Regional Planning Issues and Measures Implemented in City and Regional Master Plans  
- Case Study in Two Regional City Planning Areas in Okinawa -

Takuma Nagamine*1 and Takayuki Ikeda2

1Graduate Student, Graduate School of Engineering and Science, University of the Ryukyu, Japan  
2Professor, Dept. of Civil Engineering and Architecture, Faculty of Engineering, University of the Ryukyu, Japan

Abstract

The purpose of this study is to identify regional planning issues and measures implemented to resolve such issues in city and regional master plans, particularly in the Naha and Koza city planning areas, by primarily examining the awareness of municipal government officials, and also to identify measures concerning regional planning issues in both master plans.

Municipal government officials are aware of regional planning issues, and each municipality is dealing with issues such as sprawl, waning city centers and traffic congestion in its own way. There were also cases where several municipalities worked together to resolve these issues. Moreover, although regional master plans address a few of these issues, they are still not sufficient.

The following three measures can be considered regarding the resolution of municipal regional planning issues: 1) Coordination among municipalities to deal with problems, 2) Addressing of problems in a uniform manner according to the regional master plan, and 3) Ensuring that the upper-level plans are consistent throughout, and that actions are taken according to such plans.

Keywords: city planning area master plan; regional plan; master plan; Okinawa

1. Introduction

1-1. Background and Purpose

The advancement of motorization in modern times has caused commercial and residential areas in cities to expand to the point that regional planning issues such as sprawl, traffic congestion, and environmental destruction, all of which are issues that cannot be dealt with by any single municipality, are becoming increasingly conspicuous. While the effort to promote greater decentralization in Japan has given municipalities increased discretion in recent years, thereby affording greater liberty to form plans of their own, achieving regional consistency among those municipal plans will prove to be difficult, and the importance of regional plans will thus likely be amplified in the future. In the context of this research a “region” is defined as an area comprising multiple municipalities, and a “regional plans” as a plan that involves multiple municipalities.

Ten years have passed since the 1992 implementation of the Basic Principles on Municipal City Planning, also known as “city master plan,” and many municipalities have completed the planning phase and have moved on to or are in the process of moving on to the implementation phase. However, while the measure has given municipalities the authority to form plans tailored to their own administrative areas, it has been pointed out that plans which complement city master plans from a broader perspective are almost non-existent.

In light of this situation, the City Planning Law was amended in May 2000 to require municipalities to produce a policy for improvement, development and conservation, also known as the city planning area master plan (hereinafter called “regional master plan”) for each city planning area by March 2004. However, this still leaves several unresolved tasks such as coordination with existing city master plans and measures to tackle regional planning issues.

As far as previous studies on the relationship between regional planning and city/municipal master plans are concerned, one can look to Oshika’s study1), in which the consistency between the policy for improvement, development, and conservation and city master plans identified the roles of prefectures and municipalities and the relationship between the two as plan-devising bodies, was examined. There is also a series of studies by Muraki et al.2) 3) 4) that suggested how to address regional planning issues in Japan’s city master plans by examining overseas case studies on the relationship between regional and municipal plans. However, there has not yet been a paper that both clearly identifies regional planning problems...
in Okinawa’s city master plans and explores how to address the regional planning issues in city master plans and the newly introduced regional master plans.

This research examines the city master plans and the regional master plans of Okinawa’s two regional city planning areas (Koza and Naha), primarily by surveying municipal government officials involved in the planning of said areas, to uncover what regional planning issues and measures, if any, are being taken to resolve those issues, and analyze the measures against regional planning issues in both master plans.

1-2. Method of Research

First, municipal government officials involved in the city planning master plan are surveyed using a questionnaire in order to seek out and analyze regional planning issues; while existing city master plans, and tables and charts therein, are also analyzed as a supplementary measure.

Secondly, measures concerning regional planning issues in regional master plans are manifested by, 1) surveying municipal government officials who are currently involved in the formulation of regional master plans, 2) analyzing the plan formulation process and the plans themselves, and 3) conducting hearing investigation on Okinawa Prefecture officials, who are the actual designers of regional master plans. In both master plans, measures concerning regional planning issues are evaluated.

1-2-1. Method of Research

First, municipal government officials involved in the city planning master plan are surveyed using a questionnaire in order to seek out and analyze regional planning issues; while existing city master plans, and tables and charts therein, are also analyzed as a supplementary measure.

