

Building Cities' Preparedness and Resilience to Disasters

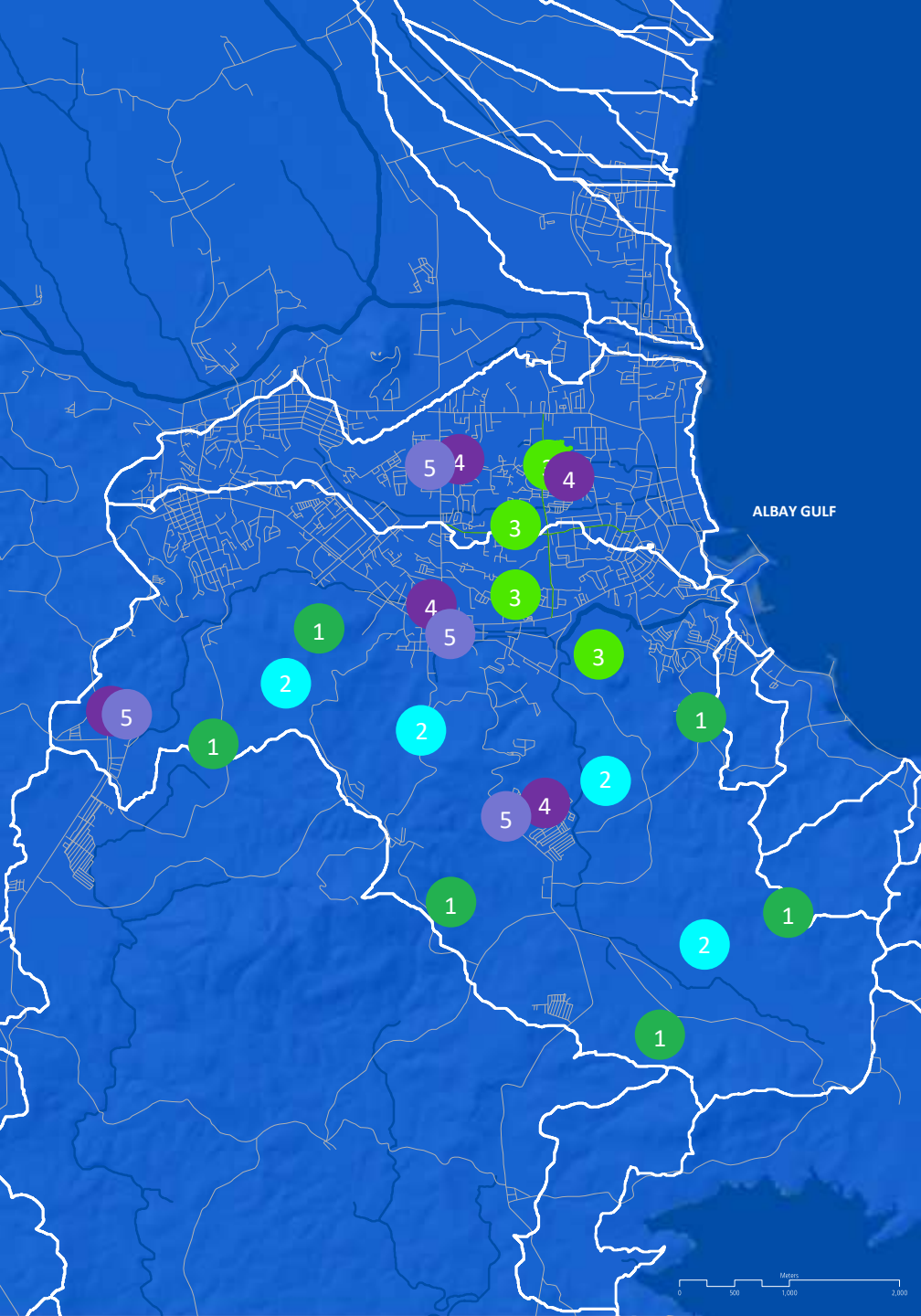


Sustainable Cities Summit

18 October 2019; Sofitel, Manila

URBAN ADAPTATION STRATEGY

FLOOD HAZARD (RIVER BASIN PERSPECTIVE)



1 Increasing forest cover
Enhance forest cover in upland areas to reduce volume and delay surface runoff during extreme rainfall events

2 Water impoundment/ Earth dams
Swales and earth dams in agricultural areas to detain rainwater

3 Water impoundment Public Parks
Swales and earth dams in agricultural areas to detain rainwater

4 Rainwater harvesting at the building level
Harvesting rainwater for non-potable domestic uses. Can also reduce demand on potable piped water.

