

**Social Impact Proposition for Housing and Energy:**  
**Prioritisation of HOA for Pilot Roll-out**  
**Human Cities Coalition**  
**\*\*Working paper\*\***

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# **Social Impact Proposition for Housing and Energy**

## **: Prioritisation of HOA for Pilot Rollout**

### 1. Introduction

This report provides a preliminary analysis on prioritisation of Home Owner Association (HOA) in Barangay Catmon<sup>1</sup>, Malabon City, Philippines with respect to identification of suitable location for pilot rollout of Social Impact Proposition (SIP) of next level housing and solar energy under Human Cities Coalition (HCC) Project. Prioritisation of HOA has been carried out on the basis of natural environment, opportunities and constraints. The results of the analysis intend to provide a spatial understanding of existing and proposed land use, multi-hazard risk zones, basic infrastructure and legal/institutional factors. The report aims at identifying suitable HOAs for construction of houses and installation of solar energy panels in slums of Baragay Catmon.

#### 1.1. Objective

With upcoming plans to implement three stages of HCC project for slum development: prototyping, small replication (with grant funding), and large-scale implementation (with the Manila Bay Masterplan roll-out), a site suitability analysis was required to identify suitable locations to construct and test next level housing and solar energy in living lab format, as part of SIP tenure security and solar energy implementation plan, in Barangay Catmon, Malabon City

This report aims to accomplish the following:

- 1) Prioritisation of set of suitable HOA sites within Barangay Catmon, that have the attributes necessary to implement construction of next level housing and installation of solar energy panel.
- 2) Allocation of ranks based on SMCE calculation and highlight criteria performance.

Physical conditions, land availability, natural environment and consequent development opportunities are constantly shifting. Although portions of this report will be a resource for the longer term, the intention of the report is to give a snapshot of development potential in slum areas of Barangay Catmon.

### 2. Methodology

This report conducts analysis on the basis of findings from 'Manila need assessment and SIP reports' with a focus on Barangay Catmon and Tonsuya in Malabon City. The objective of the report to identify suitable sites for pilot rollout has been achieved by applying 'Spatial Multi Criteria Evaluation (SMCE)' which allows to identify the most suitable sites from a set of candidates, as defined by applying a set of evaluation criteria. The following section describes the methods that were used to perform the analysis.

#### 2.1. Data collection and preparation

The data set for this analysis was a set of settlement boundaries of different Home Owner Associations (HOA) within Baranagay Catmon. The spatial extent of HOA was defined using ONA.io<sup>2</sup> platform to define spatial extent of HOA. Data used for the purpose have been captured in following categories for 27 Home Owner Association (HOA) (communities of Informal settlers), but due to unclear demarcation of boundaries, 5 HOAs were merged into 1 HOA to make a total of 22 HOAs with defined boundaries on ONA.

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<sup>1</sup> Barangay Tonsuya was also part of Need assessment but has been excluded from this analysis.

<sup>2</sup> ONA: An online data base platform to collect, visualise and collaborate data from different stakeholders.

A detailed field survey was conducted for Baragay Catmon to develop a settlement profile. The settlement profile data of Catmon was further used to generate maps based on following themes:

- Basic Infrastructure vulnerability: Water, Sanitation, Electricity
- Natural Environment: Floods, Fire
- Legal/Institutional: Eviction threat, Landowner status

The spatial visualisation of above mentioned themes was further categorised in to 'low, medium and high' class on maps. To consolidate the data set to carry out a site suitability analysis, name of HOAs were compiled on an excel sheet including thematic categories of three different classes (refer table2). Also, some of the data has been collected from Dept. of City planning, Malabon City to use for suitability analysis.

Therefore, the data used in site suitability analysis has been collected from different sources and in different format.