Secondly, measures concerning regional planning issues in regional master plans are manifested by, 1) surveying municipal government officials who are currently involved in the formulation of regional master plans, 2) analyzing the plan formulation process and the plans themselves, and 3) conducting hearing investigation on Okinawa Prefecture officials, who are the actual designers of regional master plans. In both master plans, measures concerning regional planning issues are evaluated.

The questionnaire given to municipal master plan officials can be largely divided into two parts: Questions related to “regional planning issues in municipalities” in one part and “regional master plan as an upper-level plan to city master plan” in the other.

2. City Master Plans

2-1. Location of Okinawa Prefecture

Okinawa Prefecture is located in the southernmost part of the Japanese archipelago. The prefecture comprises some 160 large and small islands (of which 50 islands are populated), sprinkled over 1,000km of ocean east to west, and 400km north to south.

Approximately 1.3 million people live on fifty of these islands. Blessed with stunningly lush nature, it has a long history of close relations with China, Japan and other countries of Asia as Japan’s only semitropical area. From the prefectoral capital of Naha city, it takes about two hours and 30 minutes to fly to Tokyo (approx. 1,550km), one hour and 30 minutes to Shanghai, China (approx. 820km), and one hour to Taiwan (approx. 630km).

Okinawa ranks 44th in size among Japan’s 47 prefectures and contains 0.6% of the country’s total land area.

2-2. Overview of City Planning Areas in Okinawa

There are seven city planning areas in Okinawa: Motobu, Nago, Ishikawa, Koza, Naha, Hirara, and Ishigaki, in order from north to south (Fig.1). Three of them are regional city planning areas, and the other 4 are single city planning areas. The total land area of these seven areas combined is 109,504 ha (48% of Okinawa), and the population is 1,212,900 (92% of Okinawa’s population). A distinct feature of city planning area designation in Okinawa is that the municipal administrative areas and the city planning areas completely match.

The Naha regional city planning area consists of 13 municipalities including Naha, the prefectural capital, and among the seven city planning areas it is the largest in terms of both total area and population. It also employs the area division system. The Koza regional city planning area follows with seven municipalities, but does not employ the area division system.

2-3. Present State of City Master Plans

A look at Okinawa’s 28 municipalities with designated city planning area shows that, as of Dec. 2003, 15 have already made a plan, six are in the process of doing so, and seven have not yet made one.
This means that almost half of the municipalities (53%) have already finished making a plan (Table 2). Since the national average for municipalities with a city master plan is approximately 49%, it is safe to say that Okinawa’s figure reflects the national average.\[^4\]

In the Naha regional city planning area, nine out of 13 municipalities have already made a plan, and the other four are in the process of formulation as well, and due to be completed by the end of 2004. About half of the municipalities in the Koza region have already made a plan.

One reason for the discrepancies is that there is no specific deadline to form a city master plan, and another is that some municipalities are waiting for an opportune time in relation to city development and zoning. In Ginowan City, the prospect of the return of military land makes the design of a city master plan a difficult task to achieve, but the City has begun working on a plan nonetheless.

### Table 2. Formulation of City Master Plan in Okinawa

| Area   | Municipality             | Have made one | Making one | No action | Year completed |
|--------|--------------------------|---------------|------------|-----------|----------------|
| Naha area | Naha city                | O             |            |           | 1999           |
|        | Urasoe city              | O             |            |           | 1998           |
|        | Ginowan city             | O             |            |           |                |
|        | Itoman city              | O             |            |           |                |
|        | Okinagashima village     | O             |            |           | 2000           |
|        | Nakagusuku village       | O             |            |           | 1997           |
|        | Nishihara town            | O             |            |           | 1999           |
|        | Tomishiri city           | O             |            |           |                |
|        | Urasoe city              | O             |            |           | 1998           |
|        | Koza city                | O             |            |           | 1998           |
|        | Yomitan village          | O             |            |           |                |
|        | Ozato village            | O             |            |           |                |
|        | Sasebo city              | O             |            |           | 2000           |
|        | Okinawa city             | O             |            |           | 1997           |
|        | Ginowan city             | O             |            |           |                |
|        | Yomitan village          | O             |            |           | 2002           |
|        | Katuren town             | O             |            |           |                |
|        | Yomitan village          | O             |            |           | 1997           |
|        | Kadoma town              | O             |            |           |                |
|        | Chatan town              | O             |            |           | 1999           |
| Koza area | Ishikawa city         | O             |            |           | 2000           |
|        | Nago city                | O             |            |           |                |
|        | Motobu                    | O             |            |           |                |
|        | Hirara                   | O             |            |           |                |
|        | Gusukubame village       | O             |            |           |                |
|        | Shimoji town             | O             |            |           |                |
|        | Ueno town                | O             |            |           |                |
|        | Ishigaki city            | O             |            |           | 1998           |
| National Total (as of March 2002) | 1,003 | 1,022 |}

