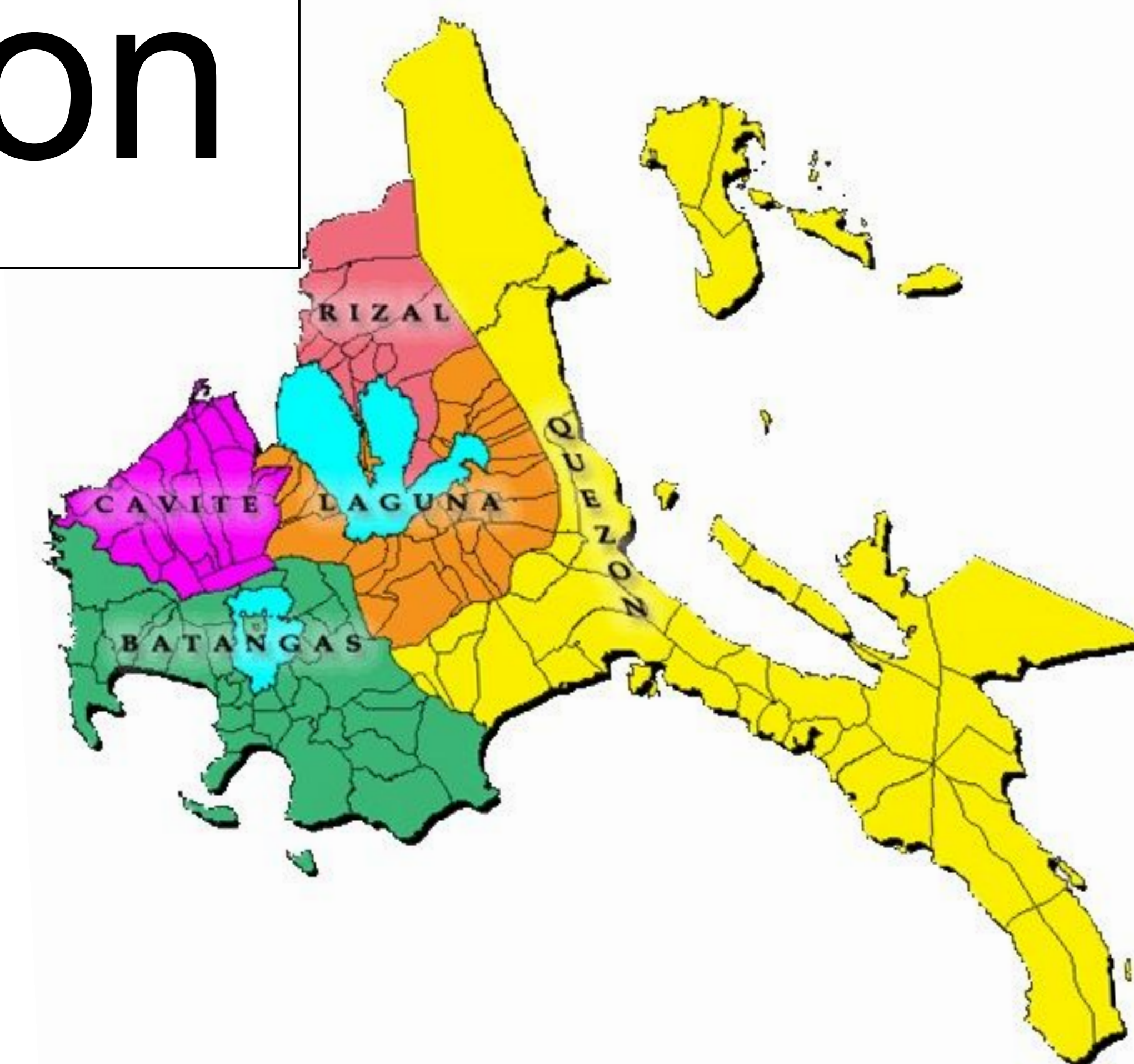


# Smart Transport Calabarzon



## Bringing the best of smart connectivity solutions to the transportation and traffic management professionals of the Philippines

Smart Transport Calabarzon is a multi-sector working group formed in response to the **2018 Smart Infrastructure Challenge**

### About Smart Infrastructure

The Institute of Electrical and Electronics Engineers (IEEE) focuses on 6 themes for Smart Infrastructure:

- Economy
- Mobility
- Environment
- People
- Lifestyle
- Governance



Source: *Smart Cities: The Future of Urban Areas, Part 3*

Smart Infrastructure uses IoT and connectivity to improve those themes for its citizens

