**WATER**

**Water Supply**

The Mangaldan Water District is the main supplier of potable water specifically in all barangays except Brgy. Inlambo. There are 1,552 connections already classified as Domestic, Commercial, Public and Government.

Water sources found at Poblacion, Bari, Amansabina and other barangays are the main sources of water supplied by the water district. Aside from the water pump, they also have a generator. The average monthly consumption reaches 233,187 cubic meters.

**Table 109: Household Water Connections, 2014**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Barangay Served** | **Residential** | **Commercial** | **Public School** | **Government** | **TOTAL** |
| Alitaya | 259 | 2 | - | - | 261 |
| Amansabina | 293 | 1 | 1 | - | 295 |
| Anolid | 663 | 22 | - | - | 685 |
| Banaoang | 581 | 14 | - | - | 595 |
| Bantayan | 316 | 7 | 3 | 1 | 327 |
| Bari | 664 | 34 | 1 | - | 699 |
| Bateng | 155 | - | - | - | 155 |
| Buenlag | 421 | 4 | 1 | - | 426 |
| David | 386 | 1 | 3 | - | 390 |
| Embarcadero | 221 | 1 | 1 | - | 223 |
| Gueguesangen | 347 | 1 | 1 | - | 349 |
| Guesang | 189 | - | 1 | - | 190 |
| Guiguilonen | 462 | 10 | - | 1 | 473 |
| Guilig | 238 | 10 | 3 | - | 251 |
| Inlambo | - | - | - | - | - |
| Lanas | 227 | - | 1 | - | 228 |
| Landas | 192 | - | - | - | 192 |
| Maasin | 328 | - | 1 | - | 329 |
| Macayug | 17 | - | - | - | 17 |
| Malabago | 532 | 1 | 1 | - | 534 |
| Navaluan | 274 | 1 | 1 | - | 276 |
| Nibaliw | 187 | - | - | - | 187 |
| Osiem | 307 | 1 | 1 | - | 309 |
| Palua | 100 | - | - | - | 100 |
| Poblacion | 1,198 | 337 | 6 | 11 | 1,552 |
| Pogo | 77 | - | 1 | - | 78 |
| Salaan | 210 | - | 1 | - | 211 |
| Salay | 477 | 14 | 1 | - | 492 |
| Talogtog | 237 | 1 | 1 | - | 239 |
| Tebag | 212 | - | 1 | - | 213 |
| TOTAL | 9,770 | 464 | 31 | 13 | 10,276 |

*Source: Mangaldan Water District*

**Other Water Sources**

Aside from water from the MAWAD, people could also avail of good quality drinking water from distilled water establishments located in some barangays. For residents who do not have water connections, shallow wells and deep wells are their main sources of drinking water.

**Projected Needs**

Only a few were recorded to have been affected by water-borne diseases. Nevertheless, the quality of water must be secured. Several methods can be done to ensure the safety of water from deepwells, shallow wells and springs such as boiling, chlorination and other related methods, For MangaldanWater District, expansion programs must be undertaken for the barangay which is still unserved by the water works system, specifically barangay Inlambo, so as to provide more convenience to the residents of Mangaldan.

Moreover, the Municipal Government of Mangaldan must conduct tests in barangays which depend on wells for their source of drinking water . This is to prevent diseases brought by contaminated water. Health and safety must be given importance by LGU. Thus, safety measures must be undertaken.

Water is a communal resource and as such, nobody can lay claim to water sources, even if they are located in privately owned lots. The community where a water source is located and where the outflow drains can claim “natural rights.”

**Water supply system by type and number of household served**

Ground water is the major source of water for domestic consumption in the municipality. Private individuals for their personal use mostly constructed shallow deep wells. Spring development by gravity or through electric pump is also constructed in selective barangays as additional source of water.

Surface water such as river and creeks are also used for washing and bath purposes. Scarcity of water supply occurs during dry seasons beginning from March and ends in the later part of July especially before the onset of the rainy season.

