

LOCAL SHELTER PLANNING MANUAL

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I. Introduction

The Local Government Code of 1991 (RA 7160) and the Urban Development and Housing Act of 1992 (RA 7279) task the local government units with provision of shelter and its related basic services for their respective constituents. Provision of shelter requires a considerable amount of resources in terms of land, funds, time and effort. All these resources are not unlimited, and thus, proper planning in accessing and allocating these is highly crucial. In order to comply with the tasks mandated by Sec. 40 of RA 7279: *to provide local government units with necessary technical support in the preparation of town and land use plans*, the Housing and Urban Development Coordinating Council (HUDCC), assisted by the UN Habitat, came up with the Local Shelter Planning (LSP) Manual which is aimed at guiding the LGUs in coming up with an estimated number of households in need of housing assistance, identifying resources needed as well as resources available for shelter provision, and most importantly, generating strategies to efficiently use the resources they have or can access for shelter purposes, factoring in the impacts of climate change.

II. Scope and Delimitation

The LSP Planning Manual covers many aspects but for purposes of presentation to the National Statistics Convention, this paper will confine only to methods and procedures in estimating or computing for the following:

1. New housing units needed due to backlog and future need;
2. Affordable housing loan

III. Definition of Terms and Computations

1. New housing units needed

The total need for new housing units is generated by summing up the housing backlog and the future need.

Backlog is the number of dwelling units needed at the beginning of the planning period. This is derived by adding up the requirements for homeless, the displaced and the doubled-up households. **Future Need**, *also known as **New Units Needed Due to Population Growth***, is the total number of new units needed to respond to the demand of new households formed within the planning period.

Planning period covers the duration that will be needed to realize the housing goals of the LGU. In the example cited in this document, **the planning period is 2018 to 2027.**

1.1 Estimating the Backlog

Estimating the backlog requires prerequisite procedures which are herein presented.

1.1.1. Estimating Homeless Households

Household is a social unit consisting of a person living alone or a group of persons who sleep in the same housing unit and have a common arrangement in the preparation and consumption of food (PSA).

Homeless refers to individuals or households living in public spaces (such as parks and sidewalks) and all those without any form of shelter. The contention is that new units should be provided for these people. To determine the total housing need of homeless, add up homeless individuals and homeless households. To compute for the homeless households, subtract the number of homeless individuals (**not a member of any household**) from the total homeless persons and divide this by the average household size (see *Box No. 1*).

BOX NO. 1 Computing for Homeless Households	
Formula:	
Homeless Households =	$\frac{\text{Total Homeless persons} - \text{Homeless individuals}}{\text{Average HH size}}$
Given:	
Homeless persons = 98 homeless persons	
Homeless Individuals = 8 (not part of household)	
Average Household Size = 4.5	
Solution:	
	$98 - 8 = \frac{90}{4.5} = 20 \text{ homeless households}$
Therefore:	
Homeless HH =	20 homeless households
+	8 homeless individuals

	28 Total Homeless Households

1.1.2. Computing for Doubled-up households.

Doubled-Up Households exist when one dwelling unit is shared by two or more households. Estimate on this can be derived from Census on Population and Housing (CPH under "Ratio of Households to Occupied Housing Units." However, when CPH data are already outdated, this can be projected as shown in **Box No. 4**.

Prerequisite to projecting the number of doubled-up households is an estimate on **Household per dwelling unit** which is the average number of households living in one dwelling unit. To solve, divide the number of households of the latest census, by the number of occupied dwelling units of the latest census (**see Box No. 2**).

BOX NO. 2. Solving for Household per Dwelling Unit

Formula:

$$\text{Household per Dwelling unit} = \frac{\text{No. of HHs as of latest census}}{\text{No. of Occupied Dwelling Units as of latest census}}$$

Given:

No. of Households as of latest census (2015) = 26,889
No. of Dwelling units as of latest census (2015) = 26,541

Solution:

$$\text{Household per Dwelling Unit} = \frac{26,889}{26,541} = 1.0131$$

Housing Stock is also known as occupied dwelling units. Data on this can be secured from PSA. However, the number of housing stock for the **base year** (*year before the beginning of the planning period*) is oftentimes not available (unless it falls on a censal year). To estimate, subtract from the total number of households the number of homeless households, then divide this by the number of households per dwelling unit (**see Box No. 3**).

