with water embarkment and water discharged.

Figure 4-4: Water embankment application and water transfer operation in stream

In order to make the concrete side surfaces of the stream permeable via the terramesh implementation, the borders which the concrete would be cut was determined.

Figure 4-5: Border drawing for terramesh implementation

For permeable surfaces to be implemented around the creek, existing floor coverings were dismantled. Reusable and recyclable materials are stacked and sent to the relevant institutions.

Figure 4-6: Existing material dismantling operation

Foundation and retaining wall are constructed for the manufacturing of culverts in the creek.

Figure 4-7: Culvert manufacturing operations inside the creek

In the emptied stream, cleaning operation was carried out and suitable ground was prepared for necessary productions then, in-stream productions started.

Figure 4-8: Cleaning operations in stream

Concrete cracking on the side surfaces of the stream are completed and sample terramesh was applied.

Figure 4-9: Sample terramesh application on the edges of the stream

Foundation digging and formwork applications were started for the observation terraces (recreational areas) to be constructed on the edge of the stream.

Figure 4-10: Stream side pier foundation application

Green areas and permeable surfaces around the creek were increased by filling operations in stream. Green pedestrian and bicycle path, planting 1000 trees, applications to reduce carbon emissions (urban carbon sink), green pavement application, green fence application, 10 pollinator house and fruit wall application will be completed after the culvert works completed. All actions will be completed until February 2020.

4.5 Green pavements for Peynircioğlu Stream

Implementation of green pavements for Peynircioğlu Stream has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-8.

Table 4-8: Status of IAc8

IAc8	Green pavement along Peynircioğlu stream								
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 4-9.

Table 4-9: Timetable for IAc8

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Water Interventions	Green pavements for Peynircioğlu Stream	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.6 Green fences

Implementation of green fences has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-10.

Table 4-10: Status of IAc12

IAc12	Green fences (1600 m^2 green fence)									
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 4-11.

Table 4-11: Timetable for IAc12

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Green fences	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.7 Establishment of fruit walls

Implementation of arboreal areas around car park areas has not started yet. Tender process is completed in October 2019. Implementation will start in December 2019 and end in February 2020. The overall progress on this NBS is given in Table 4-12.

Table 4-12: Status of IAc13

IAc13	Establishment of Fruit walls (96 m^2 Fruit walls)									
The technical project for this intervention is completed. Tender process is completed. Implementation will start when the culvert works on Peynircioğlu stream completed.										
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	

The foreseen timetable can be seen in Table 4-13.

Table 4-13: Timetable for IAc13

Sub demo C	End of Design	Tender Process		Implementation	
		Start	End	Start	End

Singular Green Infrastructure	Fruit walls	Apr-19	May-19	Oct-19	Dec-19	Feb-20

4.8 Industrial Heritage Route Along the Izmir Urban Green

Implementation of Industrial Heritage Route along the Izmir urban green has not started yet. Tender process is on-going and will be completed at the end of November 2019. Implementation will start in December 2019 and end in February 2020.

The overall progress on this NBS is given in Table 4-14.

Table 4-14: Status of IAc19

IAc19	**Industrial Heritage Route Along the Izmir Urban Green**								
The technical project for this intervention is completed. Tender process started and will be end at the end of November. Implementation will start in December.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

The foreseen timetable can be seen in Table 4-15.

Table 4-15: Timetable for IAc19

Sub demo C		**End of Design**	**Tender Process**		**Implementation**	
			Start	**End**	**Start**	**End**
Non-Technical Interventions	Industrial Heritage Route Along the Izmir Urban Green	Apr-19	May-19	Nov-19	Dec-19	Feb-20

5 Implementation Progress for Non-technical Interventions

5.1 Educational Path/Bio-boulevard

The status of the intervention is given in Table 5-1.

Table 5-1: Status of IAc20

IAc20	Educational Path/Bio-boulevard								
Preparation of different education scenarios and activities for the NBSs on sub demo B is on-going. Implementation of the studies related with that action going to be started after the interventions in sub demo B completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.2 Supporting Activities for the Food-smart Future of Izmir

The status of the intervention is given in Table 5-2.

Table 5-2: Status of IAc21

IAc21	Supporting Activities for the Food-smart Future of Izmir								
Implementation of the studies related with that action going to be started after the interventions in sub demo B completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.3 Education for the Food-smart Future of Izmir

The status of the intervention is given in Table 5-3.

Table 5-3: Status of IAc22

IAc22	Education for the Food-smart Future of Izmir								
There are on-going studies on planning the different scenarios/activities. Implementation of the studies related with that action going to be started after the interventions in sub demo B completed.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.4 Engagement Portal

The status of the intervention is given in Table 5-4.

