BAGUIO:
TRANSFORMATION TO
SMART CITY

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LOCAL GOVERNMENT OF BAGUIO CITY

BAGUIO CITY, PHILIPPINES

- **Population:** 360,000+
- **Area:** 57.51 sq km
- **Classification:** Highly Urbanized City

- Summer Capital of the Philippines
- Center for Education in Northern Luzon, Philippines
- Center for Tourism

Smart City Vision: Transform into a Smart Sustainable City that utilizes Smart City Digital Twin Technology by 2027.

BAGUIO'S URBAN TRANSFORMATION

THE GOAL: SUSTAINABLE URBAN DEVELOPMENT

The means by which the City will utilize its resources and space in a manner that meets the needs of its residents without negatively impacting residents' needs in the future.

SMART SUSTAINABLE BAGUIO

Baguio City uses **information and communications technology, big data analytics, machine learning and Artificial Intelligence** to enhance live-ability, workability, and sustainability

BAGUIO URBAN DIGITAL TWIN

The replica of Baguio City recreated in digital space, ready for simulation, dynamic monitoring, real-time diagnosis, and accurate prediction of the state of the City in real time environment

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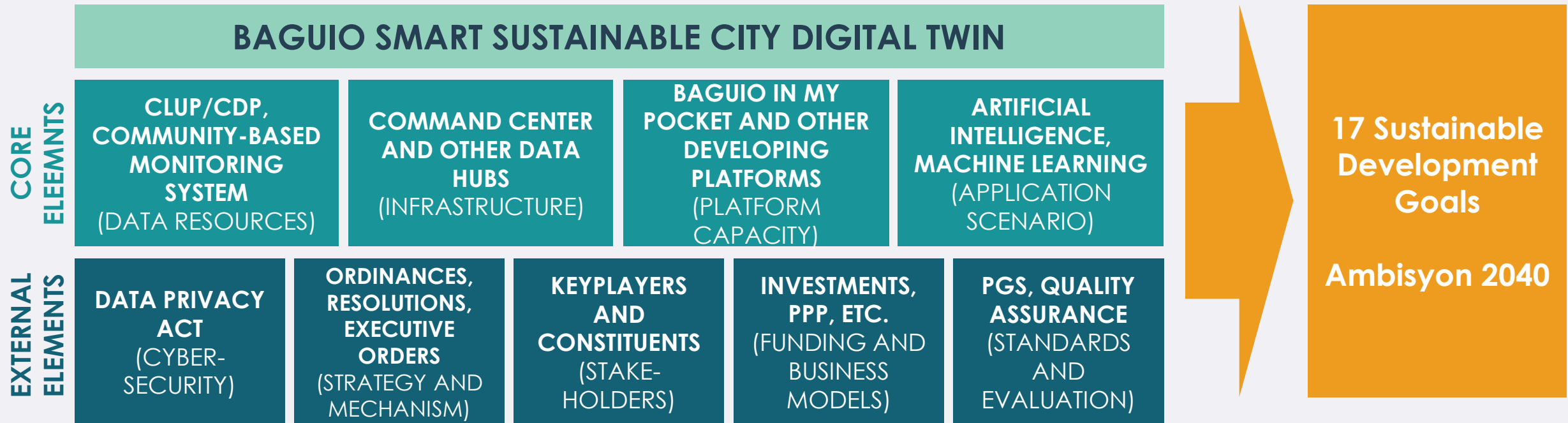
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INTERCONNECTIVITY

INTER-OPERABILITY

BAGUIO

SMART SUSTAINABLE CITY

BAGUIO SMART SUSTAINABLE CITY DIGITAL TWIN

CORE ELEEMNTS

| CLUP/CDP, COMMUNITY-BASED MONITORING SYSTEM (DATA RESOURCES) | COMMAND CENTER AND OTHER DATA HUBS (INFRASTRUCTURE) | BAGUIO IN MY POCKET AND OTHER DEVELOPING PLATFORMS (PLATFORM CAPACITY) | ARTIFICIAL INTELLIGENCE, MACHINE LEARNING (APPLICATION SCENARIO) |

EXTERNAL ELEMENTS

| DATA PRIVACY ACT (CYBER-SECURITY) | ORDINANCES, RESOLUTIONS, EXECUTIVE ORDERS (STRATEGY AND MECHANISM) | KEYPLAYERS AND CONSTITUENTS (STAKE-HOLDERS) | INVESTMENTS, PPP, ETC. (FUNDING AND BUSINESS MODELS) | PGS, QUALITY ASSURANCE (STANDARDS AND EVALUATION) |

17 Sustainable Development Goals

Ambisyon 2040

SMART CITY INFRASTRUCTURE

A smart operating model and data hub of the city of Baguio - connecting people and services, providing enhanced security, promoting high-end innovation, and sustainable development of urban landscape.

Photo Credits: ChaDventurestories

SMART CITY COMMAND CENTER OPERATIONS

Smart City Command Center

- Video Monitoring & Surveillance
- Traffic & Mobility Monitoring
- 911 Calling
- Flood Early Warning System
- Air Monitoring
- Water Monitoring

SMART CITY OPERATIONS

VIDEO MONITORING AND SURVEILLANCE

- 24/7 regular monitoring and viewing using high-end artificial intelligence enabled closed circuit televisions
- CCTV Video playback and extraction requests are immediately given action.

