

2020 International Mayors Forum

Smart City Development in South Korea

2nd December 2020

Dr. Sangyoung Park

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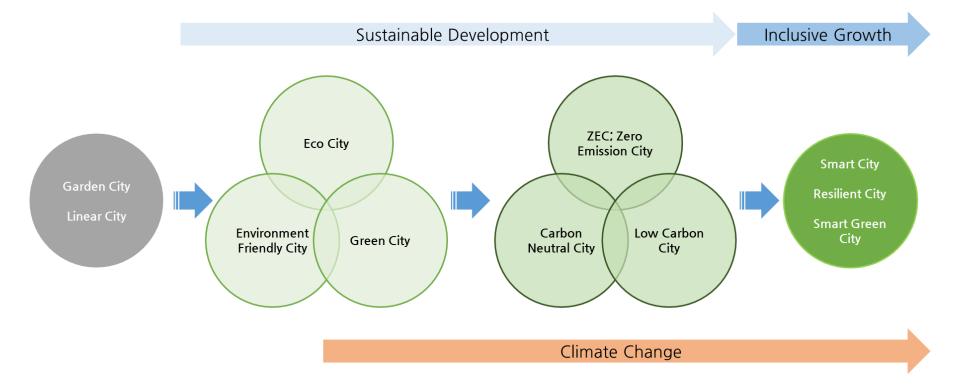


"The quality of service is inversely proportional to the distance, and the price of the service is proportional to the distance"

-Economic theory explaining metropolitanization

Digital Transformation & Pandemic

The paradigm of city has been constantly transforming, even now !!



Strategic Projects for Innovative Growth Engine of the State (2017.11)

" Human based Preparation of the 4th Industrial Revolution by Achieving

Economic Development and Resolving Social issues"

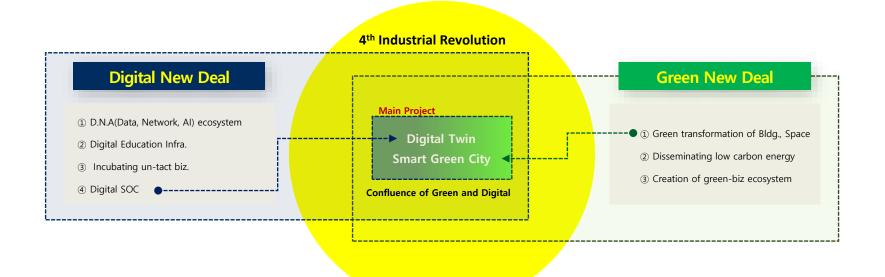


• Korean New Deal : Digital New Deal + Green New Deal (2020.07)

"National Strategy for a Great Transformation to share a national development strategy to support the country's recovery from the pandemic crisis and lead the global action against structural changes with the international community".

The Smart as well as Green city is the key strategies of Green New Deal in Korea

Introduction of Korean New Deal





The Future Proof City : Busan Eco-delta Smart City

🔲 Busan Gangseo-gu Office

백양산

16km

15km

Sasang Logistic District

Busan Eco Delta City Location

Gimhae

Busan Metropolitan City

Gimhae Airport

5km Pyeonggangcheon

Busan Eco Delta City Macdo River

West Nakdong River

Busan Eco Delta Smart City

Myun free e

Noksan Floodgate 🔳

15km

Shinho Logistic District

진우도

Noksan Domest Logistic District

đ **Busan New port** Nakdong River Barrier

을숙도

Nakdong River

Gimcheon Port

Busan port

Busan stn.

Busan Harbot Bridge

回 Busan Metropolitan City Ha

O Dec 2017~	Review candidate sites(37) for smart city pilot project			
O 29 th Jan 20	18 Announcement and Selection of Busan Eco Delta Smart City National Pilot Project (Presidential Committee on the Fourth Industrial Revolution)			
O 23 rd Apr 20	18 Selection of Master Planner (MP) and operation Task Force (MOLIT, Busan Metropolitan City, K-water) * (MP) Jaewon-Chon CEO of Exentry, (AP) Jong-Sung Hwang National Information Society Agency(NIA)			
1 6 th Jul 201	8 Announcement of Smart City Framework			
O 16 th Aug 20	18 Re-assignment of MP and Establishment and operation of National Pilot City General planning team * (MP) Jong-Sung Hwang National Information Society Agency, (AP) Inhyok Cha - Executive VP of SK telecom			

 Sep 2018 ~
 Operation of civic participation platform: Smartcity1st

 * 3Duration: 3 months (Sep~Nov) Contest of R&D testbed and Public Idea through online homepage and offline booth

26th Dec 2018 Announcement of Busan Eco Delta Smart City Master Plan



Overview & Busan Metropolitan City Locational Advantages of Busan Eco Delta Smart City

< Airport

Gyeongnam (Gimhae, Changwon)



West Nakdong Riv.

