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A Study on the Utilization of the Public Charnel Facilities for Cremators by Public Cremation Facilities Using E-Haneul Funeral Information System in the Capital Area

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Abstract

Based on the results of the survey and analysis of this study, we suggested a plan to activate the use of Capital Area Public Charnel Facilities as follows. First, the elderly population in Korea increased from 11.9% in 2013 to 16.4% in 2020, and the number of deaths also increased from 266,257 in 2013 to 305,127 in 2020. The supply of Public Charnel Facilities should be expanded, reflecting the cremation demand in the future and condition for the supply and increasing demand of Public Charnel Facilities after cremation, due to an increase of 14.6%. Second, it is urgent to expand the supply because the available period of using Capital Area Public Charnel Facilities is a short period of at least one year up to five years. However, as it is difficult to build Public Charnel Facilities due to location conflicts with local residents, joint construction plans between local governments should be promoted along with renting Private Charnel Facilities. Third, the enshrinement number ratio of the Public Charnel Facilities to the total cremation number of Capital Area Public Cremation Facilities is 16.3%, which is low. Therefore, when building Public Charnel Facilities, improvement plans for the use of public funeral facilities, such as modernization and promotion of facility level, quality improvement of service level, and creation of a pleasant environment, should be actively promoted.

Keywords: E-Haneul Funeral Information System, Cremation, Charnel, Enshrinement, ashes, enshrinement.

1. Introduction

As the elderly population aged 65 or older in Korea increased from 11.9% in 2013 to 15.7% in 2020 of total population [1], the number of deaths also increased 14.6% from 266,257 in 2013 to 305,127 in 2020. In addition, the deaths in Capital Area, where the population was concentrated, in the process of rapid urbanization and industrialization, stood at 124,018 as of 2020, 40.6% of all deaths in Korea, accounting for a

large portion [2]. It is predicted that the demand for cremation in Capital Area and the demand for enshrinement after cremation will continue to increase in the future.

Therefore, this study selected the current status of ashes enshrinement in Public Charnel Facilities after cremation at Public Cremation Facilities in Capital Area (Seoul, Gyeonggi-do, Incheon), where the population size and deaths are relatively high, as the subject of survey analysis, by using the E-Haneul Funeral Information System [3], which has been operated nationwide since November 1, 2011 and established by the Ministry of Health and Welfare to operate all cremation facilities nationwide as a unified reservation system.

Based on the results of a survey on the use of Capital Area Public Cremation Facilities and Public Charnel Facilities using the E-Haneul Funeral Information System during the period from 2013 to 2020, the purpose of the study is to propose a plan to activate the use of Public Charnel Facilities.

2. Operation situation of Public Cremation Facilities in the Capital Area

As shown in Table 1, as of December 31, 2020, six Public Cremation Facilities in Capital Area have been installed and operated by a total of five local governments, including two in Seoul Metropolitan City, one in Suwon City, Seongnam City, and Yongin City each in Gyeonggi-do, and one in Incheon Metropolitan City [4]. In addition, the Transcendentalization Park (the first crematorium) in Seoul Metropolitan City is the largest in size by Cremation Furnaces of Capital Area Public Cremation Facilities with 23 sets, and followed by Incheon Metropolitan City with 20 sets, Seongnam City with 15 sets, Seoul Metropolitan City Memorial Park (second crematorium) and Yongin City with 11 sets each, and Suwon City with 9 sets.

Total Area of Cremation Facilities of Capital Area Public Cremation Facilities is the largest in Seoul Metropolitan City Memorial Park (second crematorium) with 17,911 m², and followed by 8,296 m² in Yongin City, 7,814 m² in Seoul Transcendentalization Park (the first crematorium), 6,720 m² in Seongnam City, 5,608 m² in Incheon Metropolitan City, and 2,421 m² in Suwon City [5].