*The gray-zone represents target governments in this research

### 3. Regional Planning Issues in City Master Plans

#### 3-1. Municipal Government Officials’ Awareness of Regional Planning Issues

**Table 3. Abstract of Questionnaire**

| Period | 2 weeks from Monday, 5 November 2003 |
| Targets | 20 municipalities in the Naha region and the Koza region |
| Method | Distributed and collected by regular mail |
| Collected | From 17 municipalities (Naha region: 11, Koza region: 6) |

1) Survey of Municipal Master Plan Officials - Abstract

The following results are from 14 municipalities that have already made or are in the process of making a city master plan out of the 17 municipalities from which survey results were collected.

2) Consistency with Upper-level and Related Plans

Many of the upper-level and related plans in the city master plans were municipal general plan, national land use plan, policy for improvement, development, and conservation\[^5\], and the Okinawa Promotion and Development Plan\[^6\]. The policy for improvement, development, and conservation is positioned as an upper-level plan in all 11 city master plans in the Naha region. Fourteen municipalities in total position the municipal general plan as an upper-level plan, and 12 of 14 municipalities position the national land use plan likewise\[^7\].

Regional afforestation plans, which are not required to be taken into account by law, and prefecture-level regional sub-plans such as the new traffic system basic plan, are not positioned as upper-level plans in many city master plans. In particular, the master plans of municipalities in the Koza region do not position any upper-level plans at all (Fig.2.).

Out of the 14 responses, six pointed out the difficulty of maintaining consistency between city master plans and upper-level/related plans. The reasoning behind this is that each upper-level/related plan involves a different set of municipalities, and has different goals such as year of completion (Fig.3.).

---

\[^4\] The national average for municipalities with a city master plan is approximately 49%

\[^5\] The policy for improvement, development, and conservation

\[^6\] The Okinawa Promotion and Development Plan

\[^7\] The national land use plan
centers, sprawl caused by development, deforestation, and military land issues for several municipalities. Many municipalities dealt with the traffic issues in their city master plans but did not deal with other regional issues, since it was out of character for a city master plan, a purely municipal plan by nature, to do so (Fig.4.).

4) Awareness of Plans by Neighboring Municipalities

In terms of regional planning issues, nine of 14 municipalities did not place significance on city master plans by neighboring municipalities. Some considered it would be out of character for a city master plan to consider issues beyond its own municipality, and others simply could not do anything because their neighboring municipalities did not have a city master plan in place (Fig.5).

Five municipalities (approx. 33%) said that they were aware of the need for coordination with neighboring municipalities when preparing their city master plans. Two of those five municipalities held meetings for working-level coordination, and three of five municipalities designed their city master plans consistent with upper-level plans (Fig.6.).

Six municipalities said that they have worked together with neighboring municipalities in dealing with regional planning issues. They are as follows: road work (4), military land project (1), river development project (1) and harbor development project (1) (Fig.7.).

3-2. Regional Planning Issues in Existing City Master Plans

1) Issues Gathered from the City Master Plans

a. Method of Analysis

First, a total of 13 existing city master plans, as of Dec. 2003, from the Naha region and the Koza region were collected and perused, then sentences and clauses that touch on regional issues were picked out and copied onto cards. A point was given to every card. Cards were then organized by category and compiled.

Examples of regional issues that were written down on the cards included: “traffic congestion due to the expansion of commutable area,” “sprawl due to the expansion of cities,” and “commercial setbacks due to the creation of large commercial establishments in neighboring municipalities.”

b. Analysis Result

Despite the differences in results among municipalities, the following regional planning issues consistently pointed to: waning city centers due to the expansion of commercial areas, wide-range traffic congestion encompassing multiple municipalities and sprawl due to wide-spread development. These problems are in turn causing widespread deforestation, scenic pollution, and river pollution.