Table 5-4: Status of IAc23

IAc23	Engagement Portal								
Actions related with this non-technical intervention will be developed and took place on the website of "Izmir Doğa", (http://izmirdoga.izmir.bel.tr/tr/Anasayfa). A map of Izmir from the website; http://kentrehberi.izmir.bel.tr/izmirkentrehberi going to be adapted and social media modules going to be added on Izmir Doğa website.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.5 Bio-blitz Event

The status of the intervention is given in Table 5-5.

Table 5-5: Status of IAc24

IAc24	Bio-blitz Event								
Two activities took place as pilot activities with the groups of 30 people in August and November 2018. One of the activities was in an archeologic site and the other one was in a botanic site.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.6 Support to citizen project of NBS

The status of the intervention is given in Table 5-6.

Table 5-6: Status of IAc25

IAc25	Support to citizen project of NBS								
First activity has taken place as planned in section 5.6 of deliverable 4.3. Pollinator house installation has been tried as a part of this event.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

5.7 City Mentoring Strategy

The status of the intervention is given in Table 5-7.

Table 5-7: Status of IAc26

IAc26	City Mentoring Strategy								
2 conference events for dissemination of URBAN GreenUP via healthy cities union which is the union of 70 local governments of Turkey. There are on-going studies to reach other local networks.									
10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

6 Timetable

This section includes timeline for each sub demo and intervention. Within the timeline the design stage, tender and implementation processes can be investigated.

Table 6-1: Timetable for sub demo A

Sub demo A		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Arboreal areas around Car Park Areas	Nov -18	Dec-18	May-19	Jun-19	Nov-19
	Installation of Parklets	Oct -18	Nov-18	Feb-19	Mar-19	May-19
Singular Green Infrastructure	Smart Soil (Biochar) into Green Shady Structures	Nov -18	Dec-18	May-19	Jun-19	Nov-19
	Green Permeable Pavement Around Car Parking Area	Nov -18	Dec-18	May-19	Jun-19	Nov-19
	Green Covering Shelter for car parking area	Nov -18	Dec-18	May-19	Jun-19	Nov-19
	Green Shady Structures for car parking area	Nov -18	Dec-18	May-19	Jun-19	Nov-19

Table 6-2: Timetable for sub demo B

Sub demo B		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Singular Green Infrastructure	Smart soil production in climate-smart urban farming precinct	May- 19	Jun-19	Nov-19	Dec-19	Feb-20
	Natural pollinator's modules	Nov -18	Dec-18	Nov-19	Dec-19	Feb-20
	Development of Smart soil from mud plant	May- 19	Jun-19	Nov-19	Dec-19	Feb-20
	Climate-smart Greenhouses	Mar- 19	Apr-19	Nov-19	Dec-19	Feb-20
Water Interventions	Grassed swales and Water Retention Ponds	Mar- 19	Apr-19	Nov-19	Dec-19	Feb-20

Table 6-3: Timetable for sub demo C

Sub demo C		End of Design	Tender Process		Implementation	
			Start	End	Start	End
Renaturing Urbanization	Cycle and pedestrian route in new Green Corridor	Apr-19	May-19	Oct-19	Dec-19	Feb-20
	Planting 4800 Cool & Shady Trees	Apr-19	May-19	Oct-19	Dec-19	Feb-20
	Urban carbon sink	Apr-19	May-19	Oct-19	Dec-19	Feb-20
Water Interventions	Culvert works for Peynircioğlu Stream	Apr-19	May-19	Oct-19	Oct-19	Feb-20
	Green pavements for Peynircioğlu Stream	Apr-19	May-19	Oct-19	Dec-19	Feb-20
Singular Green Infrastructure	Green fences	Apr-19	May-19	Oct-19	Dec-19	Feb-20
	Fruit walls	Apr-19	May-19	Oct-19	Dec-19	Feb-20
Non-Technical Interventions	Industrial Heritage Route Along the Izmir Urban Green	Apr-19	May-19	Oct-19	Dec-19	Feb-20

7 Conclusion

This report includes the information of current status of each NBS. IAc4, installation of parklets, IAc14 green covering shelter for car parking areas, IAc15 green permeable pavement around car parking area, IAc16 green shady structures for car parking area, IAc3 Arboreal areas around Car Park Areas (Planting 26 trees around car park and parklets), IAc10 Smart Soil (Biochar) into green shady structures are the actions which has been completed in the demo sites of Izmir. Implementation process of IAc5 Culvert works on Peynircioğlu stream on sub demo C has started. Implementation progress of IAc5 is given under section 4.5. On section 2.2 of this report detailed explanations about the implementation progress of parklets is given. For IAc3, IAc10, IAc14, IAc15 and IAc16 implementation steps are explained in detail under section 2.5. For the other NBSs the timetables showing the implementation plan in terms of dates can be found under subsections.

Tender processes of most of the interventions are completed. For the other actions tender processes will be completed within December 2019. All interventions planned to be implemented in Sub demo C will start after culvert works on Peynircioğlu stream is completed. It is possible to extend the content of the report with implementation details of all other actions after February 2020.