<table>
<thead>
<tr>
<th>University of Seoul</th>
<th>South Korea</th>
<th>Youngmin Kim</th>
<th>Alternative Futures for Dongtan New Town</th>
</tr>
</thead>
<tbody>
<tr>
<td>Savannah College of Art and Design</td>
<td>USA</td>
<td>Christine Wacta</td>
<td>Savannah XXI–Savannah 21st Century plan</td>
</tr>
</tbody>
</table>
Rhode Island School of Design

This project uses a community visualization survey to assess both concerns and possible responses to issues arising from storm surge and sea level rise in two neighborhoods in Portsmouth, Rhode Island, USA. The survey responses, together with information gathered from subject area experts and town officials, formed the basis for scenario development. Scenario visualizations are currently being used to inform real-world planning decisions.

Adaptation in Portsmouth, RI USA

Current 2020

Early adopter 2035

Early adopter 2050

SDG 2050

Late adopter 2035

Late adopter 2050

SDG 2050

Non-adopter 2050

SDG 2050
### Rhode Island School of Design

**Requirements**

- Residents are able to remain in their homes as long as possible.
- Preservation of marshes as natural storm buffers and to prevent nutrient pollution.
- Preservation of beaches.
- Maintain housing affordability (avoid strategies likely to cause gentrification).

### Adaptation in Portsmouth, RI USA

**Innovations**

- **GRN 2035 16**: Coastal Urban Resilience: Modeling for Risk Reduction.
- **GRN 2035 17**: Green Infrastructure for Coastal Resilience.
- **GRN 2035/2050 8**: Ecosystem Services of Green Infrastructure.
- **TLD**: Use of “Thin Layer Deposition” to elevate marshes.
- **AWWT**: Use of small scale alternative self-contained waste water treatment systems.
Rhode Island School of Design

Adaptation in Portsmouth, RI USA

- Consensus and enthusiasm for improving disaster preparedness and response.
- Paralysis: Existential issues facing low lying areas disrupt a cherished way of life.

Housing affordability +
Culture & way of life

+ tied to

Vulnerability / lack of infrastructure +
High hazard exposure

tied to
Rhode Island School of Design

Adaptation in Portsmouth, RI USA

Survey Visualizations (.33 meter SLR left, .9 meter SLR middle, Hurricane Carol, right)

Visualizations: Peter Stempel
Rhode Island School of Design

Adaptation in Portsmouth, RI USA

Visualization Survey

- 115 Respondents, distributed between neighborhoods and town at large.
- Matches town demography with the exception of age.
- Respondent expectations for SLR align with projections.
- Used to identify priorities and criteria for evaluation.

Community Concerns

Evaluation Criteria

- Character of place
- Town revenue
- Housing affordability
- Cost in taxes
- Ability to stay in home
- Effect on marshes

SLR Expectation

- 1' SLR
- 3' SLR
An effective combination: 2035 Early-Adopter and “Realistic” 2050 Non-Adopter

Visualizations: Peter Stempel
This project was nourished by Flo’s Clam Shack. Founded in a chicken coop in 1936. Destroyed by hurricanes and rebuilt in 1938, 1954, 1980, 1985, 1991. It’s that good!

Funded by:
Rhode Island School of Design
Adaptation in Portsmouth, RI USA

THE UNIVERSITY OF RHODE ISLAND
GRADUATE SCHOOL OF OCEANOGRAPHY

COASTAL RESOURCES CENTER

RI-C-AIM
RHODE ISLAND CONSORTIUM FOR
Coastal Ecology Assessment
Innovation & Modeling

www.flosclamshack.com

This project aims to reshape the relationship between the City of Winneba and Muni Lagoon in Ghana which is currently under immense pressure of environmental degradation and fast urban growth. By focusing on the interface between the city and lagoon, this study pictures how proposed innovations and interventions might impact different systems in the future. These innovations and interventions include a new Agriculture Center that teaches sustainable farming practices, a “no-build” growth boundary defined by productive trees, a Lagoon Research Center that also serves as a visitor center, a new aquaculture farm that replaces the existing salt ponds, community parks that can provide important services to communities, and so on. Different scenarios generated by combining these projects and growth simulations are evaluated according to the United Nation’s Sustainable Development Goals. The conclusions from this study will be used to inform the next round of community engagement and grant application in this project.
Requirements and Assumptions

- 3% urban population growth rate for the next 30 years, and built-up areas will expand accordingly.
- Because of overfishing and population growth, food production pressure will increase. Cropland will grow by 1% annually.
- The economy will grow, allowing more resources to be invested in sustainable development.
- New urban development will occur in areas with good accessibility, flat land, and easy acquisition.
- Climate change will bring more rainfall and more floods.

