

Planning construction of sewer system

A. Construction of rainfall drainage system development

By the end of 2019, 5,334 kilometers of the target length of 6,925 in the project of rainfall drainage system construction project in the urban development has completed. If the implementation rate is calculated with the ratio of actual implemented length occupied in the target length, the implementation rate for the rainfall drainage system construction in Taiwan reached 77.0% in 2019. In which, the highest rate is 96.7% in Taipei city, followed by 91.1% in New Taipei City, 89.1% in Penghu County, 85.5% in Keelung City, 80.7% in Yunlin County, 77.2% in Chiayi City, 76.4% in Tainan City, 75.9% in Taichung City, 75.4% in Taoyuan City, 75.2% in Kaohsiung City, 73.1% in Hsinchu County and 71.6% in Taitung County. The ratio in all other counties and cities is less than 70%, needed to be improved in construction.

B. Sewage sewer construction

Sewage sewers are sewers for family and industrial sewage. The whole sewage treatment rate includes public sewage sewer available rate, special sewage sewer available rate and the implementation rate of building sewage systems. Sewage sewer construction is regarded as an important index for the urban modernization. In World Competitiveness Yearbook reported by International Institute for Management Development · Lausanne (IMD) public sewage sewer available rate was listed in life quality as one of the evaluation items. The government also treats it as the performance index of sewage sewer construction.

(1) Sewage treatment rate

In recent years, the impact of declining birthrate and other environmental changes factors, which led to an annual decreasing of the average number of persons per household. By the end of 2014, nationwide, the average number of persons per household is only 2.80 persons, according to Interior Ministry data indicates. while "Public sewerage sewer available rate" and "sewage treatment rate" two indicators, formerly calculation of the average number of persons per household was "a household of 4 persons", while still using the "a household of 4 people" to estimate these two indicators have been unrealistic, about the "fifth sewerage sewer construction project (104--109 year)", have been approved by the Executive Yuan, on September 10, 2014, the project amend calculation of two indicators,

which are "public sewerage sewer available rate" and "sewage treatment rate" , originally set up to "households" as the statistical unit modified to "population." That is: $(\text{Actual service population}) \div (\text{Total population}) = (\text{Actual service households} \times \text{The average number of persons per household}) \div (\text{Total population})$, the above formula, using current national (the average number of persons per household) ,computing national "public sewerage sewer available rate " and "sewage treatment rate," this two indicators, using current the county (city) (the average number of persons per household) , computing the county (city) "public sewerage sewer available rate " and "sewage treatment rate," this two indicators.

By the end of 2019, the number of sewage treatment units of the country was 5,489,969 and the sewage treatment rate was 62.10% which increases 4.00% in comparison with 58.10% in 2018. The unit number of public sewage sewer was 3,197,806 (36.17% available rate) which increases 2.45% in comparison with 33.72% in 2018; 882,788 units (9.99% available rate) of special sewage sewer (in the scale of 100 units / 500 people or more in the communities and industrial districts) which decreases 0.48% in comparison with 10.47% in 2018 and units with the implementation of building sewage systems are 1,409,375 (15.94% implementation rate) which increases 2.03% in comparison with 13.91% in 2018. In terms of the sewage treatment rate, New Taipei City is the highest (90.50%), followed by Taipei City (84.83%), Lienchiang County (69.90%), Keelung City (69.02%), Hsinchu County (65.28%), Kaohsiung City (64.12%), Taichung City (62.96%), Taoyuan City (62.84%), Hsinchu City (60.35%) and Yilan County (52.18%); other counties and cities are not over 50%. The CMY was 1,339,345,553 tons, which increased 66.5% compared with that in 2018. In which, the CMY in New Taipei City (451,485,898 tones) is the highest, followed by Taipei City (336,995,094 tones) and Kaohsiung City (297,526,486 tones).

(2) Expense of sewage sewer construction

The sewage sewer is urban public construction. The construction period is long and the investment is large. Therefore, the government must invest more than 10 billions in it every year. The construction expense comes from the government and the folk. As for the part of the government, the expense will be processed from the public budget planned by central government and local government.

The total expense of sewage sewer construction was 17,283,393,000 dollars in 2019, indicating an increase ratio of 11.4% and budget decrement of 1,763,874,000 dollars over the previous year (2018); the highest expense was 16,211,689,000 dollars (93.8%) of construction expense, followed by 724,733,000 dollars (4.2%) of planning design expense and 346,971,000 dollars (2.0%) of land expense. In terms of geological location, the expense of New Taipei City 3,582,938,000 dollars, was the highest, and was followed by 2,316,749,000 dollars for Taoyuan City, and 2,230,158,000 dollars for Kaohsiung City.

(3) Sewage sewer system management fee and income

The sewage sewer system management fee in 2019 was 3,335,948,000 dollars which increases 1.9% (3,273,165,000 dollars) in comparison with previous year (2018); the highest expense was 936,622,000 dollars (28.1%) of Else fee, followed by 884,004,000 dollars (26.5%) for Personnel fee, and 840,643,000 dollars of The power rate fee (25.2%).

As to the usage fee, some counties and cities have not finished the self-government ordinances in charges of sewage usage. In considering the low piping coverage of sewage, only Taipei City and Kaohsiung City charge to the users. Taichung City, Taoyuan City, Yilan County, Chiayi County, Pingtung County, Keelung City and Hsinchu City charge to the users in Industry Park, only. Other counties and cities do not charge for it. The usage fee in 2019 was 1,820,086,000 dollars which increased 5.4% compared with that in 2018.

(4) Sewage sewer pipes and facilities

The constructed length of sewage sewer pipe diameter 600mm or above was 1,221,843 meters till the end of 2018. The constructed length of pipe diameter 300mm–600mm was 3,603,312 meters. The constructed length of sewage sewer pipe diameter below 300mm was 6,438,231 meters. In terms of sewage treatment facilities, the constructed wastewater treatment plants was 103 till the end of 2019. The constructed pumping stations were 271.