Theme	Data	Description	Format	Source
<b>Natural Environment</b>	Flood	HOAs vulnerable for the hazards	Image	HCC
	Fire		Image	
	Storm Surge		Shape file	Dept. of City Planning, Malabon City
	Liquefaction		Shape file	
	Earthquake		Shape file	
<b>Basic Infrastructure</b>	Water	HOAs vulnerable for access to basic services	Image	HCC
	Sanitation		Image	
	Electricity		Image	
	Road Network	Proximity to road network to access basic services	Shape file	Dept. of City Planning, Malabon City
<b>Land use</b>	Zoning Ordinance	Ordinance for land use plan	Shape file	Dept. of City Planning, Malabon City
<b>Institutional/ Legal</b>	Eviction Threat	HOAs which have received eviction threat	Image	HCC
	CMP Status	HOAs enrolled in CMP	Numeric data	
	Landowner status	Government/private landownership	Image	

## 2.2. Spatial Multi Criteria Evaluation

Spatial Multi-Criteria Evaluation is a process that combines and transforms a number of geographical data (input) into a resultant decision (output). The result is an aggregation of multi-dimensional information into a single parameter output map: the decision. This process includes, apart from geographical data, also the decision maker's preferences and the manipulation of the data and preferences according to specified decision rules. SMCE is a decision support tool that forces the assessors (e.g. teams of experts and stakeholders) to structure their problem and outline their information requirements with the help of criteria tree or a framework to support the evaluation.

## 2.3. Multi-criteria Evaluation Framework

This section of report focuses on setting up criteria to prioritise potential HOAs that can be used for constructing pilot housing and install solar panel as part of SIP. Several criteria have been selected that can accommodate suitable conditions to implement living lab format of housing and energy in Catmon. Selection of criteria also concerned the availability of dataset. There are some constraints that have been taken into account where there are some areas excluded from consideration when trying to achieve the goal, such as eviction threats and non CMP HOAs. Table 1 shows rationale, parameter, and evaluation rule of each selected criterion.

Table 1: Multi Criteria Evaluation Framework for next level housing and solar energy (Highlighted criteria yet to be added in analysis)

Sr.No.	Area of concern	Sub- Criteria	Parameter (Cost/Benefit <sup>3</sup> )	Rationale	Evaluation rule
1.	Natural Environment	Flood	Integrated multi hazard assessment (Cost)	Residential areas should be far from high hazard risk zones to avoid or reduce exposure to impact of disasters.	Site with low risk has high suitability.
		Liquefaction			
		Storm Surge			
		Earthquake			
	Fire				
2.	Basic infrastructure vulnerability	Water	Vulnerable accessibility to basic services (Cost)	Agglomeration of basic services is desirable for residential area	High vulnerability will be assigned low score
		Electricity			
		Sanitation			
		Roads	Road Network (Benefit)	Proximity to road to have access to basic services	Close proximity to road will generate high attribute value
3.	Land use	Proposed land use	Inclusive of residential and commercial areas (Benefit)	Construction of housing is preferred in residential area.	Overlap of identified HOA with residential zone of land use plan will be preferred.
5.	Institutional/Legal	Eviction threat	Areas which already received to vacate the land	Construction of house must be avoided on area which are under legal threat of eviction.	Constraint <sup>4</sup> (score: 0)
		Landownership status	Ownership status of set of candidate sites.	Government owned land will involve less legal proceedings in comparison to private land.	Not applicable in this analysis
		CMP status	HOA enrolled in CMP	HOA enrolled in HOA and are already paying amortization amount have the legal rights to carry out the construction of houses.	Benefit
			HOA not enrolled in CMP	No legal rights to carry out any type of construction activity	Constraint (score: 0)

<sup>3</sup>Geo-coordinates of existing water meter and electricity poles would be needed after the identification of HOA among the selected HOAs, to further identify specific location for next level house construction.

## 2.4. Software used

The analysis of suitability location for SIP Pilot used Arc-GIS and CommunityVIZ as tool to identify suitable location using SMCE. ArcGIS version 10.4.1 has been used to work with maps and geographic information. CommunityViz

<sup>3</sup> Benefit: When a criterion is considered as benefit in site selection.

Cost: A criterion which is considered to add cost/risk to suitable sites.

<sup>4</sup>Constraint: A criterion is defined as constraint when it is required to be restricted from the calculation of suitable site.

Scenario 360 is GIS-based decision support extension software, that adds interactive analysis tools and a decision-making framework to the ArcGIS platform. Scenario 360 helps to view, analyse and understand land-use alternatives and impacts.