Innovations and Interventions

- WAT 3 Conserve agricultural water by adopting best practice.
- WAT 8 Constructed wetlands to retain water and treat waste water.
- AGR 4 Improve agricultural practices and productivity.
- AGR 5 Agritourism.
- AGR 13 Aquaponics.
- GRN 1 Create resilient landscapes.
- GRN 17 Green infrastructure for coastal resilience.
- GRN 18 Mangroves for coastal resilience.
- MIX 10 Increase urban density for new development by 50%.
- INS 6 Improve environmental education.
Dongtan new town, 3,305.4 ha land 30km south from Seoul, was planned as the southern hub of the Seoul metropolitan region based on high tech industry. The project site is located at the boundary of Dongtan 1 and 2, which are the area developed in two phases. The site is surrounded by natural resources at the same time it provides the attractive site for the future development. Currently the land is vacant looking for new alternatives.
Requirements:

- The largest age group in Dongtan is 30-39 in 2020, the major age group of Dongtan is expected to be 60-69 in 2050.
- High demand for health and leisure industry in 2050 due to aging population.
- Introducing high speed train (GTX) connecting Seoul in 30 min in 2035.
- Environmental quality of the city will be improved due to city policy and restoration plan by 2050.
- Traditional motor-based transportation will be substituted to new transportation systems.

Innovations:

- Global 2 Populations will grow older.
- Global 6 Transportation infrastructure will be more automated.
- GRN 1 Resilient landscape Infrastructure.
- GRN 9 Connectivity and elements.
- GRN 12 Green roofs.
- GRN 13 Regaining the riparian ecosystem.
- TRA 1 The autonomous revolution.
- TRA 2 High speed rail.
- RES 11 Adaptable housing will increase.
- MIX 1 Mixed use development.
- MIX 12 Innovation districts.
- MIX 14 Sustainable neighborhood pattern and design.
- INS 2 The future of healthcare technology.
- INS 6 Education for the future.
The plan for Scenario A consists of 3 districts and waterfront as an urban connector.

1) The northern district provides a new amenity for the entire city with the urban resort and medical programs.
2) The central district is high-density mixed-use area.
3) The southern district is mainly residential area with commercial nodes. The tram system connects different residential zones, commercial and civic programs.
Scenario A provides more housings and programs to the city while preparing strategies for the aging population.

- The urban resort for the new silver generation and the complex providing high-end medical service with hotel residencies are proposed in the northern district of the site.

- At the central and southern district, mixed-use urban programs based on the modular structures provide a more convenient environment for seniors.

- The waterfront connects three developed areas with surrounding natural resources. It works as an ecological and cultural spine of the city.
The plan for Scenario B consists of 8 zones and river restoration project.

1) The scenario focuses on restoring ecological condition of the site from 2020 to 2035.
2) 8 zones are inserted into the natural settings after 2035.
3) 8 zones aims to introduce new types of high-tech industry combined with educational programs.
4) Each zone has different characteristic but none of the zone consists of single program.
5) The scenario creates more environmental friendly communities with easy access to natural resources.
University of Seoul

Scenario B

Alternative futures for Dongtan New Town, South Korea

Residential Zone

- Scenario B assumes that the development of the site pauses for 15 years.
- The levy systems are partially deconstructed to recover the natural condition of the river. Series of wetlands are introduced along the river.
- The development starting in 2035 will be focused on strategic area preserving a large number of lands.
- The traditional motor vehicle will be banned in the new development and alternative transportation system will be introduced.
- High-density development areas provide new high-tech industry combined with education programs.
Impact Evaluation (Impact Model)