Level I water system, which are shallow wells and deep wells are located and commonly used in all barangays. As of 2014 , there are approximately 1,639 deepwells and 1,689 shallow wells water systems serving 3,328 households. For level II water system known as the communal faucet water system,

**Table 110:**

**Level 1 Access to Safe Water Supply System and No. of Households, 2013**

|  |  |  |  |
| --- | --- | --- | --- |
| **Barangay Served** | **Total No. of Households** | **Total No. of Households with Access to Safe Water** | **Percentage** |
| Alitaya | 830 | 795 | 95.78 |
| Amansabina | 476 | 450 | 94.53 |
| Anolid | 1,299 | 1,198 | 92.22 |
| Banaoang | 990 | 918 | 92.72 |
| Bantayan | 680 | 639 | 93.97 |
| Bari | 1,183 | 1,107 | 93.57 |
| Bateng | 499 | 464 | 92.98 |
| Buenlag | 731 | 696 | 95.21 |
| David | 853 | 798 | 93.55 |
| Embarcadero | 501 | 466 | 93.01 |
| Gueguesangen | 501 | 474 | 94.61 |
| Guesang | 704 | 667 | 94.74 |
| Guiguilonen | 635 | 610 | 96.06 |
| Guilig | 621 | 574 | 92.43 |
| Inlambo | 299 | 277 | 92.64 |
| Lanas | 612 | 568 | 92.81 |
| Landas | 391 | 365 | 92.32 |
| Maasin | 586 | 538 | 91.80 |
| Macayug | 456 | 420 | 92.10 |
| Malabago | 934 | 877 | 93.89 |
| Navaluan | 677 | 634 | 93.64 |
| Nibaliw | 542 | 509 | 93.91 |
| Osiem | 634 | 599 | 94.47 |
| Palua | 386 | 357 | 92.48 |
| Poblacion | 996 | 958 | 96.18 |
| Pogo | 275 | 252 | 91.63 |
| Salaan | 487 | 452 | 92.81 |
| Salay | 989 | 893 | 90.29 |
| Talogtog | 460 | 421 | 91.62 |
| Tebag | 513 | 482 | 93.95 |
| **TOTAL** | **19,740** | **18,458** | **93.50** |

**Table 111: Level 1 Water Source: Individual Household Facility**

**(For drinking/cooking), 2013**

|  |  |  |  |
| --- | --- | --- | --- |
| **Barangay** | **No. of Households w. safe water sources** | | **No. of Households** |
| **Deepwell** | **Shallow Well** |
| Alitaya | 78 | 110 | 188 |
| Amansabina | 54 | 83 | 137 |
| Anolid | 38 | 60 | 98 |
| Banaoang | 60 | 10 | 70 |
| Bantayan | 81 | 14 | 95 |
| Bari | 77 | 73 | 150 |
| Bateng | 47 | 26 | 73 |
| Buenlag | 61 | 98 | 159 |
| David | 135 | 50 | 185 |
| Embarcadero | 47 | 81 | 128 |
| Gueguesangen | 57 | 78 | 135 |
| Guesang | 55 | 101 | 156 |
| Guiguilonen | 32 | 45 | 77 |
| Guilig | 49 | 95 | 144 |
| Inlambo | 28 | 10 | 38 |
| Lanas | 34 | 9 | 43 |
| Landas | 29 | 30 | 59 |
| Maasin | 68 | 8 | 76 |
| Macayug | 31 | 9 | 40 |
| Malabago | 58 | 92 | 150 |
| Navaluan | 56 | 73 | 129 |
| Nibaliw | 35 | 53 | 58 |
| Osiem | 66 | 59 | 125 |
| Palua | 41 | 7 | 48 |
| Poblacion | 88 | 300 | 388 |
| Pogo | 38 | 9 | 47 |
| Salaan | 47 | 13 | 60 |
| Salay | 43 | 15 | 58 |
| Talogtog | 73 | 22 | 95 |
| Tebag | 33 | 56 | 89 |
| **TOTAL** | **1,639** | **1,689** | **3,328** |