5 Permeable urban landscape
Use of permeable tiles in the development of sidewalks, and open parking lots

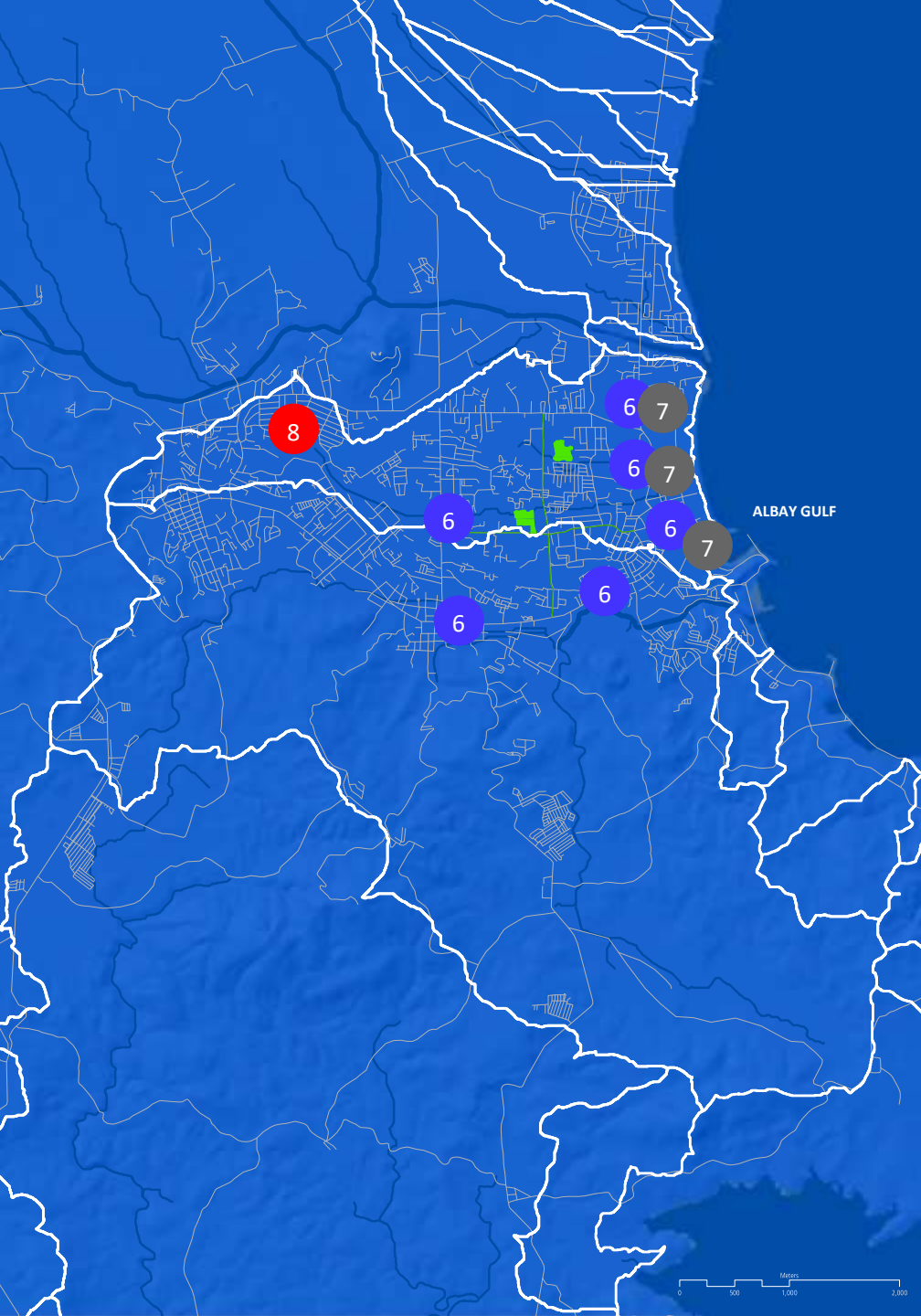
6 Flood Resilient Building and site design
Designing sites and buildings that promotes structural resilience, safety of people and facilitates evacuation and rescue.

7 Reclaiming Wetlands
Utilizing wetlands as catchment of excess surface runoff and also to avoid future exposure of built spaces.