Indicator description
A. Land-use indicator
   1. IGC system proportion
   2. Land-use proportion (Land cover)

B. Development indicator
   1. Urbanized area proportion
   2. Residential area proportion

C. Ecological indicator
   1. Carbon storage & Carbon emission proportion
      • Carbon storage : Biomass x Area(Total)
      • Carbon emission : Use of population-based formulas
   2. Volume of green space per person
   3. Ecological volume ratio: The sum of the arboreal area-ratio, the shrub area ratio, and the grass area ratio.
      • Example: 20 + 70 + 20 = 110%

Scenario C: Non-adopter (2050)
- Land-use types: 3(2050)
- Urbanized area ratio: 2%(2020)→55%(2050)
- Residential area ratio: 2% (2020)→4%(2050)
- Emission & storage ratio: 10:90(2020)→10:90(2050)
- Volume of green space : 97,000 m³/per (2050)

Land area = 100%
- the arboreal = 20%
- the shrub = 70%
- the grass = 20%
### Impact Evaluation (Impact Model)

#### Scenario A: Early adopter (2050)
- Land-use types: 3(2020)→7(2035)→9(2050)
- Urbanized area ratio: 12%(2020)→40%(2035)→53%(2050)
- Resident population: 2% (2020)→81%(2035)→92%(2050)
- Volume of green space : 400 m3/per (2050)

#### Scenario B: Later adopter (2050)
- Land-use types: 3(2020)→11(2050)
- Urbanized area ratio: 12%(2020)→40%(2050)
- Residential area ratio: 2% (2020)→58%(2050)
- Volume of green space : 1,800 m3/per (2050)
University of Seoul, Graduate School Program
Collaboration design studio in Landscape Architecture & Urban Design

### Participants

#### Project Lead
- **Dept. of Landscape Architecture**
  - Prof. Young-min Kim (Coordinator)
- **Dept. of Urban Planning & Design**
  - Prof. Sukyeon Yoo

#### Teaching Assistant
- **Planning & Design**
  - Yongjun Jang (UPD)
- **GIS Analysis**
  - Jaeyeon Choi (LA)

#### Participants
- **GIS Analysis**
  - Aida Ayano (LA)
  - Youngwoo Jo (LA)

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### Alternative futures for Dongtan New Town, South Korea 🌈

**Project A**
- Hyunjung Kim (LA)
- Danbi Kim (LA)
- Sohyung Jin (LA)
- Jeongeun Park (LA)
- Daeun Jung (UPD)
- Jisang Hwang (UPD)

**Project B**
- Gyusoung Kim (LA)
- Yoongyeong Choi (LA)
- Jeongwon Yoon (LA)
- Yaoxue Li (LA)
- Heejin Park (LA)
- Ying Zhang (UPD)
Mariposa County is heavily reliant on tourism for their economy. The number of people living there is very low, and while their natural landscape is beautiful and one of their greatest assets, they are not using it to its full advantage. Mariposa county strives to be as much of a destination as nearby Yosemite valley, and in doing so, thrive at an economic and cultural level.
Requirements:
- Increase economic gains for the county
- Develop the county's sense of community
- Connect all major communities
- Showcase Mariposa county natural beauty

Innovations:
- GRN 12 Green Roofs
- WAT 02 Water Retention
- ENE 01 Renewable Energy Sources
- ENE 13 Development in Battery Storage
- TRA 14 Bike Shares and E-Bikes
- TRA 16 Transportation Network with Sustainable Energy Infrastructure
- IND\COM 16 The Future of Small Businesses
- RES 01 Building Solar Integration
- RES 11 Adaptable Housing
- MIX 01 Mixed use Development
Mariposa Background

- Mariposa county is very rural, zero real "cities", no more than 2500 people at the most
- Environment is large asset, the beauty of the low Sierras is undersold and understated
- Mariposa's economy relies heavily on tourism (5 million people annually)
- Mariposa county suffers from periodic wildfires due to history of wildfire suppression
Major Issues