Table 1. Status of Public Cremation Facilities in the Capital Area

Sort	Sum	Seoul Metropolitan City	Gyeonggi-do			Incheon Metropolitan City
			Suwon City	Seongnam City	Yongin City	
Public Cremation Facilities (Place)	6	2	1	1	1	1
Cremation Furnaces (Set)	89	34 (23 / 11)	9	15	11	20
Total Area of Cremation Facilities (m ²)	48,770	25,725 (7,814 / 17,911)	2,421	6,720	8,296	5,608
Installation Year	-	1970 / 2012	2000	2001	2013	2003

3. Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in the Capital Area

3.1 Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in Seoul Metropolitan City

As of December 31, 2020, the Seoul Metropolitan City started operating Public Charnel Facilities in 1995 to

enshrine cremated ashes and has currently operated a total of five facilities [6]. In addition, Figure 1 shows the current enshrinement status of ashes at Public Charnel Facilities in Seoul Metropolitan City after cremation at Public Cremation Facilities in Seoul Metropolitan City using the E-Haneul Funeral Information System during the period from 2013 to 2020. During the period from 2013 to 2020, the total cremation number of Public Cremation Facilities in Seoul Metropolitan City using the E-Haneul Funeral Information System was 431,913. Transcendentalization Park (the first crematorium) accounted for 66.5% with 287,415, Memorial Park (the second crematorium) accounted for 33.5% with 144,498, and the annual average cremation number was 53,989. In addition, as of December 31, 2020, the enshrinement capacity of Public Charnel Facilities in Seoul Metropolitan City ranked 90,311st in total, and remaining enshrinement number of available ranked only 3,355th. During the period from 2013 to 2020, the enshrinement number of cremated ashes at Public Cremation Facilities in Seoul Metropolitan City ranked 21,413rd in total, and the annual average enshrinement number ranked 2,677th, accounting for only 5.2% compared to the annual average cremation number in Seoul Metropolitan City [7].

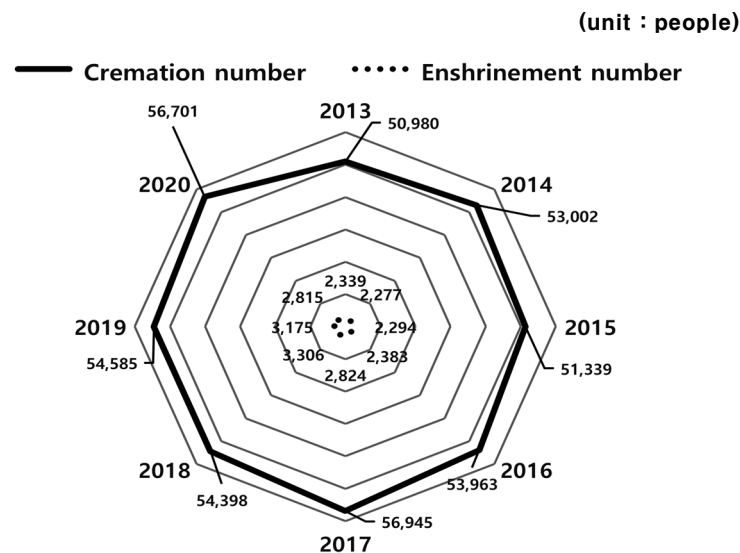


Figure 1. Cremation number and enshrinement number of ashes in Seoul Metropolitan City

From the above analysis, during the period from 2013 to 2020, it was analyzed that the enshrinement number of cremated ashes at Public Charnel Facilities in Seoul Metropolitan City is irregularly increasing or decreasing every year, but overall, it is on the rise. Therefore, considering the remaining enshrinement number of available (3,355th place) and the number of ashes returns at the Public Charnel Facilities in Seoul Metropolitan City, it is estimated that the period of use of the Public Charnel Facilities will end by 2022. Accordingly, it is analyzed that it is urgent to supply additional Public Charnel Facilities.