Maekdo

Peyonggang Stream

Busan Eco Delta City(Eco Delta City)

The mouth of Nakdong Riv.>

New Port >

Area	11.77 km²
Population	76,000 people(30K households
Functions	Residence, commerce, R&D, Logistics, and etc.
Project by	Busan Metropolitan City K-water Busan Metropolitan Corp.



Vision and Core Values of Busan Eco Delta Smart City

An innovative, growing global city that takes the future life forward by converging nature, human, and technology



Vision and Core Values of Busan Eco Delta Smart

City

Vision

Core Values

'Fostering the Technologies of the 4IR and Improving the quality of life'

As a Mecca for future industries, Busan EDC will implement the technologies of the 4th industrial revolution so that all citizens can receive balanced opportunities and benefits of inclusive growth and improve their quality of life in terms of education, culture, safety, and environment

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Leisure and culture Income and consumption Family and community

Inclusive growth

Quality of Life

Innovative

technologies

Equitable opportunities

En 2

Participation



Health

Key Areas

1 Space that contains Technoloc New Smart Growth Spatial planning	2 Technological Base Cloud Platform			
 Smart Life for future Urban planning to enable smart livir 	1. Digital Platform2. Augmented Reality platform3. Robot Platform			
 2) Smart streets connecting the nature technology 2. Smart Link for Sharing Environmental benefits of the city sheeveryone Blue & Green networks for 5-minute and green from anywhere in the city 3. Smart Place for Everyone Inclusive city adapting diversity Culture-front 4. Urban Planning for Smart City Five-innovations cluster Operational base as a platform 	 3 10 Innovative technologies that add values to quality of life Innovative Technologies 1. Life innovation with citybots 3. Intelligent administration and management 5. Zero-energy city 7. Smart healthcare 9. Smart safety 			
4 Future-Readiness 5 Citizen engage1.Creating an innovation industrial ecosystem1.Smarticty1st 2. Living Lab netwo			6 Glo	bal Cooperation

10 innovative technologies that improve quality of life



Next generation Urban management platform

Water specialized from the urban design phase

Waterfront Eco City Design

Develop as a most Iconic "GLOBAL" waterfront landmark locally and Improve the quality of life

장부산 에코델타 스마트시티가 바꿀



Urban Water Cycle Restoration

Solve water problems in existing cities based on advanced water management technology.

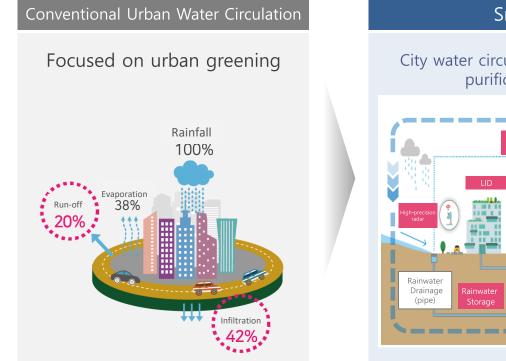
Create a global urban brand and improve the quality of life of citizens by leveraging water and waterfront

Develop as an attractive, people oriented city which connects nature-people-technology utilizing the potential of Semulmeori Waterfront where three rivers meet



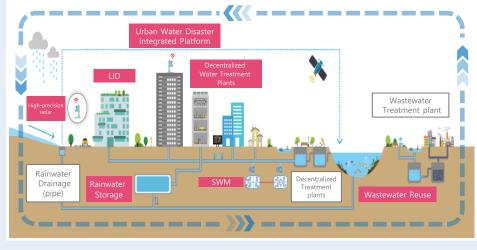
Paradigm shift from focusing on urban greening to the water circulation of the entire city

Restore the unconnected water circulation and create a city specialized in water which people can rely on



Smart City Water Circulation

City water circulation process including rainfall, river, water purification, sewage treatment and reuse



Adoption of smart water management technologies by K-water's 50-year water management know-hows

Introduce smart waterworks in new city for the first time in Korea \rightarrow Provides services such as quality and quantity of water, as well as drought and flood information

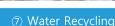


6 Smart Water Management (SWM)

Providing consumer-oriented services such as applying SWM technology to manage water quality and quantity in real time for the whole water supply process and providing real-time water quality information to the public





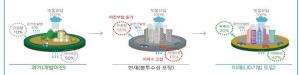


Process rainwater, sewage, and wastewater according to the p urpose, e.g., use them for housing, industry, agriculture, landsc aping, and river maintenance, among others.



③ Low Impact Development(LID)

Construction of customized green infrastructure to restore urban water circulation to buildings such as roads, parks, green areas, rivers, and public buildings



⑤ Decentralized Smart Water Treatment Plants (Pilot project)

Prevent secondary contamination/water outage and diversify water sources by installi ng compact water treatment facilities near consumers.