- Lack of community involvement and identity
- Limited economic opportunities
- Obesity problem larger than California average (issue with public health)
- Entire county is under branded given its assets and rich heritage
- Wildfires devastate Mariposa in increasing frequency

Project Approach

- Connect all major communities
- Make Mariposa a destination instead of a means to get to Yosemite
- Create a better way for tourists and locals to experience Mariposa county’s natural landscape
California Polytechnic State University San Luis Obispo  Connection through Hubs & Trails

Trail Master Plan

Goals

• Increase connectivity through largest communities
• Increase active lifestyles for Mariposa locals
• Stimulate tourism market and economic growth
• Create trail system to passively combat wildfires
Mariposa Outreach community Center
Location: Downtown Mariposa

2 Main Concerns

- Community Development + Gathering Space
- Education of Wildfires

SUMMER
DATE: July 21
TIME: 12:00 P.M.
High afternoon summer is also blocked by roofing, while allowing lower angles in to reflect off the ceiling of the building and provide natural daylight.

WINTER
DATE: December 21
TIME: 12:00 P.M.
This diagram demonstrates that low winter sun can enter the building through the clerestory windows in the roof.
Bio Hubs

- Connect major communities of Mariposa county
- County Economic Growth
- Flexible use between tourism and wildfire management
- Development of self-sustaining communities

Connection through Hubs & Trails

- Mariposa County Economic Growth
- Flexible use between tourism and wildfire management
- Development of self-sustaining communities
Redefining WUI

- Residential Development
- Fire break protective border and access routes
- Connecting trail system
- Recreational park within fire breaks
Urban Revitalization of a US Rust Belt City

Utica, New York

CIRCA 1850

CIRCA 2019
RUST BELT - Derogatory term for an informal region of the United States that experienced industrial decline starting around 1980.

- Aging of a generation of factories
- Relative decline of the manufacturing sector
- Unemployment to workers
- Increased police and welfare costs to cities
- Decline in tax revenues.
- Loss of electoral votes, and overall decline in industry and economy.
Urban Revitalization of a US Rust Belt City
Urban Revitalization of a US Rust Belt City

Utica, New York is typical of many "rust belt" communities in the US that is searching for ways to boost future economic prospects. The current plan is to replace existing hospitals with a new hospital campus. A 2015 analysis considered multiple sites in the area. The project goals are:

- To consolidate into a single facility
- Move facility within county population center
- Comply with provisions of $300M state grant
Requirements:

- Populations Will Grow Older
- Populations Will Be Concentrated in Urban Areas
- The Built Environment Will Be More Networked and Smarter
- Pollution Concerns Intensify

Innovations:

- Water (WAT) - 1 Water Crisis: Address Access to Clean Water; 2 Water Retention; 8 Bioretention
- Green Infrastructure (GRN) - 1 Resilient Landscape Infrastructure; 3 Integrated Vegetated Stormwater Infrastructure; 4 Linear Vegetated Corridors as Linear Parks; 7 Connectivity for Resiliency; 8 Ecosystem Services of Green Infrastructure; 12 Green Roofs; 13 Restoring the Riparian Ecosystem;
- Transportation (TRA) - 6 Smart Cars for a Smarter Future; 15 Integrated Transportation and Energy Infrastructure
- Mixed Housing and Commercial (MIX) - 1 Mixed Use Development; 3 Citizen-responsive Smart Cities; 10 Managing High Density Locally; 14 Compact Sustainable Neighborhoods; 16 Sustainable Urban Infrastructure
- Institutional (INS) - 2 Future Healthcare Technology; 5 Future Healthcare Choices; 12 Accommodating Street Festivals
Contemporary cities devote up to 70% of public space to accommodate motor vehicles, even though no more than 25% is suggested for a sustainable design (Mueller et al., 2019). The City of Los Angeles is no exception. A vast and enormously diverse metropolitan area with over 4,000,000 residents, Los Angeles is notorious for its car-centric culture and transportation network. With 42% of residents living below the 200% Federal Poverty Level, an average of 4.72 acres of recreational space per 1,000 people, and only 36% of adults meeting recommended levels of physical activity, the City stands to benefit greatly from a transformative paradigm shift (Los Angeles County Department of Public Health, 2018).
Assumptions