3.2 Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in Suwon City

Suwon City started operating Public Charnel Facilities in 2001 to enshrine cremated ashes and has currently operated a total of two facilities [8]. In addition, Figure 2 shows the current enshrinement status of ashes at Public Charnel Facilities in Suwon City after cremation at Public Cremation Facilities in Suwon City using the E-Haneul Funeral Information System during the period from 2013 to 2020. During the period from 2013 to 2020, the total cremation number of Public Cremation Facilities in Suwon City using the E-Haneul Funeral Information System was 84,611, and annual average cremation number was 10,576. In addition, as of December 31, 2020, the

enshrinement capacity of Public Charnel Facilities in Suwon City ranked 34,763rd in total, and remaining enshrinement number of available ranked only 1,185th. During the period from 2013 to 2020, the enshrinement number of cremated ashes at Public Cremation Facilities in Suwon City ranked 19,942nd in total, and the annual average enshrinement number ranked 2,493rd, accounting for only 23.6% compared to the annual average cremation number in Suwon City [9].

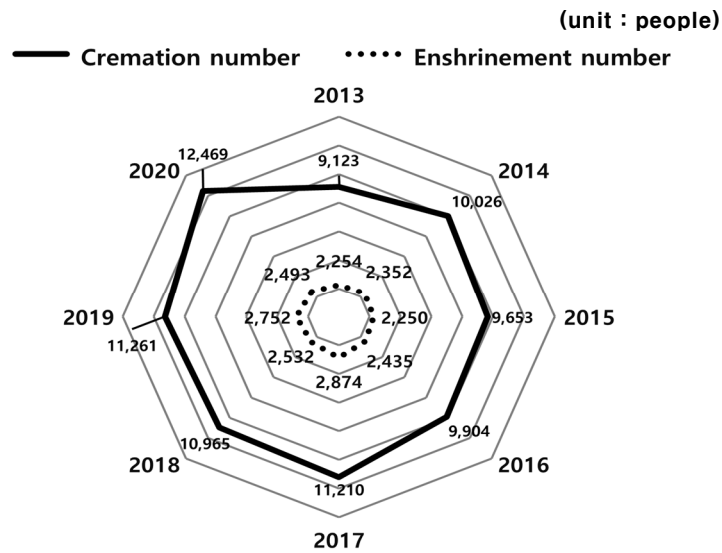


Figure 2. Cremation number and enshrinement number of ashes in Suwon City

From the above analysis, during the period from 2013 to 2020, it was analyzed that the enshrinement number of cremated ashes at Public Charnel Facilities in Suwon City is irregularly increasing or decreasing every year, but overall, it is on the rise. Therefore, considering the remaining enshrinement number of available (1,185th place) and the number of ashes returns at the Public Charnel Facilities in Suwon City, it is estimated that the period of use of the Public Charnel Facilities will end by 2021. Accordingly, it is analyzed that it is urgent to supply additional Public Charnel Facilities.

3.3 Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in Seongnam City

Seongnam City started operating Public Charnel Facilities in 1996 to enshrine cremated ashes and has currently operated a total of two facilities [10]. In addition, Figure 3 shows the current enshrinement status of ashes at Public Charnel Facilities in Seongnam City after cremation at Public Cremation Facilities in Seongnam City using the E-Haneul Funeral Information System during the period from 2013 to 2020. During the period from 2013 to 2020, the total cremation number of Public Cremation Facilities in Seongnam City using the E-Haneul Funeral Information System was 107,365, and annual average cremation number was 13,421. In addition, as of December 31, 2020, the enshrinement capacity of Public Charnel Facilities in Seongnam City ranked 22,501st in total, and remaining enshrinement number of available ranked 5,505th. During the period from 2013 to 2020, the enshrinement number of cremated ashes at Public Cremation Facilities in Seongnam City ranked 17,498th in total, and the annual average enshrinement number ranked 2,187th, accounting for only 16.3% compared to the annual average cremation number in Seongnam City [11].