(8) Hydrothermal Energy System

Reduce the use of energy through the temperature differences of river water and raw water for heating and cooling.





Urban water-related disaster response system

Small-sized precipitation forecast radar and Water disaster management system

Small-sized precipitation forecast radar

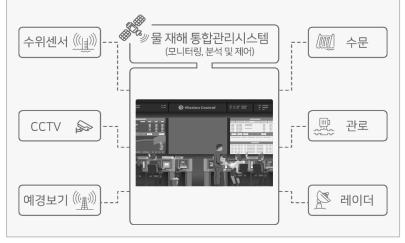
Installation and operation of high precision small rainfall radar to predict and respond to floods by analyzing the amount of rain falling in cities in real time



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Water disaster management system

Built an integrated urban water disaster management system that constantly monitors water management infrastructure such as river level, flood gates and drainage facilities





Urban water-related disaster response system

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Small-sized precipitation forecast radar

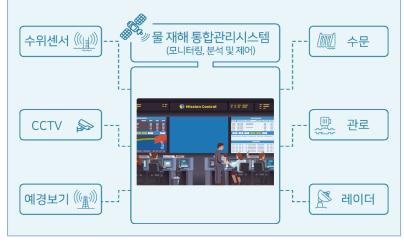
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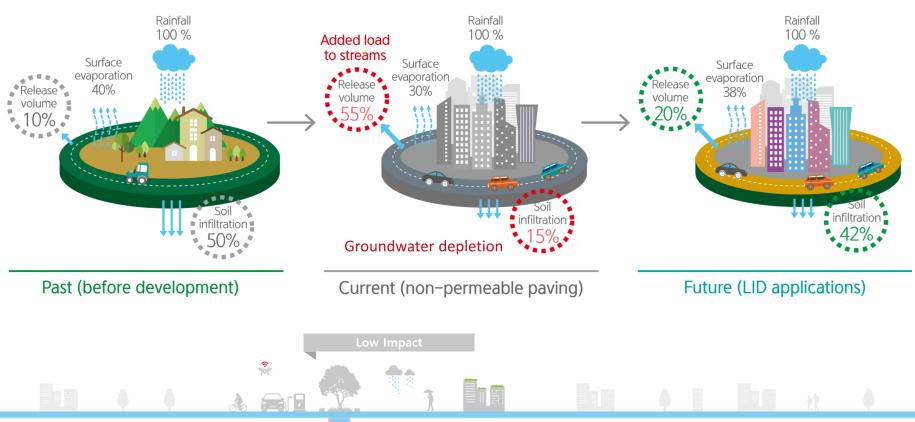




Low-impact development(LID)

Naturally structured city covered with greenery and gardens instead of concrete

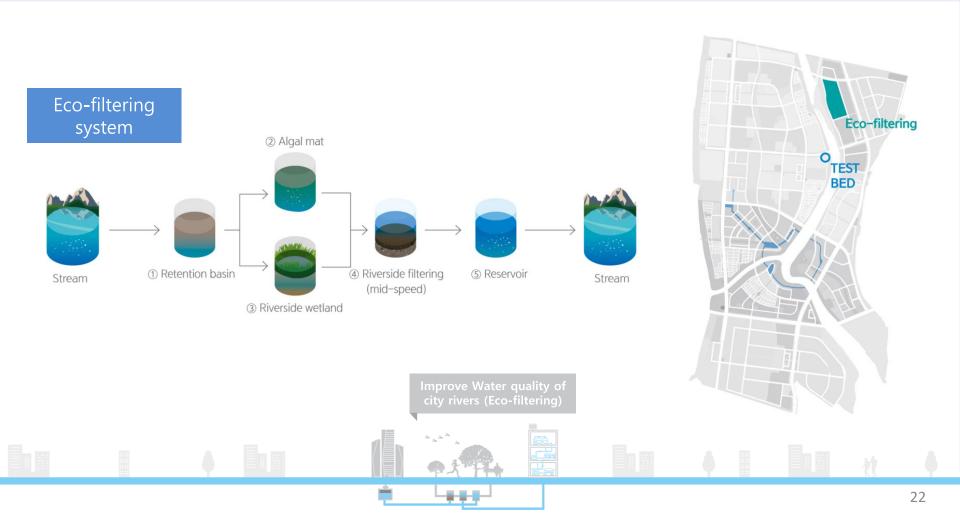
* Develop city that rainfall penetrates well into the soil





City stream quality improvement(Eco-filtering)