911 EMERGENCY CALLING

- Operators are on 24/7 shifting schedule

- Received calls are relayed to concerned authorities

AIR MONITORING

- **Project Minerva:** Air Monitoring system in partnership with UP and ACCess
- **Atmotube sensors** (both static and dynamic) have been deployed to various locations, vehicles, and personnel.
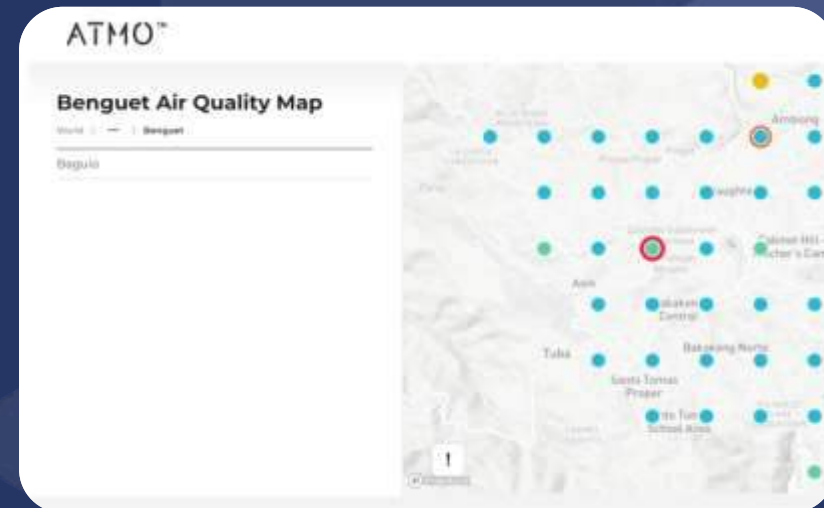
SMART CITY OPERATIONS

WATER MONITORING

- **Project Minerv**a: Water Monitoring system in partnership with UP and ACCess
- Water sensors are yet to be deployed at various strategic locations in the City, specifically at rivers.

FLOOD EARLY WARNING SYSTEM

- Five water level monitoring stations currently present at Baguio City (Ferguson Bridge, Sadjap Bridge, Brookspoint, Eagle Crest Bridge, and Camp 7)

TRAFFIC & MOBILITY MONITORING

- **High Level Scoping** are being conducted using data gathered from real-time traffic sensors installed at major streets and intersections at Baguio.
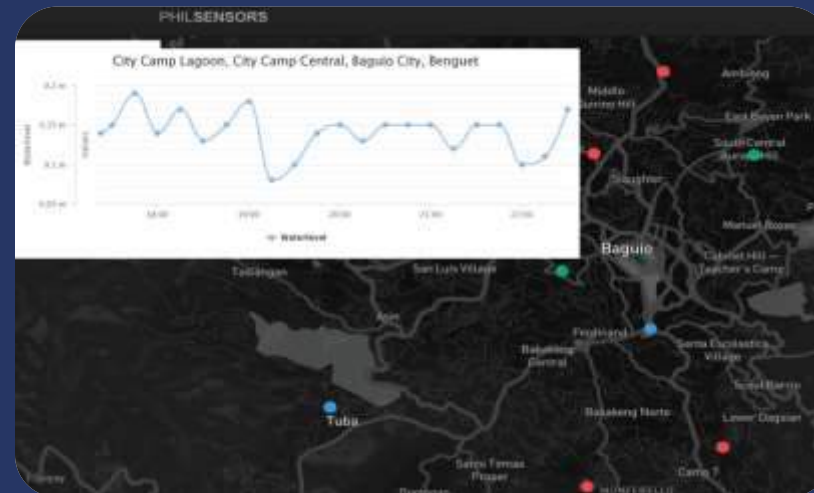- Mobility analysis revolve on traffic status, enforcement, and ecology

CBMS: BIG DATA

Community-Based Monitoring System

Water, Sanitation, Hygiene	Crime Victimization	Social Protection Programs	Housing Characteristics
Digital Economy	Financial Inclusion		Social Protection Programs
Food Security		Health	Disaster Risk Management
Economics	Entrepre-neurial Activities	Family Income	Food Consumption
Demographics	Migration	Education	Community/ Political Participation

- The Community Based Monitoring System (CBMS) is an organized technology-based system of collecting, processing, and validating necessary disaggregated data;

- To be used in local planning, program implementation, and impact monitoring;

- As a statistical activity, the CBMS entails a census of households with data generated are the compendium of localized facts, figures, and maps.

SMART CITY DIGITAL TWIN

GOAL

1. Solve the complexity and uncertainty of urban planning, design, construction, management, and services through simulation, monitoring, diagnosis, and control.

2. Establish the simultaneous operation of and interaction between the physical and digital dimensions of the city.

FEATURES

- Accurate mapping
- Analytical insight
- Virtual-real interaction
- Intelligent intervention

VISION

1. More intensive and efficient urban production and operation.

2. Liveable and convenient urban living spaces

3. Sustainable urban ecological environment

CLIMATE AND DISASTER RISK ASSESSMENT (SINKHOLE MAPPING)

ZONING AND HERITAGE PLANNING
(BAGUIO CITY CENTRAL BUSINESS DISTRICT)

LEGEND
- 🔴 Commercial
- 🟡 Residential
- 🔵 Institutional