**Level III Water Supply Facility**

**Table 112: Details of Water Service Coverage/Concession Area**

|  |  |
| --- | --- |
| **Barangay Served** | **Total No. of Households Served** |
| Alitaya | 213 |
| Amansabina | 260 |
| Anolid | 606 |
| Banaoang | 509 |
| Bantayan | 289 |
| Bari | 601 |
| Bateng | 139 |
| Buenlag | 376 |
| David | 333 |
| Embarcadero | 185 |
| Gueguesangen | 321 |
| Guesang | 140 |
| Guiguilonen | 440 |
| Guilig | 205 |
| Inlambo | - |
| Lanas | 196 |
| Landas | 152 |
| Maasin | 282 |
| Macayug | - |
| Malabago | 485 |
| Navaluan | 228 |
| Nibaliw | 177 |
| Osiem | 264 |
| Palua | 75 |
| Poblacion | 1,185 |
| Pogo | 59 |
| Salaan | 182 |
| Salay | 457 |
| Talogtog | 220 |
| Tebag | 173 |
| **TOTAL** | **8,755** |

**Current and Projected Needs**

In addition, since most of the people rely on deep and shallow wells as water sources, protecting the aquifers is also of high importance.

The projected water demand of the Municipality of Mangaldan is computed based on the standard consumption develop by LWUA.

**Table 113: Standard Water Demand**

|  |  |  |
| --- | --- | --- |
| **Type of Consumer** | **Level II** | **Level II** |
| a. Residential | 60 lcpd communal faucet | 100-110l cpd individual connection |
| b. Commercial/Industrial | 1.0-2.0 cumd/connection |
| c. Institutional | 3.0 cumd/connection |

**Water requirement**

The projected water consumption for residential use by year 2026 is 2,443,800 liter per capita per day.

**Table 114: Projected Water Consumption**

|  |  |  |
| --- | --- | --- |
| **Year** | **Projected No. of Households** | **Litre/ Capita/ day** |
| 2015 | 21,132 | 2,113,200 |
| 2016 | 21,413 | 2,141,300 |
| 2017 | 21,698 | 2,169,800 |
| 2018 | 21,986 | 2,198,600 |
| 2019 | 22,279 | 2,227,900 |
| 2020 | 22,575 | 2,257,500 |
| 2021 | 22,875 | 2,287,500 |
| 2022 | 23,180 | 2,318,000 |
| 2023 | 23,488 | 2,348,800 |
| 2024 | 23,800 | 2,380,000 |
| 2025 | 24,117 | 2,411,700 |
| 2026 | 24,438 | 2,443,800 |

Institutional will be needing 3 cubic meters per day per connection. The Municipality of Mangaldan has schools and public buildings connected to the Mangaldan Water District. Based on the standard requirement institutional establishments required a total water demand of 72 cubic meters per day.

Commercial and Industrial requires a total water demand of 234 cubic meter per connection per day.

**Table 115: Water Matrix Analysis**

|  |  |  |
| --- | --- | --- |
| **Technical Findings/Observations** | **Implications**  **(Effects)** | **Policy Options / Recommendations** |
| Growing number of concessionaires/households availing of MAWAD services. | May arise an insufficient supply of water. | Construction of additional deep wells and elevated reservoir. |
| Breakdown of existing pumps and motors. | Low water pressure | Rehabilitation/repair of the source. |
| Distribution lines in some areas are not big enough to accommodate huge number of connections in the figure. |  | Installation of additional distribution lines making it parallel for guaranteed sufficient supply of water and accessibility of prospective concessionaires. |
| Dilapidated existing pipes/distribution lines. | Increase on non-revenue water. | Replacement of existing distribution lines. |
| Relocation of existing pipe lines for the construction of drainage or other similar project of the government. | No sufficient fund for the relocation of the pipe lines especially those installed in the public highways. | Coordination of the government like DPWH with the water district before undertaking such project.  Financial Assistant may come from the government to defray the expenses for such. |
| Leakages, busted pipes, defective water meter, illegal connections and stolen water meter. | Increase of unaccounted water.  May cause contamination and health risk to population. | Report immediately to MAWAD and to authorities.  Be vigilant and protect your service lines and water meter. Provide incentives and penalize violators. |