## 2.5. Work flow

To conduct SMCE, all the data captured by HCC team on ONA.io platform, was triangulated with map images in SIP reports. Further, using the information from ONA.io, ArcGIS was used to generate boundaries for each HOA. A criteria evaluation framework was designed categorising each criterion under area of concern. Evaluation rule, parameter and rationale for each criteria was set (refer table1)

The categorisation of selected criteria (refer table1) was given ranks for eg: Low risk: 3, medium risk:2, High Risk: 1 and No risk: 4 (table 2). When the ranks are uploaded on ArcGIS and Community viz, the suitability wizard calculates the rank and allocates highest score to the attributes with higher value. For eg: A HOA will have highest score if all the criteria selected for the evaluation for the respective HOA have high rank. The HOAs with scores in arranged in descending order to highlight most suitable to not suitable HOAs for Pilot rollout (table2).

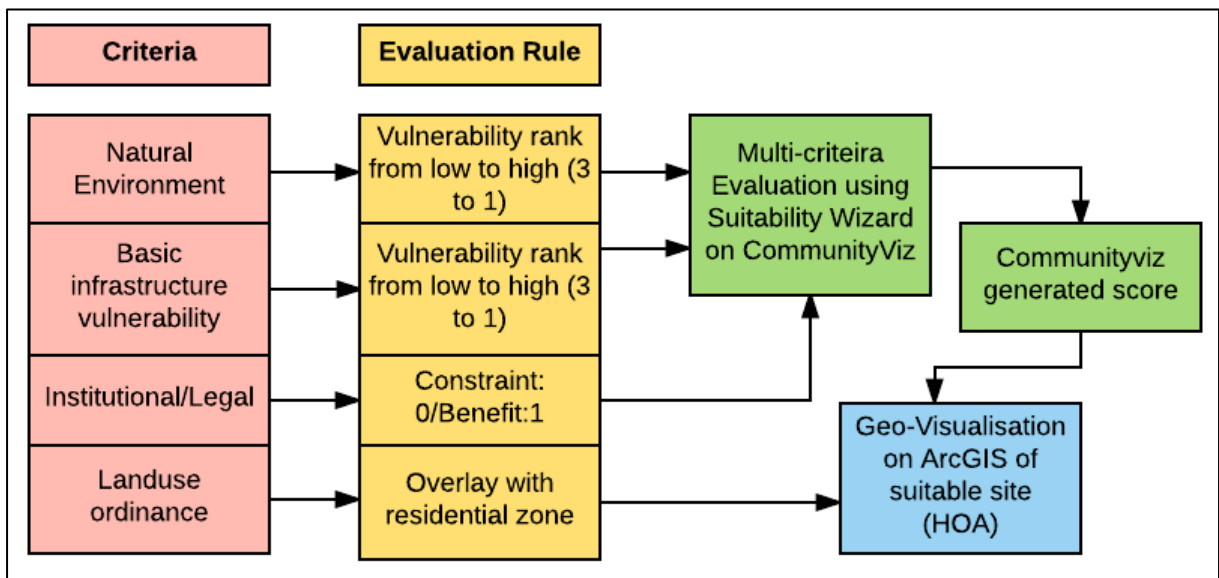


Chart 1:Workflow process

## 3. Key Findings

The scores achieved from SMCE are in the range of 0 to 100 and are divided in to 5 classes with equal interval. Five classes can be defined as: 0-20: Not suitable, 21-40: Least Suitable, 41-60: Low Suitable, 61-80: Moderate suitable, 81-100: High suitable. **Based on SMCE (refer table 2), prioritised HOA (map 1) are 15 (MPV1), 10 (STKCC), 11 (SAPADACA HOA), 12 (PCHR).**

Prioritised HOAs, **SAPADACA, PCHR and MPV1** HOAs have highest score in terms of criteria ranking. Hence, these three HOAs have been prioritised by SMCE system for implementing Pilot rollout. The prioritisation of HOAs are completely based on ranking provided to each criteria except road network. Road network score have been allocated based on the proximity to each HOA polygon to its nearest road network.