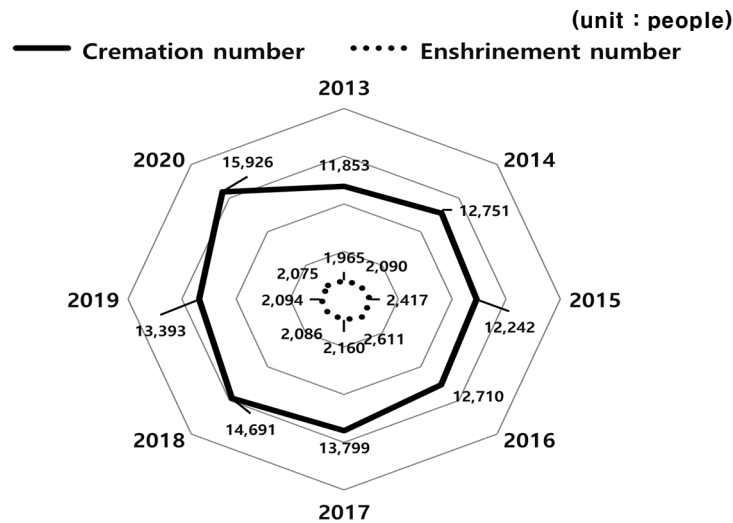


Figure 3. Cremation number and enshrinement number of ashes in Seongnam City

From the above analysis, during the period from 2013 to 2020, it was analyzed that the enshrinement number of cremated ashes at Public Charnel Facilities in Seongnam City is irregularly increasing or decreasing every year, but overall, it is on the rise. Therefore, considering the remaining enshrinement number of available (2,187th place) and the number of ashes returns at the Public Charnel Facilities in Seongnam City, it is estimated that the period of use of the Public Charnel Facilities will end by 2023. Accordingly, it is analyzed that it is necessary to supply additional Public Charnel Facilities.

3.4 Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in Yongin City

Yongin City started operating Public Charnel Facilities in 2013 to enshrine cremated ashes and has currently operated a total of one facility [12]. In addition, Figure 4 shows the current enshrinement status of ashes at Public Charnel Facilities in Yongin City after cremation at Public Cremation Facilities in Yongin City using the E-Haneul Funeral Information System during the period from 2013 to 2020. During the period from 2013 to 2020, the total cremation number of Public Cremation Facilities in Yongin City using the E-Haneul Funeral Information System was 86,179, and annual average cremation number was 10,772. In addition, as of December 31, 2020, the enshrinement capacity of Public Charnel Facilities in Yongin City ranked 26,990th in total, and remaining enshrinement number of available ranked 9,537th. During the period from 2013 to 2020, the enshrinement number of cremated ashes at Public Cremation Facilities in Yongin City ranked 17,453rd in total, and the annual average enshrinement number ranked 2,182nd, accounting for only 20.3% compared to the annual average cremation number in Yongin City [13].