8 Legazpi-Daraga Policy Interfacing
Inter-city/municipality harmonization of urban design policies/regulations

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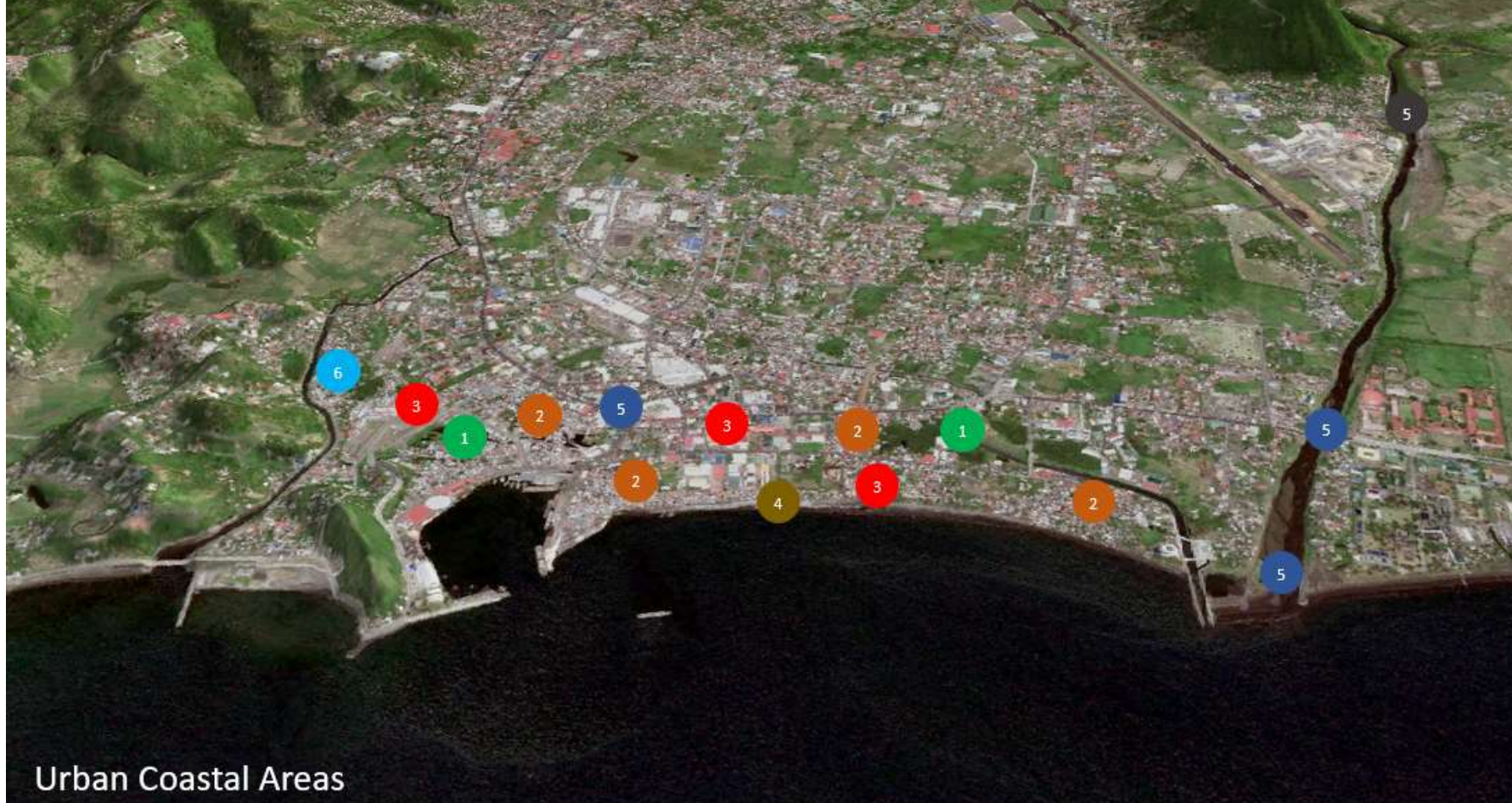
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Legazpi-Daraga Policy Interfacing