BOX NO. 3. PROJECTING THE BASE YEAR HOUSING STOCK (OCCUPIED DWELLING UNITS)

Formula:

$$\text{Base Year Housing Stock} = \frac{\text{No. of households in base year} - \text{Homeless}}{\text{Household per dwelling unit}}$$

Given:

No. of Households in base year = 27,522
No. of Homeless in base year = 28
HH/DU in base year = 1.0131

Solution:

$$\text{Housing Stock} = \frac{27,522 - 28}{1.0131} = 27,138$$

BOX NO. 4. Computing the Doubled-up Households

Formula:

Doubled-up Households = Percentage of Households per Dwelling Unit x Housing Stock during base year

Given:

No. of Housing Stock during base year = 27,138
Household per Dwelling Unit = 1.0131 or 1.31% of Housing Stock

Solution:

$$\text{Doubled-up Households} = \frac{1.31\%}{100} \times 27,138 = 3.55 \text{ or rounded off to } 356$$

1.1.2 Estimating Displaced Units (Relocation Need)

Displaced units are new dwelling units needed to replace those occupied by households located in danger areas, or those living on lands which are needed by the government for a major infrastructure project, or in an area covered by court order for eviction and demolition.

To determine the number of displaced units, sum up the dwelling units in danger areas, dwelling units affected by planned government infrastructure projects, those subject and potential subject of court order for eviction/demolition, and units for possible displacement due to natural disasters.

Now that estimates for the doubled-up, displaced, and homeless households are done, sum them up to get the estimated housing backlog.

Table 1. Distribution of New Units Needed Due to Backlog, 2017

	Total	Annual	Program Period
Doubled-up (1.31 % of Housing Stock)	356	51	2021-2025 (7years)
Homeless	28	14	2019-2020 (2 years)
Displaced	8,025		2018-2027 (10 years)
Danger Areas(4,105 HH)			
Flood(938 HHs)			
<i>Brgy. 1.</i>	154	154	2018
<i>Brgy. 4</i>	254	254	2018
<i>Brgy. 5.</i>	126	126	2019
<i>Brgy. Rizal</i>	404	404	2019
Storm Surge (515 HHs)			
<i>Brgy. Balaring</i>	515	515	2022
Landslide (2,652 HHs)			
<i>Brgy. E. Lopez</i>	759	759	2023
<i>Brgy. Hawaiian</i>	1,893	946	2024
		947	2025
Infrastructure Projects(1,203 HHs)			
RROW (1,203 HHs)			
<i>Brgy. Lantad</i>	909	454	2020
		455	2021
<i>Brgy. 2</i>	274	274	2018
<i>Brgy. 3</i>	20	20	2018
Climate Change (2,717 HHs)			
Sea Level Rise (2,717 HHs)			
<i>Brgy. Mambulak</i>	1,439	1,439	2026
<i>Brgy. Guimbalaon</i>	157	157	2027
<i>Brgy. Guinhalaran</i>	1,121	1,121	2027
TOTAL BACKLOG	8,409		

Housing Stock = 27,138

1.2 Projecting Future need

Future Need, also known as **New Units Needed Due to Population Growth**, is the total number of new units needed to respond to the demand of new households formed within the duration of the plan.

Future Need is derived by getting the difference in the number of households between the last planning year and the base year. Using the example in **Table 2 (Household Population Projection)**, households in the last planning year (2027) is **30,916**, and households in base year (2017) is **27,522**; and the difference is **3,394** households. This means that the **future need** or the total new units needed due to population increase is **3,394**.