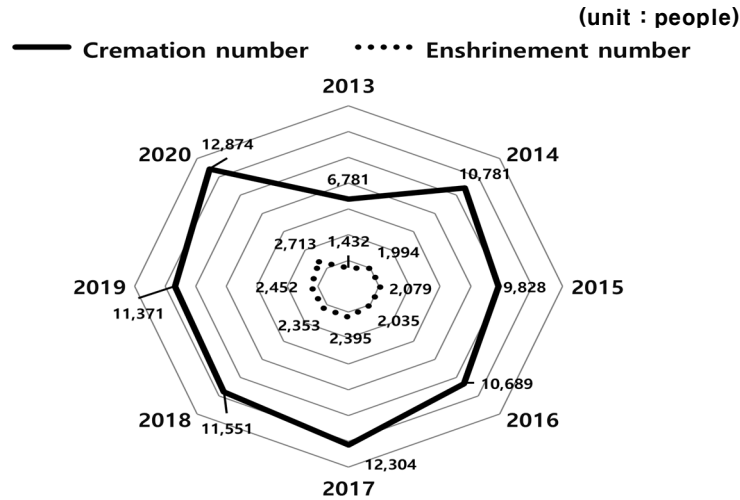


Figure 4. Cremation number and enshrinement number of ashes in Yongin City

From the above analysis, during the period from 2013 to 2020, it was analyzed that the enshrinement number of cremated ashes at Public Cremation Facilities in Yongin City continues to increase every year. Therefore, considering the remaining enshrinement number of available (2,182nd place) and the number of ashes returns at the Public Charnel Facilities in Yongin City, it is estimated that the period of use of the Public Charnel Facilities will end within 2025.

3.5 Cremation status of Public Cremation Facilities and enshrinement status of Public Charnel Facilities in Incheon Metropolitan City

Incheon Metropolitan City started operating Public Charnel Facilities in 2003 to enshrine cremated ashes and has currently operated a total of six facilities [13]. In addition, Figure 5 shows the current enshrinement status of ashes at Public Charnel Facilities in Incheon Metropolitan City after cremation at Public Cremation Facilities in Incheon Metropolitan City using the E-Haneul Funeral Information System during the period from 2013 to 2020. During the period from 2013 to 2020, the total cremation number of Public Cremation Facilities in Incheon Metropolitan City using the E-Haneul Funeral Information System was 179,147, and annual average cremation number was 22,393. In addition, as of December 31, 2020, the enshrinement capacity of Public Charnel Facilities in Incheon Metropolitan City ranked 131,539th in total, and remaining enshrinement number of available ranked 31,821st. During the period from 2013 to 2020, the enshrinement number of cremated ashes at Public Charnel Facilities in Incheon Metropolitan City ranked 53,752nd in total, and the annual average enshrinement number ranked 6,719th, accounting for only 30.0% compared to the annual average cremation number in Incheon Metropolitan City [14].

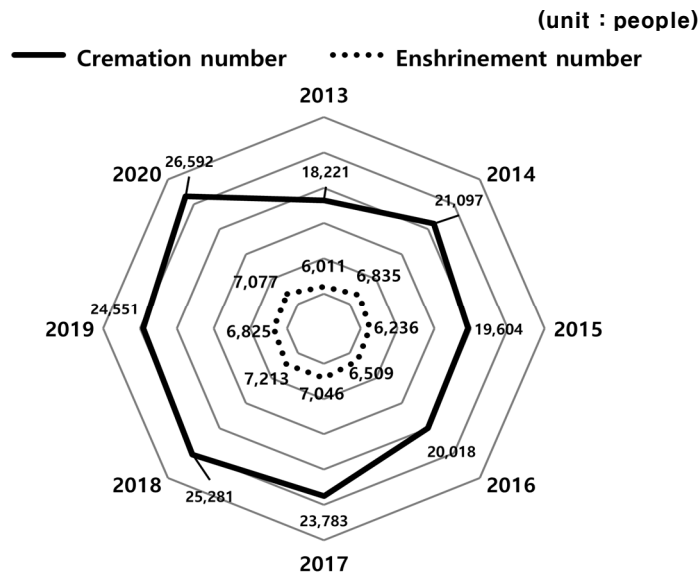


Figure 5. Cremation number and enshrinement number of ashes in Incheon Metropolitan City

From the above analysis, during the period from 2013 to 2020, it was analyzed that the enshrinement number of cremated ashes at Public Cremation Facilities in Incheon Metropolitan City is irregularly increasing or decreasing every year, but overall, it is on the rise. Therefore, considering the remaining enshrinement number of available and the number of ashes returns at the Public Charnel Facilities in Incheon Metropolitan City, it is estimated that the period of use of the Public Charnel Facilities will end within 2025.