The prioritised HOAs (high suitable) have low risk of water access vulnerability, enrolled in CMP and medium risk of remaining criteria including flood, fire, sanitation, electricity and eviction threat. They also fall within the residential zone of proposed land use plan of Malabon City. The zone has been allocated for social housing under regulation BP 220 (refer discussion and table5)

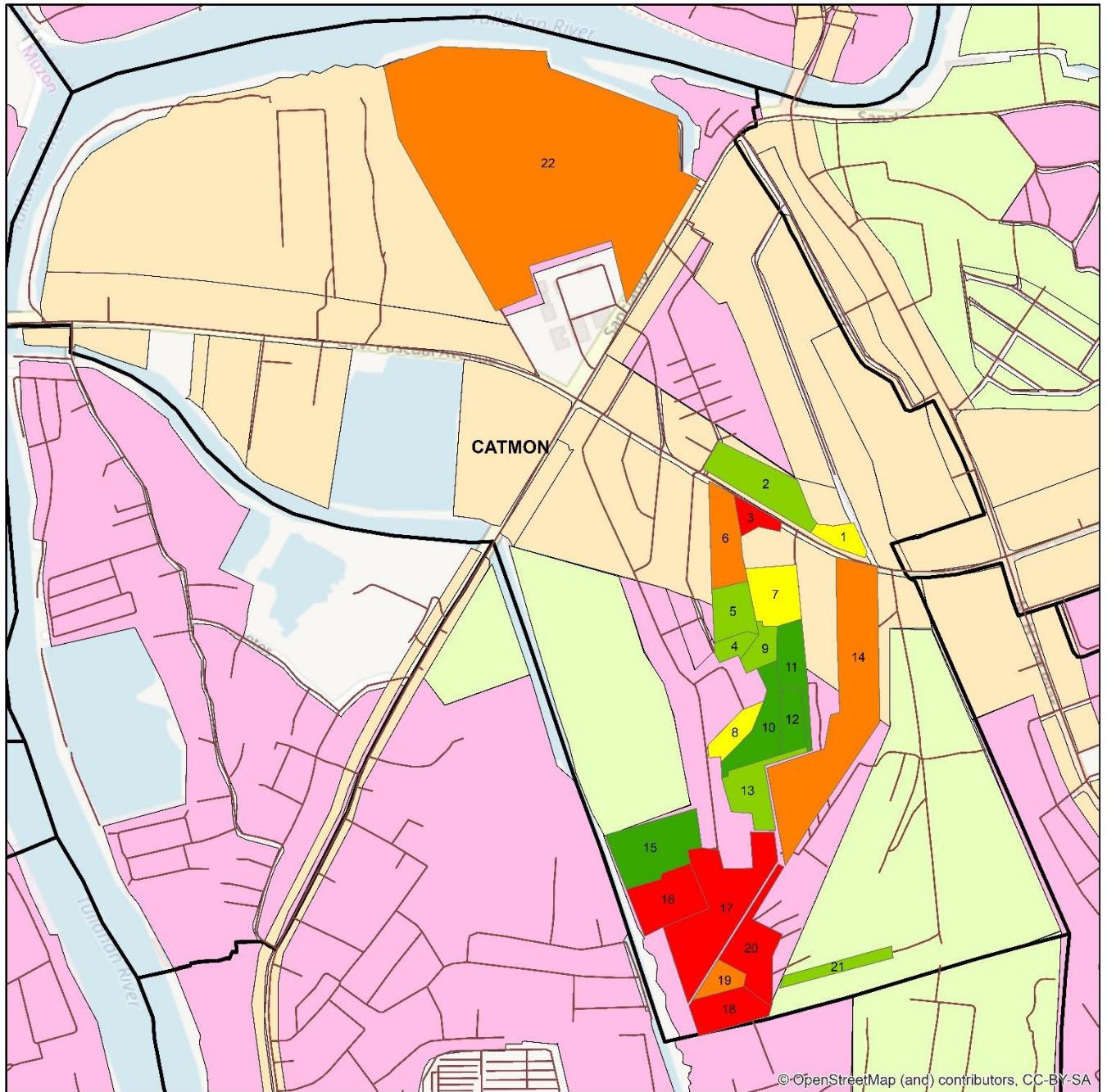
Moderate suitable HOAs have medium risk for all the criteria except water, along with 2 HOAs with non CMP status. Likewise remaining HOAs have low score with high risk in infrastructure vulnerability and non CMP status. HOA1, 2,3, 6, 7, 14 and 5 fall within the commercial zone of land use. 14 and 5 fall partially in commercial and residential (Map1).