Table 2. Projecting the Number of Households

	Data as of Latest Census	Base Year	1 st Planning Period		2nd Planning Period	3 rd Planning Period
	Year X 2015	Year A 2017	Year B 2018	Year C 2020	Year D 2023	Year E 2027
HH Population	120,999	123,847	125,296	128,245	132,799	139,124
No. of Households	26,889	27,522	27,844	28,499	29,511	30,916
Average HH size	4.5	4.5	4.5	4.5	4.5	4.5
Housing stock	26,541	27,138				

Year X – Latest census year

Year A – Base Year

Year B – first year of 1st Planning Period

Year C – last year of 1st Planning Period

Year D – last year of 2nd Planning Period

Year E – last year of 3rd Planning Period

Needed in projecting future need, is the figure on *Average Annual Population Growth Rate*, which indicates how fast a population increases or decreases as a result of the interplay of births, deaths, and migration during a given period of time (PSA). This is expressed in percent and published by PSA.

1.2.1 Projecting the Number of Households

Population Projection is the computation of future changes in population numbers, given certain assumptions about future trends in the rates of fertility, mortality and migration (PSA).

The population of a city/municipality increases mostly due to births that occur and the influx of migrants from other cities/municipalities in search of employment and other opportunities. Unless provisions are made for migrants, an economically prosperous city/municipality could be confronted by a proliferation of informal settlements.

Box No. 5 presents the formula and example in projecting population using the growth rate.

BOX NO. 5 POPULATION PROJECTION				
Formula:				
P_{2017}	=	P_{2015}	$(1 + r)^{nth}$	
Where:				
Growth rate or $r = 1.17\%$				
$P_{2015} = 120,999$				
$P_{2017} = ?$ $n =$ time = 2 years				
P_{2017}	=	120,999	$(1 + 0.0117)^2$	= 123,847
$P_{2023} = ?$ $n =$ time = 8 years				
P_{2023}	=	120,999	$(1 + 0.0117)^8$	= 132,799

There are three (3) Planning Periods, namely the First Planning Period, the Second and the Third Planning Period. In order to determine the number of units needed for each planning period, get the increase in the number of households for each of the three planning periods and divide the number of households by the number of years within the planning period. The example in **Table 3** shows that for the first planning period, **977** new units are needed or approximately **326** units annually for the next three years starting from 2018 to 2020. For the second planning period, **1,012** units are needed or about **337** annually; for the third planning period, **1,405** units are needed or around **351** annually.

Table 3. New Units Needed Due to Future Need (Population Increase)

PLANNING PERIOD	HOUSEHOLDS IN PLANNING PERIODS	TOTAL NO. OF UNITS NEEDED DUE TO POPULATION GROWTH	NO. OF YEARS IN A PLANNING PERIOD	NEW UNITS NEEDED ANNUALLY
1st Planning Period 2018-2020	28,499 - 27,522 =	977	÷ 3 years =	326
2 nd Planning Period 2021-2023	29,511 – 28,499 =	1,012	÷ 3 years =	337
3 rd Planning Period 2024-2027	30,916 – 29,511=	1,405	÷ 4 years =	351
TOTAL		3,394		

1.3 Total New Units Needed Due to Backlog and Future Need

Need for New Units. The total need for new housing units is generated by summing up the housing backlog and the future need. In the example shown in **Table 4** the total new units needed for the planning period 2018 to 2027 are 11,803.

Table 4. Total New Units Needed Due to Backlog and Future Need

Year	Doubled-up	Displaced	Homeless	Future Need (Population Increase)	Annual Total	Total for the planning period
2018		702		325	1,027	2,691
2019		530	14	326	870	
2020		454	14	326	794	
2021	50	455		337	842	2,893
2022	51	515		337	903	
2023	51	759		338	1,148	
2024	51	946		351	1,348	6,219
2025	51	947		351	1,349	
2026	51	1,439		351	1,841	
2027	51	1,278		352	1,681	
	356	8,025	28	3,394	11,803	

2. AFFORDABLE HOUSING LOAN

The maximum affordable housing loan can be established by using the monthly amount for potential capital costs for housing, prevailing loan terms (*repayment period and interest rate*) and annuity factor.

2.1 Procedures and Computations

All items discussed related to affordable housing loan are shown in **Table 5**.