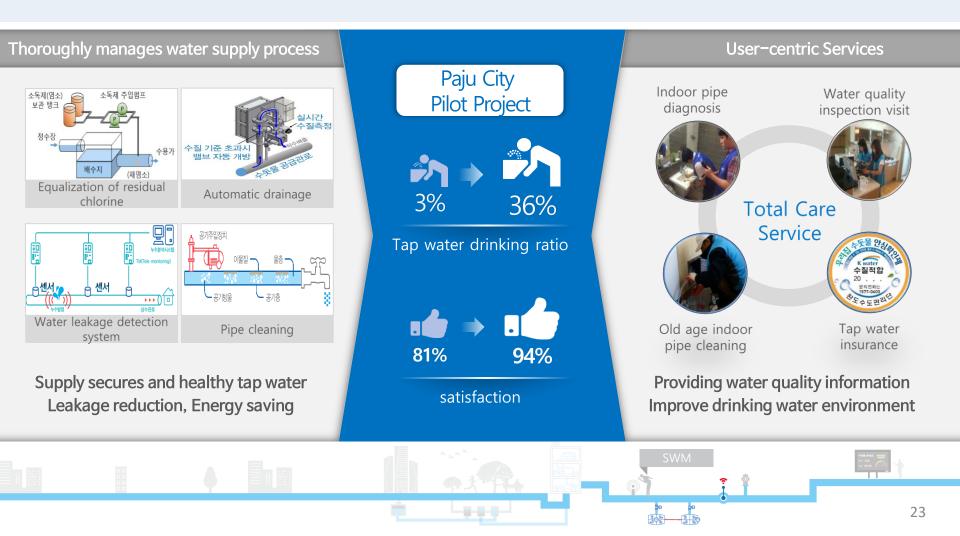
Consistently clean water & safe interaction with nature





SWM (Smart Water Management)

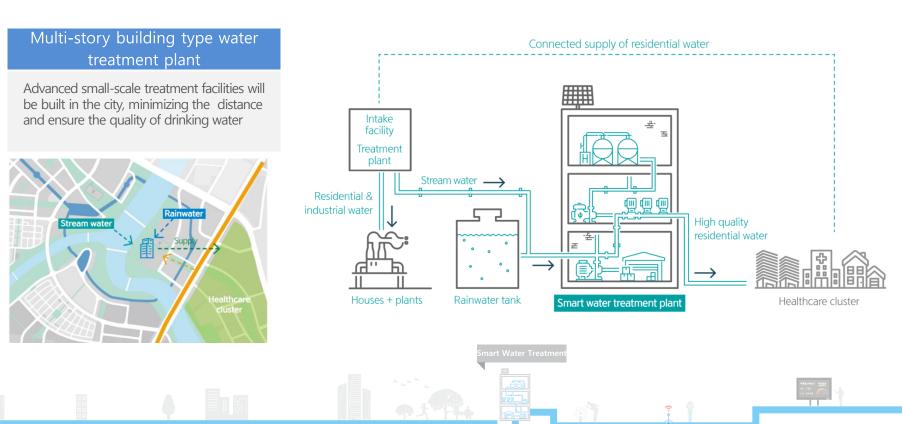
ICT application in water supply process from source to tap for real-time monitoring and remote control water quality and quantity





Smart water treatment plant(pilot)

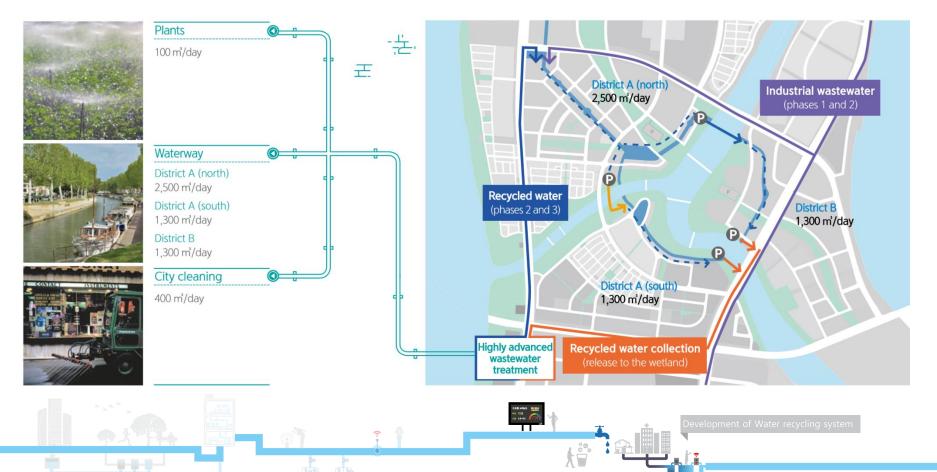
Small-sized treatment plants around the city supplying top quality water





Water recycling system

Using water in all part of the city more than once Waste water is reused for cleaning, to fill the waterway, and to water parks





Hydrothermal Energy

Recover the heat source of river, lake, and sea water directly or with a heat pump and use it for heating/cooling or as a hot water supply to buildings.



Smart Water City of Korea Busan Eco Delta Smart City

Thank you