Table 2: Prioritisation ranking and score

HOA.No.	HOA_Report	Raw Suitability Score	Suitability Score	Rank	Prioritisation
11	SAPADACA HOA	3500	100	1	Most Suitable
12	PCHR	3500	100		
15	MPV1	3500	100		
10	STKCC	3250	89		
2	SANAPU	3000	78	2	Moderate Suitable
9	KHSC	3000	78		
13	GMHOA	3000	78		
4	ANGELA3	2976	77		
21	CMF	2658	63		
5	SUNRISE HOA	2639	62		
1	UPNA	2596	59	3	Low Suitable
7	SMC	2500	56		
8	SDHI	2500	56		
14	CVHOA1	2000	33	4	Least Suitable
19	NADHAI	2000	33		
6	SAMAPIL	1894	29		
22	GULAYAN	1750	22		
17	CVHOA2	1500	11	5	Not Suitable
18	UVHOA	1500	11		
3	S6BCHA	1250	0		
16	MPV2	1250	0		
20	SBKB	1250	0		



# Pilot Rollout Location: Barangay Catmon, Malabon City



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## Legend

### Prioritized HOAs

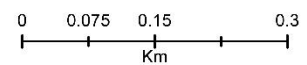
- Not Suitable (0-20)
- Least Suitable (20-40)
- Low Suitable (40-60)
- Moderate Suitable (60-80)
- High Suitable (80-100)

— Major Roads

▭ Barangay Boundary

### Proposed Landuse zones

- Commercial
- Industrial
- Residential



Source: ITC, Faculty of Geoinformation Science and Earth Observation, Univ. of Twente

Map 1: SMCE Map for Pilot location



## 4. Discussion

### 4.1. Spatial implication

SMCE analysis prioritised names of HOAs based on selected criteria. The analysis is subjective and is system generated without field observation data. SMCE generated results based on specific criteria (water, sanitation, fire, flood, electricity, eviction threat and CMP status) to give an indicative of prevailing spatial conditions of HOAs in Barangay Catmon.

According to key findings, MPV1, STKCC, SAPADACA and PCHR HOA are best performing HOAs based on criteria framework (table 4), but these HOAs were not covered for the detailed socio-economic survey in preliminary need assessment. This study had limitation of availability of data in socio-economic analysis at HOA level. It would have given different analysis if it had been available for all HOA. Hence, the prioritised HOAs generated by SMCE should be considered as indicative names of HOAs to initiate the Pilot roll-out.

It is important to note that access to basic facilities and services should also be taken into account as SMCE considered only scores based on ranking allocated to each criteria (low, medium and high). With changing regulations for Informal settlers in Malabon City, there is a high possibility of changes in service provision in different HOAs.

Limitation:

The criteria selection for SMCE was dependent on data availability and hence resulted in an overall analysis based on selected criteria, which cannot be treated as standards to prioritise HOAs for housing construction and installation of solar energy panels.

All high suitable HOAs may not be the best fit for the implementation of SIP project based on the data (criteria setting) availability. There is a high possibility that SMCE results may change if additional data such as socio-economic details, elevation data and other prioritised necessities of residents is included in criteria framework.

### 4.2. Compliance with Proposed Land Use Regulation

Though this report has included spatial visualisation of proposed land use plan with an overlay on spatial extent of HOAs in Barangay Catmon, but comprehensive land use plan has separate regulations for each category (refer table5). For example, the prioritised HOAs fall in residential zone which has been proposed as social housing zone by Department of City Planning. But the plan also clarifies on type of building construction, flood overlay zone and easement overlay zones. under **provision of BP220 as stated: BATAS PAMBANSA BLG. 220: An act authorizing the ministry of human settlements to establish and promulgate different levels of standards and technical requirements for economic and socialized housing projects in urban and rural areas from those provided under presidential decrees numbered nine hundred fifty-seven, twelve hundred sixteen, ten hundred ninety-six and eleven hundred eighty-five.**

For example, **building regulations** for HOA no. 10, 11, 12 and 15 (Prioritised HOAs by SMCE)

For new construction: only stilt type of houses shall be allowed, number of allowable storeys/floors above grade is three (3) with required submission of Geotechnical & Structural Eng'g. Analysis & design, BHL is 10 meters above highest grade, per relevant provision of the NBC, 957 & this ordinance

**Flood overlay zone:** High Susceptibility to Flood (due to location near the river & high density population), Easement along Tullahan River shall be cleared from structure up to 10 meters from the river wall pursuant to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-up Rehabilitation & Preservation of Manila Bay.