- **Monthly Household Income.** Distribute the number of households needing new units into 6 income groups, with the first income group exclusively for households living below the poverty threshold.
- **Percentage of New Units.** Distribute, in terms of percent, the number of households needing new units among the six income groups. The total of which should be 100 percent.
- **Number of Units.** Base on the percentage of new units per income group, distribute the actual number of households among the six income groups. The total of which should be equal to the total number of new units needed due to backlog and future need which is 11,803 in the example.
- **Typical Monthly Income** or mean income represents that level of income which 50% of total households generally earn. If data on distribution of income of households within each

income group is not available, it is recommended to use the mean income based on the average of the maximum and minimum income. However, for the first and sixth income groups which do not have minimum and maximum income, respectively, the planner may peg an income which majority of those within a particular income group earns.

Example

1. If the income bracket of the second income group is P8001-P 15,000, the mean income is $(P8,001 + P15,000)/2 = P11,500.50$ or rounded off to P11,500.
2. For the first income group earning P8,000 and below, the planner assumed that majority are earning P5000; thus, the typical income is P5000.

Table 5 . Affordable Housing Loan per Income Group

Income Group	1st	2nd	3rd	4th	5th	6th
Monthly HH Income (minimum, maximum)	8,000 and below	8,001-15,000	15,001-30,000	30,001-45,000	45,001 - 60,000	Over 60,000
% of new units	45%	21.75%	25.5%	4.85%	2.10%	0.80%
Number of units 11,803	5,311	2,567	3,010	572	248	95
Typical monthly income	5,000.00	11,500.00	22,500.00	37,500.00	52,500.00	75,000.00
Potential % of income for new housing	12 %	12 %	15 %	15 %	18 %	20 %
Potential capital cost for housing:						
Monthly	600.00.00	1,380.00	3,375.00	5,625.00	9,450.00	15,000.00
Annual	7,200.00	16,560.00	40,500.00	67,500.00	113,400.00	180,000.00
Loan Terms						
* Interest rate	3 % (under Pag-IBIG Affordable Loan Program where Monthly Income is not more than P12,000)	6% (old rate; straight; without re-pricing)	7 % (3 years re-pricing @6.5%/yr)	7% (3 years re-pricing @6.5%/yr)	8% (10years re-pricing @8.035%/yr)	8% (10years re-pricing @8.035%/yr)
* Repayment period, years	30	30	30	25	25	25
Affordable housing loan	7,200 x 19.600 141,120.00	16,560 x 13.765 227,948.40	40,500 x12..409 502,564.50	67,500 x 11.654 786,645.00	113,400 x 10.675 1,210,545.00	180,000 x10.675 1,921,500.00

- **Potential Percentage of Income for New Housing** is the estimated percentage of monthly household income that can be used to pay for house rent or amortization without sacrificing other more important recurrent costs such as, but not limited to food, power, water, education, clothes and other wears, transportation, communication, taxes and health-related costs. To determine the potential percentage of income for housing, the planners may refer to Family Income and Expenditure Survey (FIES) and **check the percentage of household income devoted to house rent or amortization**. Since these data are only up to provincial level, adjustments in estimates can be done base on situation in a particular LGU subject of the plan.

To solve for the monthly **Potential Capital Cost for Housing**, multiply the Typical Monthly Income by the Potential Percentage of Income for New Housing, then, multiply this by 12 months to get the Annual Potential Capital Costs for Housing (**see Box No. 6**).

BOX NO. 6 Computing for Potential Capital Cost for Housing
(for the first Income Group)

Formula:

Annual Potential Capital for Housing = Typical Income x Potential % of income for new housing x 12 months

Given:

Typical Income= P5,000
Potential % of income for new housing = 12%

Solution:

Annual Potential Capital Cost for Housing = 5,000 x 12% x 12 months = P7,200.00

Procedure is the same for all income groups

- **Loan term** means the interest rate and the repayment period in number of years. Interest rate and repayment period can be pegged on the current rate of housing loan programs of Pag-IBIG Fund, Social Housing Finance Corporation, and other financial institutions.
- **Affordable housing loan.** Once the loan terms are established, the planner can now compute for the affordable housing loans of each income group by multiplying the Annual Potential Capital Costs for Housing by a particular factor found in the **Table of Annuity Factor** (refer to Table 6) corresponding to the loan term chosen (see **Table 7**).