4. Comprehensive analysis results

4.1 Enshrinement status of ashes in Public Charnel Facilities

Figure 6 shows the Public Charnel Facilities enshrinement status of cremated ashes (corpse, opening remains, dead fetus) at Capital Area Public Cremation Facilities using the E-Haneul Funeral Information System during the period from 2013 to 2020.

During the period from 2013 to 2020, the enshrinement number of Public Charnel Facilities of cremated ashes at Capital Area Public Cremation Facilities ranked 130,058th in total, and annual average enshrinement number ranked 16,257th, accounting for 14.9%. It was found to be very low number, compared to the annual average cremation number of Capital Area Public Cremation Facilities which is 108,775. In addition, regarding the enshrinement number of Public Charnel Facilities by Capital Area Public Cremation Facilities, Incheon Metropolitan City ranked the highest with 53,752nd, followed by Seoul Metropolitan City with 21,413rd, Suwon City with 19,942nd, Seongnam City with 17,498th, and Yongin City with 17,453rd.

From the above analysis, comparing that the enshrinement number of Public Charnel Facilities in 2013 ranked in 14,00st, that of Public Charnel Facilities in 2020 ranked in 17,173rd, increased by 3,172nd, a 22.7% increase. Therefore, in preparation for the continued increase in demand for use of Public Charnel Facilities, it was analyzed that it was necessary to steadily expand the supply of Public Charnel Facilities in Public Cremation Facilities.

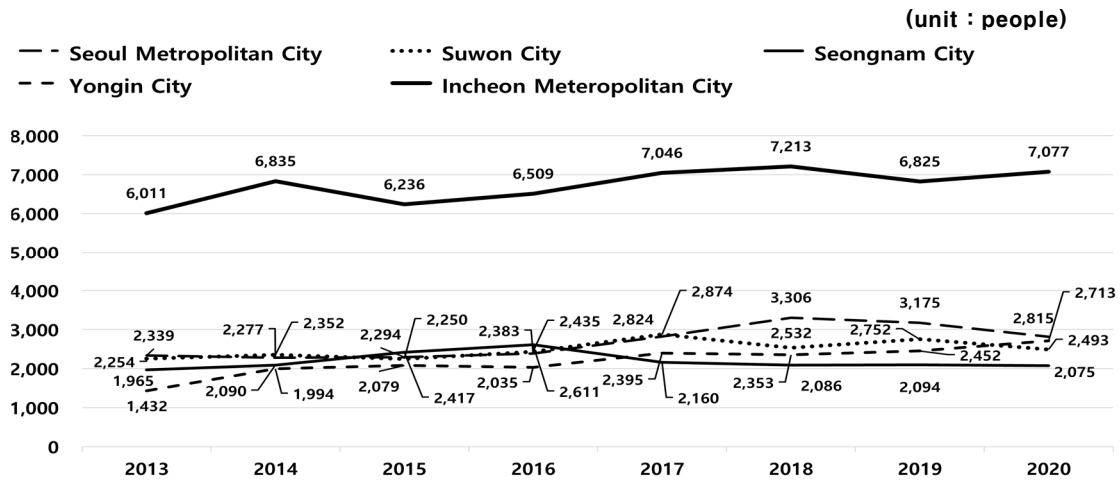


Figure 6. Enshrinement status by year of public charnel facilities in the capital area

4.2 Status of enshrinement capacity and remaining enshrinement number of available by Public Charnel Facilities

As of December 31, 2020, Figure 7 shows that the enshrinement capacity of Public Charnel Facilities to enshrine cremated ashes (corpse, opening remains, dead fetus) at Public Cremation Facilities in Capital Area using the E-Haneul Funeral Information System ranked 306,104th in total and remaining enshrinement number of available ranked 51,403rd, accounting for only 16.8%.