- Population Will Continue to Grow
- Populations Will Grow Older
- Populations Will Be Concentrated in Urban Areas
- Pollution Concerns Intensify
- Global Temperature Will Rise, Climate Variability Will Increase

Innovations

- GRN 10 Green Urban Streets
- GRN 15 Climate Change Adaptation
- MIX 1 Mixed Use Development
- MIX 2 Custom-Built Placemaking
- MIX 14 Compact Sustainable Neighborhoods
- MIX 16 Sustainable Urban Infrastructure
Project Team

- USC Geodesign Fellows
  - Jackson FitzGerald – Environmental Studies, B.S. | '22
  - Lilly Nie – Urban Studies & Planning, B.S. | '21
  - Sarah Ta – Geodesign, B.S. | '21
- Beau MacDonald – GIS Project Specialist – USC Spatial Sciences Institute
- Ha Nguyen – Senior Resource Specialist – Metropolitan Water District of SoCal
- John P. Wilson – Professor and Founding Director – USC Spatial Sciences Institute
Next Steps

1. Invite the following stakeholders to participate in a Superblocks Workshop
   - Director of Sustainability from Los Angeles Mayor’s Office
   - Director of Resilience from Los Angeles Mayor’s Office
   - Selected departments of City of Los Angeles: City Planning, Transportation, Recreation and Parks, Neighborhood Empowerment, Sanitation, Water and Power
   - Selected public agencies: Metropolitan Transportation Authority, California Department of Transportation, SoCal Gas
   - Selected NGOs: The Trust for Public Land, TreePeople, Los Angeles Neighborhood Land Trust
   - Residents
Next Steps

2. Prepare and distribute report to
   - City of Los Angeles Mayor
   - City of Los Angeles Council Members
   - City of Los Angeles Department Heads
   - Other public agencies: County of Los Angeles, South Coast Air Quality Management District
   - Neighborhood Council representatives
   - Other NGOs
   - All participants of the Superblocks Workshop
Next Steps

3. Follow up and explore opportunities for implementing superblocks

4. Obtain funding to conduct neighborhood health assessments prior to and following the implementation of superblocks to verify expected outcomes and their impacts on social cohesion, active life styles and resident’s health
The threats of global warming with the sea level rise, the biodiversity at risk, the socioeconomic and cultural transitions, the forecasts of an increase in urban population, the changes in transport and urban forms... These are constraints faced by coastal cities such as Savannah. This proposal develops design scenarios that address main issues of flooding in Savannah. Scenarios explore integrating robust resilience measures to leverage sea rise and adopt more sustainable methods of generating energy, food, and water to reduce the city’s carbon footprint.
Requirements
- Population Will Continue to Grow In Urban Areas.
- Supply and Distribution of Energy Will Need Innovation in Order to Satisfy Rising Demand.
- Transportation Will Become More Automated.
- The Built Environment Will Be More Networked and Smarter.
- Global Temperature Will rise, Climate Variability Will Increase.
- Sea Levels Will Rise.
- Freshwater Scarcity Will Become More Prevalent.
- Food Production Pressures Will Increase.
- Pollution Concerns Will Intensify.

Innovations
- AGR 13 Aquaponics
- AGR 17 Algae as Food
- ENE 15 Harbor-cleaning Devices
- GRN 1 Resilient Landscape Infrastructure
- GRN 9 Connected Green Infrastructure
- GRN 16 Coastal Urban Resilience
- GRN 17 Resilient Green Coastal Infrastructure
- MIX 2 Custom-build Place-making
- MIX 6 Technology And Connectivity
- MIX 9 Population Distribution & Urban Growth
- MIX 10 Managing High Density Locally
- MIX 14 Compact Sustainable Neighborhoods
- TRA 1 Autonomous Vehicle Revolution
- TRA 5 Hyperloop Transport
- TRA 6 Smart Cars for A Smarter Future
- WAT 1 Water Crisis: Address Access to Clean Water
Problems and goals

**Mobility**
- Transportation – hyperloop - light rail - Bike highways - walkable pathways - 50% less asphalt.

**Growth**
- Densify - increase of housing - Maintain a competitive market - Entrepreneurs to growth business - New transportation system to connect. **Stimulus**
- Tech Hub - tech industry - Mass startup center.