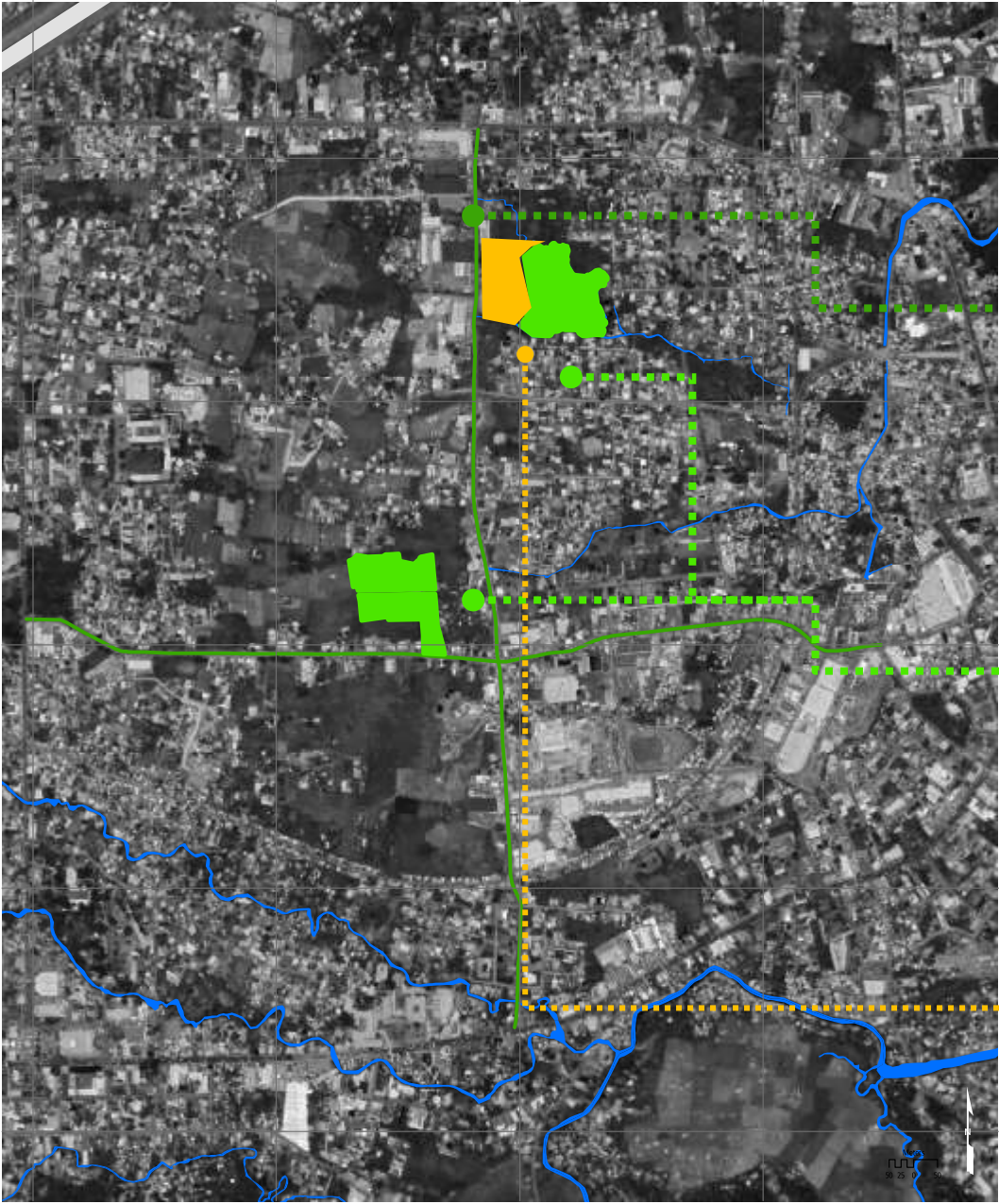
Inter-city/municipality harmonization of urban design policies/regulations



Urban Coastal Areas

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|---|---|--|--|--|---|
| <p>1 Restore biodiversity along the coast</p> <p>Restoration of wetlands and mangroves to accommodate excess flood, filter surface waters to enhance water quality along the coast.</p> <p>Increase sinks for greenhouse gas sequestration.</p> <p>Increase ecosystem services derived from wetlands and mangroves</p> | <p>2 Safe and resilient housing sites for the most vulnerable groups</p> <p>Combining nature and engineering based solutions in the design of coastal defenses against sea level rise and storm surges</p> | <p>3 Risk Transfer</p> <p>Promote risk transfer mechanisms to reduce risks of extreme hazard events to people, buildings and its contents</p> | <p>4 Hybrid protection structures</p> <p>Combining nature and engineering based solutions in the design of coastal defenses against sea level rise and storm surges</p> | <p>5 Climate proofing transportation networks</p> <p>Road and bridge design to ensure uninterrupted access to all functional areas of the City</p> <p>Planning road network to facilitate emergency evacuation and response</p> | <p>6 Resilient Riverside Development</p> <p>Treating rivers as integral part of the urban landscape and developing the area that can withstand extreme hazard events</p> |
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CLIMATE RESILIENT URBAN STREETSCAPE (PROJECT COMPONENTS)



1 Tropical Urban Streetscape

Streetscapes designed for the tropical setting which will include increased tree cover within the five meter mandatory setback along roads to address urban heat stress, improve sidewalk conditions to promote non-motorized mobility and increase greenhouse gas sinks of the city.

2 Flood retention pond park

Flood retention pond to reduce urban flooding during extreme rainfall events benefiting lowland and coastal communities. It will also serve as public open spaces.

3 Socialized+Subsidized Tenement Housing

Provision of affordable socialized medium rise tenement housing benefiting the highly vulnerable families

Community Resilience

