

REDEFINING RESIDENTIAL DENSITY: DIRECTIONS FOR VACANT LOT MANAGEMENT IN SHRINKING SUBURBAN ENVIRONMENTS

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ABSTRACT

Higher concentrations of vacant lots found to persist on the urban fringe are becoming increasingly central to the debate on how a shrinking society can transition into more compact urban forms. These open spaces can become valuable resources to improve residential quality, just as easily as they can become sources of blight and in the longer term becomes an issue of economic efficiency in the maintenance of cities, as large parcels of land equipped with infrastructure remain under utilized (Asami, 2014). The body of existing literature has developed from studying symptomatic treatment options such as temporary vacant lot utilization and multiple-lot use by nearby residents (Harada et al. 2006; Nakanishi et al., 2004; Terada et al., 2012), to the temporal changes occurring in suburban settlements, in terms of changes in population structure, distribution of vacant lots and housing, residential satisfaction, etc. (Aoki and Tajimi, 2005; Miyake et al., 2012; Ohsawa et al., 2009), and finally to using such indicators for assessing the sustainability of these settlements (Ito and Kaido, 2013; Kageta and Toda, 2007; Yoshida, 2010). However, these studies and recently developed policy instruments such as the “Restructuring Plan [*ricchi tekiseika keikaku*]”, which designates certain areas for guiding to higher densities by concentrating investments, provide little in the way of deciding where these urban centers should be, or how the actual process of transition should be facilitated while utilizing local resources.

Therefore, this study aims to investigate the current situation of suburban developments by observing vacant lots, and in doing so configure a framework for better understanding which management method best fits the context of each settlement. It examines the aspects of suburban settlements from three perspectives: 1) developmental stage, in terms of location and development period, 2) situation of vacant lots, in terms of quantity, trend, maintenance and utilization activities, and resident opinion, and 3) residential quality measured by residents' satisfaction. Directions for management are proposed with the goal to prevent negative externalities of vacant lots, to effectively utilize them in order to embrace the development potential of the area, and to respond to the residential needs of residents.

While existing literature are limited to individual case studies of housing estates, this study compares a number of residential neighborhood units (*chochomoku* intersected by the total area of residential land use zones) within a single municipal boundary to gain a more comprehensive picture of trends in the area. Ushiku City, Ibaraki is selected for case study as a bedroom community on the outskirts of the Tokyo Metropolitan Region, comprised of settlements created through incremental suburban development typical of the post-war growth period, and recently showing signs of population shrinkage and increasing vacant lots.

According to the review of vacant lot distribution using 2011 Land Use Survey Data and aerial images of three time periods, location and development period both appeared to affect the condition of vacant lots in the study area. Quantity of vacant lots were higher for areas located further away from the railway station, as well as in areas developed before 1973. When grouped into four categories, average vacant lot rates for the Far/Aged group of neighborhood units appeared highest at 8.33%, while that of the Near/Young group were lowest at 2.84%, and the

remaining two groups, Far/Young and Near/Aged displayed similar levels in the middle range at 4.83% and 4.51%.

Four exemplary neighborhood units were then selected for district scale analysis to examine changes in built-up rate, current maintenance and utilization activities, resident opinion, and residential satisfaction. For young settlements developed after 1973, built-up rates reached high levels around 90% relatively quickly, quantity of vacant lots is low and maintenance levels are high, which suggest that these areas will continue to have high development potential. Residents in the young settlements near the station correspondingly hold a generally positive image of vacant lots in the district while those living beyond walking distance more strongly express negative aspects, likely due to remaining woodland and agricultural land. Residential satisfaction is high for both types except for “convenience of public transportation” and “convenience of commuting” which are lower for the group of settlements far from the station.

Aged settlements developed before 1973 have shifted less quickly towards completion and therefore contain a larger quantity of vacant lots. Settlements near the station currently have higher built-up rates, but residents in both areas expressed concern for the increase in vacant housing, suggesting built-up rates will peak or decrease in the near future. In areas near the station, maintenance levels were high and opinion toward their existence was largely positive. Aged settlements far from the station not only contained the highest proportion of un-utilized vacant lots but a majority of them were unmaintained, which has likely contributed to creating the dominating negative image. Residential satisfaction was high for the aged settlements near the station whereas, satisfaction for aged settlements far from the station was contrastingly low for all aspects except “ventilation and sunlight,” with especially low scores regarding

convenience, sanitation, and public security. Conditions may have been especially poor due to the fact that it is an un-serviced area developed under the Old Housing and Urban Development law.

Finally, findings were compared to derive relevant management directions. From observations of current settlement patterns, it is suggested that the study area transition into a polycentric density structure, by developing young settlements to contain higher population densities, while promoting lower densities in aged areas. For Near/Young settlements, it is recommended that temporary utilization of vacant lots be driven with the development and promotion of institutional frameworks for keeping maintenance and accommodating additional spatial needs of residents. For Near/Aged settlements, vacant lots are suggested to be utilized for collective needs such as community gardens and mobile welfare services, or building housing on multiple lots to accommodate new lifestyles attractive for young residents, centered around urban gardening activities. Far/Young settlements have the potential to become sub-centers for the urban area, and therefore it is suggested that vacant lots be utilized for mobile welfare services and gardening activities as well as for building housing and small-scale commercial facilities. For Far/Aged settlements, it is recommended that certain areas be designated for withdrawal and returning its land use to woodland, while other areas in and around remaining residences be equipped with housing and services to promote autonomous lifestyles based on contemporary agricultural practices.

Key words: vacant lot, suburban development, Ushiku City