**Resilience**
- Flood gates - flood berms on city edge to prevent flooding - natural urban edge - Sustainability
- Algae farms for clean air and energy
- Desalination for clean water - Fish farms for food.

**Integration**
- More housing for citizens in city center to lessen commute - Integration of the natural amenities of the city within close proximity to housing and industry

**Project Workflow**

**Technology Workflow**
Step One: Urban Drift

This step consists on exploring the street of Savannah to record the spatial atmosphere that social activities and material things, phenomena or processes take on in geography. The urban drift captures an overall sense of social space typical of a time, place, culture, quality of the streets, the energy, the experiential and emotional state of the user as he/she go through the city. This is done using tracking application on phone.
Step Two: Spatialization of DATA (Urban Drift + Census + city), Analysis-crossing and 3D translation.

Suitability analysis yields five urgent issues that will be considered in this proposal.

1. **Mobility**
   - Transportation – hyperloop - light rail - Bike

2. **Growth**
   - Densify to meet future prediction of population

3. **Stimulus**
   - Provide a structure to build and retain the city’s intellectual capacity.

4. **Resilience**
   - Find innovative approaches to mitigate the sea level rise.

5. **Integration**
   - Create structure for integrating resilience approach through participatory design charrettes.
Analysis of Employment comparison by street in Savannah in 2018
1. **Growth:** Meeting the growing urban population with solutions that are sustainable, flexible and better adapted to future urban living.


TO SERVE THE UNPREDICTABLE AND FLUCTUATING NEEDS OF A DYNAMIC POPULATION, PREFABRICATED MODULAR HOUSING UNITS CAN BE CONFIGURED TO QUICKLY CONSTRUCT AFFORDABLE HOUSING WITHOUT SACRIFICING ON COMFORT AND QUALITY OF LIFE.
2. Connectivity:
A multimodal transportation network that uses advanced technology to maximize efficiency and coverage.

**Video:** The elevated system helps lessen the ground and encouraging more people to use the city streets.
3. **Stimulus**: City intellectual capital

This scenario affords the city to retain its intellectual and creative talents after graduation. Transforming the industrial area of Savannah into a Tech HUB for innovative job creation. Hutchinson Islands (North of Savannah River) presents a great opportunity for city expansion. This will help the city retention of its intellectual capital with a Tech-HUB that will help Savannah.
4. Sustainability: A strong commitment for using Savannah’s natural resources in an innovative way.

The Savannah river and the ocean afford Savannah the status of reservoir and a solution to clean water process and distribution toward other cities.

The large algae bays created East and West of Savannah will generate clean oxygen while absorbing grey water contaminants.

Microalgae harvested from the bays and processed to make biodiesel. Process is housed under a public park structure that sits in the wetlands.

Using desalination, Savannah and Atlanta can have clean drinking water from the largest water source: the ocean.
Transforming the rising water threat into a unique experience for the user by using topography to create new edges that serve as waterproof barrier for storm surges while providing a unique green landscape for outdoors interaction.

The integration of green to the edge provide a double benefit to the city. 1- add to the green infrastructure of the city. 2- provide a place for the citizen to interact in nature and be educated about the process.
Hutchinson Island as Savannah’s Tech-HUB: Technological innovation is on the rise, the Internet of thing IoT and others constantly evolving make automation and smart approach part of the basis for future business processes. Successful business will not survive running without smart integration of technology. Savannah will be ready with this tech Hub. New job and new discipline will be created in order to shift the conversation.
ALTERNATIVE FUTURES FOR ZARIA CULTURAL LANDSCAPE

Presenter

Maimuna Saleh-Bala PhD
Chair Professional Practice and Policy (IFLA Africa)
Traditional space at household level

1. Kofar Gida – outdoor entrance
2. Zaure – entrance porch
3. Tsakar Gida – the court yard
4. Bayan Gida – the backyard

Background

The existing significant physical features of Zaria cultural landscapes are:

1. Ganiwa – the city wall
2. Kofa – the eight city gates
3. Gidan Bakwa- the royal place of Zaria (fada)
4. Zaria Juma’a Mosque
5. Kasuwan Zaria- the Zaria Market
6. Anguwanni - (Wards)
Objectives

- Identify challenges of the present cultural landscape configuration
- Propose alternative future interventions for Zaria city
- Indicate and address the SDGs captured in the future scenarios
Zaria is within the North Central Guinean Savannah ecological zone of Nigeria. As a seat of tradition and culture established in 1536, its population is 955,522 with 95% in the 17.3km² walled city. The main features of the historic landscape are six. One of which are the wards (Anguwanni). The greatest challenge lies in increasing built-up areas in the wards, over the decades. The present land configuration affects the overall quality of life, livelihood, and environment.
Requirement

- Governance
- Quality of environment and sanitation
- Facilities, utilities and services
- Agricultural and industrial revitalization
- Energy

Innovations

- RES 1 Good hygiene and storm water management
- RES 6 Policy on environmental sanitation
- RES 4 Residential layout (all basic infrastructure)
- TRANS 6 Lanes for tricycle, motorcycle and pedestrian
- TRANS 5 Provision of monorail for efficient transport
- GI 5 Riparian line restoration
- GI 6 Carbon trade off
- COMIND 6 Skills acquisition center
- COMIND 2 Industrial development
- ENE 1 Renewable energy sources
- CULTH 2 Reclaiming Cultural Sites
## Addressing the SDGs on the cultural landscape

<table>
<thead>
<tr>
<th>HUB No.</th>
<th>INFRASTRUCTURES</th>
<th>POLICY/PROJECT</th>
<th>NOTES</th>
<th>SDGs</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>RESIDENTIAL</td>
<td>POLICY</td>
<td>Provision of residential Layout will help in deconjesting Zaria city.</td>
<td>1,2,7 and 11</td>
</tr>
<tr>
<td>1</td>
<td>TRANSPORTATION</td>
<td>PROJECT</td>
<td>Roads are being constructed within the city. There is also need to expand road construction to provide access and to support economic development and human well-being in Zaria.</td>
<td>1,2, and 9</td>
</tr>
<tr>
<td>1</td>
<td>WATER INFRASTRUCTURE</td>
<td>PROJECT</td>
<td>Additional reservoir water tanks and provision of boreholes to complement Zaria water works.</td>
<td>3,4 and 6</td>
</tr>
<tr>
<td>3</td>
<td>INSTITUTION</td>
<td>PROJECT</td>
<td>Provision of institutional buildings in areas that with growing population.</td>
<td>3,4</td>
</tr>
<tr>
<td>4</td>
<td>ENERGY INFRASTRUCTURE</td>
<td>PROJECT</td>
<td>Provision of the solar lights around the city wall in order complement the business activities that take place, especially at the city gates.</td>
<td>7,9 and 11</td>
</tr>
<tr>
<td>1</td>
<td>CULTURE</td>
<td>PROJECT</td>
<td>Completing the abandoned construction of city gates (Kofar Kona and Kofar Ban-Zazzau), and also rebuilding the Kafar Galadima that was not captured for the renovation.</td>
<td>11,17</td>
</tr>
<tr>
<td>2</td>
<td>CULTURE</td>
<td>POLICY</td>
<td>Adopting policies regarding the protection of cultural heritage in all dimension, both tangible and intangible. Adopt measures to promote the role of culture in the renovation of historic centres and in neighbourhood, district and regional development plan.</td>
<td>11.16 AND 17</td>
</tr>
<tr>
<td>4</td>
<td>CULTURE</td>
<td>POLICY/PROJECT</td>
<td>This is one of the biggest house that can be protected as landscape because it still maintain the cultural architectural pattern of Zaria. The house is said to be of Emir of Zazzau Dalhatu, it is famously known as Gidan Madaki Shehu.</td>
<td>9,11</td>
</tr>
</tbody>
</table>
Thank you