

# The release of the tool to forecast future population and households using small areas (blocks and sections) as the unit (Research period: 2014–2016)

Wataru Katsumata, Head(Dr.Eng.) Urban Development Division, Urban Planning Department

*Keywords: Future population and households, small areas, forecasting tool, compact urban development*

## 1. Introduction

The National Institute for Land and Infrastructure Management (NILIM) created and released the Future Population and Household Forecasting Tool using small areas (blocks and sections) as the unit and released it in January 2017.<sup>1</sup> This paper introduces the objective of creating the tool, its characteristics, and how it is being used.

## 2. The objective of creating Future Population and Household Forecasting Tool and its characteristics

An important point in proposing a town development policy is to analyze current problems and future perspectives of the town at the town level as well as the regional level. The most fundamental factor in this process is the future outlook of the population and the number of households. The only forecast available for the population in five-year age groups and genders and the number of households is based on individual cities, wards, towns, and villages as the unit, which is prepared by the National Institute of Population and Social Security Research.

The Future Population and Household Forecasting Tool is created based on Microsoft Excel so that future population and household forecasting in five-year age groups and genders can be easily created in the unit of small areas (districts and sections). It allows forecasting in all small areas (districts and sections) within a municipality by selecting options from the menu. Cohort change-rate method or primary factors cohort can be selected as a forecasting method. The tool contains the national population database, which is required for forecasting, and users do not have to provide additional data. The outcome of forecasting can be displayed on the map in Microsoft Excel using the attached simple drawing tool (Figure 1). It can also be output to a geographical information system

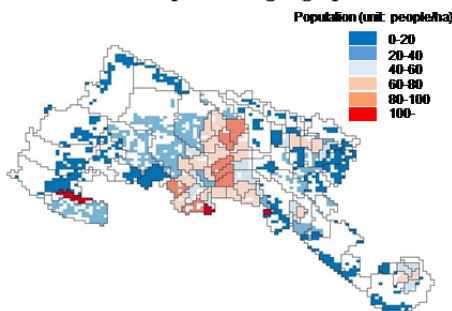


Figure 1: An example of the map of future population forecasting using the attached drawing tool

(GIS).

## 3. Uses of the tool

This tool is registered at the Geospatial Information Center, the portal website operated by the Association for Promotion of Infrastructure Geospatial Information Distribution.<sup>2</sup> Many users, mainly local governments and town development consultants, have been downloading the tool. The uses of the tool include location optimization planning to shift urban functions, such as medical, welfare, and commercial facilities, and residential functions to a certain area to accelerate compact urban development, urban planning master plans, and the establishment of vacant house utilization plans (figure 2, figure 3). Also, the Guideline for Location Optimization Planning<sup>3</sup> recommends this tool as a way to forecast the future population of an area.

## 4. In the end

The author is now developing a cost-benefit evaluation tool for district management in suburban cities and a cost effectiveness forecasting tool for the spatial future demand-supply forecasting of medical and welfare facilities, which are going to be linked to this tool. These tools are going to be released when possible.

### For detailed information

- 1) NILIM press release. “The development of district-level future population forecasting tool: Forecast the future of a town and promote compact town development”  
[http://www.nilim.go.jp/lab/jeg/kisya20170127\\_2.pdf](http://www.nilim.go.jp/lab/jeg/kisya20170127_2.pdf)
- 2) Geospatial Information Center. Future Population and Household Forecasting Tool download URL  
<https://www.geospatial.jp/ckan/dataset/cohort>
- 3) City Planning Division, City Bureau, Ministry of Land, Infrastructure, Transport and Tourism. Guideline for Location Optimization Planning. (revised on April 10, 2017)  
<http://www.mlit.go.jp/common/001181578.pdf>

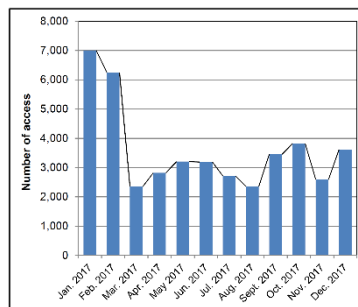


Figure 2: Total number of access (prepared from data provided by the Geospatial Information Center)

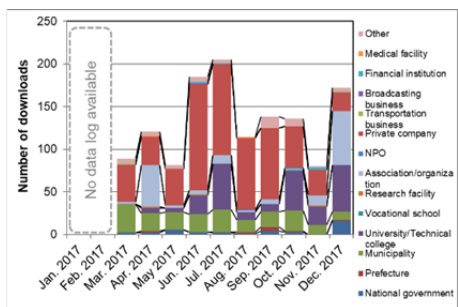


Figure 3: The total number of downloads by user category (Prepared from data provided by the Geospatial Information Center)