**Easement overlay zone:** Minimum of 3 meters' easement for minor rivers/creek in compliance to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-Up Rehabilitation & Preservation, no building or any structure shall be allowed along the easement. Easement should have permeable flooring so that the water can penetrate the sub surface, allowable use for easement are: Parks, bike lane, landscape.

## 5. Recommendations

- Field observation to be included for all HOAs before finalisation of HOA for pilot roll-out. It can also include taking stock of community expectation also, to avoid conflicts at a later stage.
- Based on SMCE criteria, prioritisation of construction sites for pilot roll-out, should consider **SAPADACA, PCHR, STKCC and MPV1**.
- Based on SMCE results, access to road network is a key determinant of access to services, hence should be considered as a development priority in finalisation of HOA.
- Criteria setting should be done for selection of house for next level housing and house roof to install solar panel, in the finalised HOA.
- Coordination with City administration should be done in order avoid duplication of efforts and compliment service provision to meet the common goal of constructing social housing for informal settlers and around Malabon City.
- This report is generated using ArcGIS and Community Viz software are desktop based commercial software. Capacity development may be considered, in application of QGIS for SMCE analysis on online version in near future may be explored to maximise participation of multiple stakeholders towards informed decision making.

## 6. Annexures

Table 3: HOA number and Name

HOA No.	HOA	Electricity	Fire	Eviction Threat	Flood Hazard	Land Ownership	Sanitation	Water	CMP Status
1	UPNA	Medium	Medium	Medium	Medium	Private	Medium	Low	No
2	SANAPU	High	Medium	Medium	Medium	Private	Medium	Low	No
3	S6BCHA	Medium	High	Medium	High	Private	Medium	Medium	No
4	ANGELA3	Medium	Medium	None	High	Private	Medium	Low	Yes
5	SUNRISE HOA	High	Medium	None	Medium	Private	High	Medium	Yes
6	SAMAPIL	High	High	Low	High	Private	Medium	Low	Yes
7	SMC	Medium	High	None	Medium	Private	Medium	Low	Yes
8	SDHI	Medium	Medium	None	Medium	Private	High	Low	No
9	KHSC	Medium	Medium	None	Medium	Private	Medium	Low	Yes
10	STKCC	Medium	Medium	Medium	Medium	Private	Medium	Medium	Yes
11	SAPADAC A HOA	Medium	Medium	None	Medium	Private	Medium	Low	Yes
12	PCHR	Medium	Medium	None	Medium	Private	Medium	Low	Yes
13	GMHOA	High	Medium	Low	Medium	Private	Medium	High	Yes
14	CVHOA1	Medium	High	None	High	Government	Medium	Low	Yes
15	MPV1	Low	Medium	None	Medium	Private	Medium	Low	Yes
16	MPV2	Medium	High	None	Medium	Private	High	Medium	No
17	CVHOA2	Medium	High	None	High	Government	Medium	Low	No
18	UVHOA	High	High	Low	High	Private	Medium	Low	No
19	NADHAI	Medium	High	None	Medium	Private	Medium	Low	No
20	SBKB	High	High	Low	High	Private	High	Medium	Yes
21	CMF	Medium	Medium	Low	Medium	Private	Medium	Medium	No
22	GULAYAN	Medium	High	None	High	Government	Medium	Medium	Yes

Table 4: Criteria ranking for each HOA

HOA.No.	HOA_Report	Electricity Vulnerability	Fire	Eviction Threat	Flood Hazard	Land Ownership	Sanitation Vulnerability	Water Vulnerability	CMP Status
1	UPNA	2	2	2	2	0	2	3	0
2	SANAPU	1	2	2	2	0	2	3	0
3	S6BCHA	2	1	2	1	0	2	2	0
4	ANGELA3	2	2	4	1	0	2	3	1
5	SUNRISE HOA	1	2	4	2	0	1	2	1
6	SAMAPIL	1	1	3	1	0	2	3	1
7	SMC	2	1	4	2	0	2	3	1
8	SDHI	2	2	4	2	0	1	3	0
9	KHSC	2	2	4	2	0	2	3	1
10	STKCC	2	2	2	2	0	2	2	1
11	SAPADACA HOA	2	2	4	2	0	2	3	1
12	PCHR	2	2	4	2	0	2	3	1
13	GMHOA	1	2	3	2	0	2	1	1
14	CVHOA1	2	1	4	1	1	2	3	1
15	MPV1	3	2	4	2	0	2	3	1
16	MPV2	2	1	4	2	0	1	2	0
17	CVHOA2	2	1	4	1	1	2	3	0
18	UVHOA	1	1	3	1	0	2	3	0
19	NADHAI	2	1	4	2	0	2	3	0
20	SBKB	1	1	3	1	0	1	2	1
21	CMF	2	2	3	2	0	2	2	0
22	GULAYAN	2	1	4	1	1	2	2	1

