

2017

The Development of Japanese City's Future Simulation System: My City Forecast

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Recommended Citation

Seto, Toshikazu; Omata, Hiroshi; Fukushima, Yuki; Hasegawa, Yoko; Maeda, Midori; and Sekimoto, Yoshihide (2017) "The Development of Japanese City's Future Simulation System: My City Forecast," *Free and Open Source Software for Geospatial (FOSS4G) Conference Proceedings*: Vol. 17 , Article 27.

DOI: <https://doi.org/10.7275/R5445JPN>

Available at: <https://scholarworks.umass.edu/foss4g/vol17/iss1/27>

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Optional Cover Page Acknowledgements

This research was supported by JSPS KAKENHI (grant number 17H00839).

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The Development of Japanese City's Future Simulation System: My City Forecast

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Abstract: In recent years, the optimization of urban management due to the rapid population decline has been one of the major issues in Japan. Future population estimation and related statistical information, such as the location information of the public facility is now available to open. However, open data utilization in the urban planning field is not advanced in comparison with other countries. We constructed the Web system using FOSS4G that citizens can be the future image of the city to operate on their own. It used mainly below FOSS4G tools; OpenLayers, PostGIS, Pgrouting and Geocolr. The collected data calculated in advance, and the default mode for displaying a simulation result in the 500m mesh unit. In addition to there is a customized mode to be re-calculated using the geodata that citizen is uploading open geospatial data. In the customization mode, to choose the residence induction region arbitrarily, it is possible to more detailed simulation by inputting the future urban areas. We also held a workshop for Japanese citizens the variety of stakeholders, it was also able to get feedback on the functional requirements. For the ordinary citizens are not familiar with GIS, to be able to display an easy-to-understand the future of the region have been evaluated. However, also revealed that the operation of the customized version feels as difficult to use, such as difficult legend of adjustment.

Poster Download: <http://scholarworks.umass.edu/foss4g/vol17/iss1/27>

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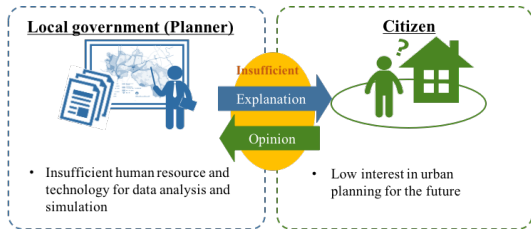
The Development of Japanese City's Future Simulation System: MyCityForecast (<https://mycityforecast.net/>)

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Introduction

In recent years, the optimization of urban management due to the rapid population decline has been one of the major issues in Japan. Future population estimation and related statistical information, such as the location information of the public facility is now available to open.

However, open data utilization in the urban planning field is not advanced in comparison with other countries and big gap between planner and citizen for urban planning in Japanese local government.



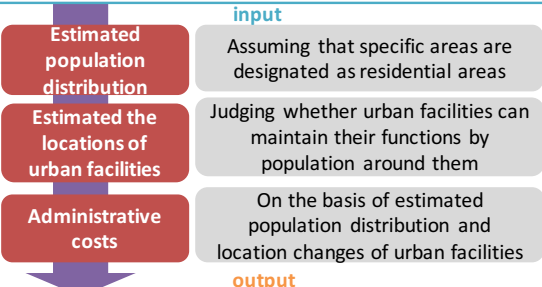
We developed "My City Forecast" for urban design communication of our own cities

MyCityForecast (MCF)

We constructed the Web system using FOSS4G that citizens can be the future image of the city to operate on their own. The collected data calculated in advance, and the default mode for displaying a simulation result in the 500m mesh unit.

* We are developed and opened 1,670 local governments; 97% of all Japanese cities.

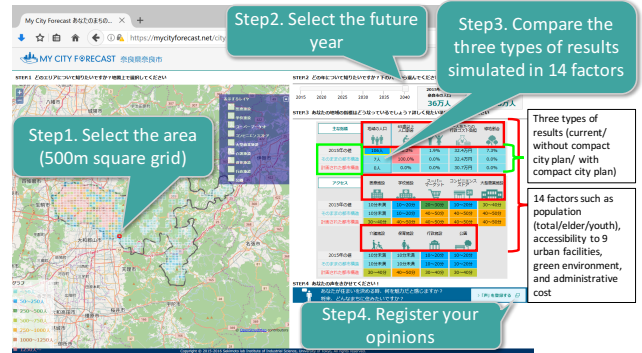
- Population distribution
- Green land distribution
- Administrative cost information
- Land use plans
- Urban facility distribution
- Public transportation system



14 indicators of living environment

The simulation model of MyCityForecast

Main Framework	Library (JavaScript)
Php 5.5	OpenLayers.js
Mono 5.0.1	D3.js
PostgreSQL 9.3	Geocolor.js
- Postgis 2.0	Geo_tools.js
- pgRouting 2.0	Codemirror.js
gdal/ogr 2.2.0	Jquery (Jqplot)



2015 value	Current status
Business As Usual Ver.	Case without any plans (BAU)
Compactized Ver.	Case with concept of compact city

The basic web interface of MyCityForecast

MCF Customize Version

"customization" allows the user to tailor the system to local (geographic) areas and conditions. In particular, the "residential advancement district" has different ideas in various peoples situation, and re-simulation is necessary.

Summary of MyCityForecast Customize Version

MCF Workshop with Citizens

We held a workshop with the administration - citizens in three areas this year (Okayama, Shimane and Toyama). In particular, the simulation customizing the residential guidance area creates an important discussion for future planning. It is expected to be used in the policy of aging, disaster prevention, child rearing.