BOX NO. 7 Computing for Affordable Housing Loan
(for the first Income Group)

Formula:

Affordable Housing Loan = Annual Potential Capital for Housing x Annuity Factor

Given:

Annual Potential Capital Cost for Housing = **P7,200.00**
Annuity factor for 3% @ 30 years repayment period = **19.600** (see Table 6. Table of Annuity Factor)

Solution:

Affordable Housing Loan = P7,200.00 x 19.600= P 141,120.00

Procedure is the same for all income groups

Table 6. Table of Annuity Factor

ANNUIITY FACTOR														
Present value interest factor of an (ordinary) annuity of P1 per period at i% for n periods														
Period	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%
1	0.990	0.980	0.971	0.962	0.952	0.943	0.935	0.926	0.917	0.909	0.901	0.893	0.885	0.877
2	1.970	1.942	1.913	1.886	1.859	1.833	1.808	1.783	1.759	1.736	1.713	1.690	1.668	1.647
3	2.941	2.884	2.829	2.775	2.723	2.673	2.624	2.577	2.531	2.487	2.444	2.402	2.361	2.322
4	3.902	3.808	3.717	3.630	3.546	3.465	3.387	3.312	3.240	3.170	3.102	3.037	2.974	2.914
5	4.853	4.713	4.580	4.452	4.329	4.212	4.100	3.993	3.890	3.791	3.696	3.605	3.517	3.433
6	5.795	5.601	5.417	5.242	5.076	4.917	4.767	4.623	4.486	4.355	4.231	4.111	3.998	3.889
7	6.728	6.472	6.230	6.002	5.786	5.582	5.389	5.206	5.033	4.868	4.712	4.564	4.423	4.288
8	7.652	7.325	7.020	6.733	6.463	6.210	5.971	5.747	5.535	5.335	5.146	4.968	4.799	4.639
9	8.566	8.162	7.786	7.435	7.108	6.802	6.515	6.247	5.995	5.759	5.537	5.328	5.132	4.946
10	9.471	8.983	8.530	8.111	7.722	7.360	7.024	6.710	6.418	6.145	5.889	5.650	5.426	5.216
15	13.865	12.849	11.938	11.118	10.380	9.712	9.108	8.559	8.061	7.606	7.191	6.811	6.462	6.142
16	14.718	13.578	12.561	11.652	10.838	10.106	9.447	8.851	8.313	7.824	7.379	6.974	6.604	6.265
17	15.562	14.292	13.166	12.166	11.274	10.477	9.763	9.122	8.544	8.022	7.549	7.120	6.729	6.373
18	16.398	14.992	13.754	12.659	11.690	10.828	10.059	9.372	8.756	8.201	7.702	7.250	6.840	6.467
19	17.226	15.678	14.324	13.134	12.085	11.158	10.336	9.604	8.950	8.365	7.839	7.366	6.938	6.550
20	18.046	16.351	14.877	13.590	12.462	11.470	10.594	9.818	9.129	8.514	7.963	7.469	7.025	6.623
25	22.023	19.523	17.413	15.622	14.094	12.783	11.654	10.675	9.823	9.077	8.422	7.843	7.330	6.873
30	25.808	22.396	19.600	17.292	15.372	13.765	12.409	11.258	10.274	9.427	8.694	8.055	7.496	7.003

After determining the affordable housing loans, there are still other procedures to be undertaken before the local shelter planning process is completed. This includes the following:

- designing housing options for each income group that are within their respective affordability or devising schemes to make the options affordable;
- assessment of resources needed and resources available for shelter provision, such as **land**, provision of **basic services and its related infrastructures** (power, potable water, roads, drainage, sanitation, & domestic waste management services), and **funds**;
- crafting the Implementation Plan; and
- designing of a monitoring scheme