Table 5: Land Use Regulation for Barangay Catmon

The Comprehensive Land Use Plan 2016-2028 of the City of Malabon			
LAND MARK / BOUNDARY	PRESENT LAND USE	PROPOSED LAND USE AND ALLOWABLE USES	OVERLAY ZONE AND ADDITIONAL REGULATIONS
<b>RESIDENTIAL</b>			
<b>Gulayan CMPs:</b> Area bounded on the north by Tinajeros river, East by Institutional areas-Justice cpd., South by institutional area-barangay hall etc., and West by blocks deep of commercial area from Tinajeros river.	The area was classified as Central Business District  The actual use is Residential, under CMP	Socialized Housing Zone  All uses according to the provision of BP 220	<b>BLDG. REGULATIONS:</b> -For new construction, only stilt type of houses shall be allowed. -Number of allowable storeys/floors above grade is three (3) with required submission of Geotechnical & Structural Eng'g. Analysis & design -BHL is 10 meters above highest grade -per relevant provision of the NBC, 957 & this ordinance  <b>FLOOD OVERLAY ZONE:</b> -High Susceptibility to Flood (due to location near the river & high density population) -Eastment along Tullahan River shall be cleared from structure up to 10 meters from the river wall pursuant to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-up Rehabilitation & Preservation of Manila Bay <b>EASEMENT OVERLAY ZONE:</b> - min. of 3 meters' easement for minor rivers/creek in compliance to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-Up Rehabilitation & Preservation -No building or any structure shall be allowed along the eastment. - Easement should have permeable flooring so that the water can penetrate the sub surface. -allowable use for easement are: Parks, bike lane, landscape.
	<b>HOA no.22</b>		
Area bounded on the north by one block deep of Gov. Pascual Ave. wherein Hernandez St. and Valdez St. as access, East by Industrial area., South by Tonsuya boundary Catmon river., and West by Catmon river	The area was classified as High Density Residential Zone;	Socialized Housing Zone  All uses allowed according to the provision of BP 220	-High Susceptibility to Flood (due to location near the river & high density population) -Eastment along Tullahan River shall be cleared from structure up to 10 meters from the river wall pursuant to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-up Rehabilitation & Preservation of Manila Bay <b>EASEMENT OVERLAY ZONE:</b> - min. of 3 meters' easement for minor rivers/creek in compliance to Dec. 18, 2008 Supreme Court Mandamus on Manila Bay Clean-Up Rehabilitation & Preservation -No building or any structure shall be allowed along the eastment. - Easement should have permeable flooring so that the water can penetrate the sub surface. -allowable use for easement are: Parks, bike lane, landscape.
	<b>HOA no. 15, 16, 17, 13, 10, 11, 12, 4</b>		
<b>Sitio 6 North side:</b> Area bounded on the north by commercial area-Unican, East by Bustamante St. and commercial area from M.H. del Pilar, South by commercial area from Gov. Pascual Ave., and West by commercial area-Unican	The area was classified as High Density Residential Zone; Occupied by CMP, namely Catmon Vill HOA, SAMAPIL, Samahang Maralita Purok I, Samahang Maralita Purok II and Samahang Maralita Purok IV	<b>Socialized Housing Zone</b>  <b>All uses allowed according to the provision of BP 220</b>	