From the above analysis, regarding the annual average enshrinement number by Public Charnel Facilities in Capital Area Public Cremation Facilities, Incheon Metropolitan City ranked the highest with 6,719th, followed by Seoul Metropolitan City with 2,677th, Suwon City with 2,493rd, Seongnam City with 2,187th, and Yongin City with 2,182nd. Therefore, when calculating the future available period of use of Public Charnel Facilities by applying the remaining enshrinement number of available compared to the annual average enshrinement number, Incheon Metropolitan City and Yongin City showed the highest with 5 years each, followed by Seongnam City with 3 years, Seoul Metropolitan City with 2 years, and Suwon City with a year respectively. As such, as the available period of use of Public Charnel Facilities is from a minimum of a year to a maximum of 5 years, it was analyzed that it is very urgent to expand the supply of Public Charnel Facilities.

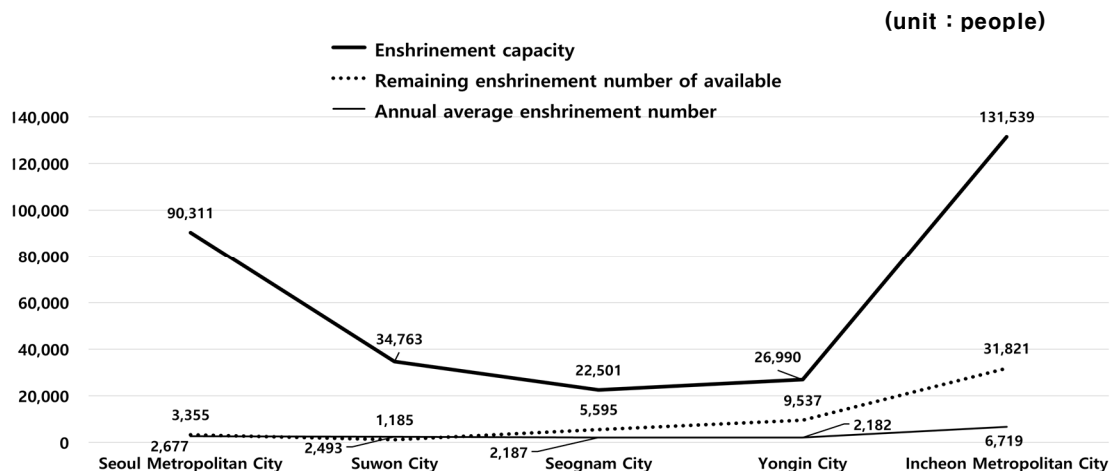


Figure 7. Status of enshrinement capacity and remaining enshrinement number of available by Public Charnel Facilities in the Capital Area

5. Conclusion

Based on the research and analysis results of the use of Capital Area Public Cremation Facilities and Public Charnel Facilities using the E-Haneul Funeral Information System derived through this study, we would like to suggest the following plans to activate the use of Public Charnel Facilities.

First, the elderly population in Korea increased from 11.9% in 2013 to 16.4% in 2020, and the number of deaths also increased by 14.6% from 266,257 in 2013 to 305,127 in 2020. Accordingly, the supply of Public Charnel Facilities should be expanded, reflecting the demand for cremation due to an increase in the number of deaths and the supply and demand conditions for increased use of Public Charnel Facilities after cremation. Second, it is urgent to expand supply because the available period of Capital Area Public Charnel Facilities is a short period of at least one year to up to five years, but if it is difficult to build Public Charnel Facilities due to location conflicts with local residents, such as Seoul Metropolitan City, joint construction plans between local governments should be promoted along with the plan for the rental use of Private Charnel Facilities. Third, the ratio of enshrinement number of Public Charnel Facilities to the total cremation number of Capital Area Public Cremation Facilities was very low at 16.3%. Therefore, when building Public Charnel Facilities, promotion plans, such as modernization and promotion of facilities, quality improvement of service level, and creation of a pleasant environment, for the use of Public Funeral Facilities should be actively carried out.

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