### Smart Regions Flanders, Belgium

In Belgium, the "Smart Flanders" program supports 13 central cities in the Flanders region in their development into smart cities, including the port city of Antwerp. Smart Flanders does this by focusing on real-time open data and shared reference models and aims to stimulate cooperation between cities and actors from the quadruple helix. Leveraging its "learning by doing" approach, Smart Flanders focuses on making data as accessible as possible, with a view to maximum reuse as a basis for smarter services and applications. (source: *The power of collaboration for the digital innovations of Smart Cities*)



Calabarzon is positioned and capable of becoming the first reference model for the Philippines. Traffic and Transportation have been identified as a top-priority by the Calabarzon Regional Planning Council. Large and small municipalities can benefit from this regional data-sharing & reference model approach

### Quick Facts - Philippines

Population - 100,981,437

Land Area - 120,000 sq m

Pop density - 870 per sq mi

GDP - \$8,300 per capita

GDP Growth - 6.7%

Top exports - Semiconductors & Electronics Products, Transport Equipment

Total # of islands - >3000

Electricity from fossil fuels - 66%

Railways - 77km

Roadways - 216 378km

Paved roadways (% of total) - 28%

Fun facts - Home to the world's only island inside of a lake inside of an island inside of a lake inside of an island!!!



### Calabarzon

Population - 14.4M

	Population	Area	Pop Density
<u>Batangas</u>	2,694,335	1205	2200
<u>Cavite</u>	3,678,301	608	6000
<u>Laguna</u>	3,035,081	740	4100
<u>Quezon</u>	1,856,582	3471	540
<u>Rizal</u>	2,884,227	460	6200

19 Cities  
124 Municipalities

Exclude cities within National Capital Region (?) to focus our attention on non-metropolitan segments



**We Propose: Develop municipal-layer Reference Models split by pop density**

### What Problems are we solving?

1. Population growth and increased traffic congestion.
2. LGUs lack of resources and expertise to develop better transportation plans
3. Sensors are expensive, require expert operation and may only be needed temporarily in the planning process
4. A lack of regional scale collaboration and data-sharing can be a barrier to the planning process
5. Regional flooding and public health issues caused by transportation infrastructure
6. The impacts of regional flooding on the reliability and efficiency of regional transportation
7. Disabled peoples have virtually no accessibility options in most existing public infrastructure
8. Flooding and extreme weather events are getting more serious
9. The anticipated gap in understanding between local/traditional cultures and the vocabulary of the emerging international standards and best-practices



### Phase 1 - End of 2018

- Short-term leasing of AI-enabled smart traffic counting technologies for institutions and LGUs
- Provide assistance to smaller LGUs and municipalities with the preparation of Transport Management Plans required by the PUV Modernization Program
- Compilation of LGU plans into a reference model for other municipalities
- Data warehousing and custodianship by State Universities for incorporation into regional scale studies and planning
- Regional-scale data-processing and warehousing procedures at State Universities



### State University Contributions

- GIS data compilation and grooming
- Regional to city scale studies on natural hazards and transport
- A Transport and EV Centre for Excellence
- Next-generation disaster response technologies including the TOAD developed by BSU and a POC porous/absorbent highway



### P3 Partnerships

Public-Private-People Partnerships are a known and accepted means for generating financing for public infrastructure projects in the Philippines.

- Smart Transport Calabarzon was given an opportunity to present at the 2018 Transport Forum
- The ADB has funded transport terminals via P3 in Calabarzon in the past 10 years
- In August 2018, the ADB announced up to \$300M in P3 funding for the Philippines
- Smart Transport Calabarzon is seeking private international partners to participate in this growing sector
- Our group's top-priority for advancing our upcoming Smart Transport projects is **\*Financing for Local Government Units to implement the results of their transport planning process\***



### Our Project Portfolio

1. Data Collection and Transport Management Plans
2. Financing for Local-Government Units
3. Community Engagement
4. Flood-resilient (absorbent) roadways *\*POC with Lafarge Holcim\**
5. Data Platform buildout
6. Wheelchair lifts for pedway overpasses near hospitals *\*With World Disability Union\**
7. National Standards Development & Localization *\*With Venture Smarter?!? ;)*
8. Electric Vehicle Connectivity Network

### Project Co-ordinator

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sunE - sunEtrike.com



### Academic Engagement Lead

Eng Albertson Amante  
VP R&D/Extension - Batangas State University



### Government Engagement Lead

JR Fajardo  
Chairman - Binhi Producer's Cooperative  
Chairman & First-nominee - Binhi Partylist



### Transport Industry Engagement Lead

Edmund Araga  
VP - Electric Vehicle Association of the Philippines - evap.com.ph



### Community Engagement Lead

Ann Hazel Javier *\*interim\**  
Executive Director - Pusod - pusod.org  
Faculty - De La Salle Benilde



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