	<b>HOA no. 5, 4, 9, 8,10, 1, 2</b>		
<b>COMMERCIAL</b>			
<p>Area bounded on the north by Tinajeros River, East by Blocks deep at west sides of residential, institutional and (actual-fishpond) from Sanciangco St, South by Gov. Pascual Ave., and West by Tinajeros River.</p>	<p>The area was classified as Major Commercial Zone along Gov. Pascual Ave. at 70 meters deep from Gov. Pascual Ave. and the rest are classified as Central Business District (CBD)</p> <p>Food Houses are operating inside the Gozon lot are Dampa and Palmeras; E-games and On line Sabong</p> <p>Lots ranging from 1 to 8 hectares, some are vacant and others are marine ponds.</p>	<p>The proposed Land Use is Commercial</p> <p>The allowable uses are:</p> <ul style="list-style-type: none"> <li>-Residential</li> <li>-Institutional</li> <li>-Commercial (subject to the allowable uses under Major Commercial Zone)</li> <li>-Industrial (use the same allowable uses under the previous CLUP under special industrial activities)</li> </ul>	<p><b><u>BLDG. REGULATION:</u></b></p> <ul style="list-style-type: none"> <li>-No. of allowable storeys/floors above grade is six (6) as provided in the NBC.</li> <li>-BHL is 18 meters above highest grade as provided in the NBC</li> </ul> <p><b><u>FLOOD OVERLAY ZONE:</u></b></p> <ul style="list-style-type: none"> <li>-Very low Susceptibility to Flood</li> <li>-Ground Floor flooring shall be elevated to a minimum of 1.00 meters from the road level.</li> <li>-Parking/open spaces should have a permeable flooring so that the water can penetrate the sub surface.</li> <li>-All proposed new construction must provide a min. of 10% of the lot area for rain water catchment facilities.</li> </ul> <p><b><u>URBAN CORRIDOR OVERLAY ZONE:</u></b> (along Gov. Pascual Avenue)</p> <p>The allowable Uses shall be as provided in the applicable base zone and rules &amp; regulations under UCD-OZ.</p> <p><b><u>Additional policies:</u></b></p> <ul style="list-style-type: none"> <li>-Parking spaces should have permeable flooring so that the water can penetrate the sub surface.</li> </ul>
	<b>HOA no. 6, 3, 7, 3, 2, 1, 14</b>		<p>No portion of the easement whether at grade (on the ground), below grade or above grade maybe leased or developed by the Government or by private entities for purposes inconsistent with its character and intended function.</p> <p>Semi-enclosed or enclosed, semi-permanent or permanent habitable building projections or any other building projection or structural element located above or below the easement are prohibited.</p> <p>All forms of enclosures such as fence, perimeter walls and the like, intended to limit the use of the easement for private enjoyment/benefit or to restrict full access to the public easement are absolutely prohibited unless the same are erected for reason of public safety.</p> <ul style="list-style-type: none"> <li>-Provision of 3 meters bothsides along Gov. Pascual Ave. for road widening.</li> </ul>

			<p><b><u>EASEMENT OVERLAY ZONE:</u></b></p> <ul style="list-style-type: none"> <li>min. of 3 meters for minor rivers/creeks and 10 meters eastment for major rivers in compliance to Supreme Court Mandamus.</li> <li>-no building or any structure shall be allowed along the easement.</li> <li>- Easement should have permeable flooring so that the water can penetrate the sub surface</li> <li>-allowable use for easement are: Parks, bike lane, landscape.</li> </ul>
<b>INDUSTRIAL</b>			
Area bounded on the north by commercial area one block deep from Gov. Pascual ave., East by Tugatog Boundery, South by Tonsuya boundery, and West by residential areas.	The area was classified as Light Industrial Zone	<p>The proposed Land Use is Industrial zone</p> <p>All allowable uses under Light Industrial Zone</p>	<p><b><u>FLOOD OVERLAY ZONE:</u></b></p> <ul style="list-style-type: none"> <li>-Low Susceptibility to Flood</li> <li>-Ground Floor flooring shall be elevated to a minimum of 1.50 meters from the road level.</li> <li>-Parking/open spaces should have a permeable flooring so that the water can penetrate the sub surface.</li> <li>- All proposed new construction of Industrial must provide a min. of 10% of the lot area for rain water catchment facilities.</li> </ul> <p><b><u>BUFFER &amp; GREENBELT OVERLAY ZONE:</u></b></p> <ul style="list-style-type: none"> <li>-Provision of 4.00 meters for planting strip to separate industrial uses from Residential uses to control pollution, where no permanent structures are allowed</li> </ul>
	<b>HOA no. 14, 18, 19, 20, 21</b>		