The following is the compiled data by region, and the regional planning issues expressed here match the results described in 3-1 (Table 4.).

| Category                          | Naha | Koza | Total |
|----------------------------------|------|------|-------|
| Waning city centers              | 15(13)| 6(19)| 21(14)|
| Regional traffic congestion      | 45(38)| 14(44)| 59(39)|
| Sprawl and other land use        | 13(11)| 5(16)| 18(12)|
| Regional environmental issues    | 11(9)| 2(6)| 13(8)|
| Regional scenic issues           | 17(14)| 0(0)| 17(11)|
| Regional deforestation           | 15(13)| 1(3)| 16(10)|
| Regional military land issues    | 4(3)| 4(13)| 8(5)|
| Total                            | 120(100)| 32(100)| 152(100)|

Unit: Point (%)
2) Issues Gathered from the Master Plan Drawings

a. Method of Analysis

Map Drawings from each city master plan were taken, their size readjusted, and then put together to make a new map, to analyze regional consistency for the following three categories: land use, traffic system, and environmental conservation (Fig.8.).

4. Regional Planning Issues in Regional Master Plans

4-1. Awareness of Officials

Municipal government officials involved in regional master plan work were surveyed using the aforementioned questionnaire to determine their opinion concerning issues such as the participation of municipalities in the designing phase of regional master plans and the role regional master plans would play in the future.

1) Participation of Municipalities in the Designing Phase

According to the regional master plan design schedule currently in place, Okinawa Prefecture, the party responsible for the design of regional master plans, sends out notices and feedback forms for any given plan to all involved municipalities. However, the number of municipalities that answered, “municipalities should participate from the plan’s designing phase” and “the prefecture should coordinate with municipalities more” exceeded the number of “no change is needed,” indicating the need for change in this matter (Fig.9.).

2) The Role of the Regional Master Plan

Roughly half of the municipalities considered the role of the regional master plan to be that of dealing with regional issues that cannot be dealt with at the municipal level, while that of the other half was to cover every issue from regional to municipal, and to be an all-encompassing plan (Fig.10.).

3) The Leading Party to Implement Plans

In considering the two-level structure of city and regional master plans, most municipalities said that plans should be implemented jointly by the prefecture and the municipalities involved, which is indicative to a certain level of their willingness to work cooperatively with each other (Fig.11.). A new entity that includes Okinawa Prefecture, the municipalities involved, and the public sector gained the second-most points, evidence that municipalities are expecting an increased role for the public sector, including non-profit organizations.

---

Table 5. Inconsistency among City Master Plans

| Inconsistency Among City Master Plans |
|--------------------------------------|
| Municipalities have different versions of road work plans in their respective city master plans, and some roads do not connect. |
| Municipalities have different versions of environmental conservation policies, and consistency is often difficult to achieve. |
| Municipalities have different versions of facility development policies etc., and it is difficult to assign urban functions. |

---

Fig.8. Regional Consistency

Fig.9. Participation of Municipalities in the Designing Phase

Fig.10. The Role of the Regional Master Plan

Fig.11. The Leading Party to Implement Plans
4-2. Regional Planning Issues in the Content of Regional Master Plans

The regional master plans for the Naha region and the Koza region are comprised of five chapters. They are:

I. Objective and Timeline
II. Goals and Issues
III. Area Division Policy
IV. City Planning Policy
V. Vision for the Future

IV: City Planning Policy outlines several regional planning issues that municipalities are dealing with, such as policies on land use, urban facilities, urban area development, and urban environment in general.

In these master plans, the following measures are taken to resolve regional planning issues discussed in chapter 3 (Table 6.). While issues such as traffic congestion, scenic pollution, deforestation and post-reversion military land use were covered, other issues like waning city centers and river pollution were not.

4-3. How the Issues were Handled in the Designing Phase

1) Direct coordination with municipalities

According to the schedule, the prefecture had four opportunities to coordinate with the municipalities involved. However, these opportunities were not sufficient for municipalities to voice their opinions and coordinate the details because the municipalities themselves were not granted an active role in the process.

2) Exploratory Committee

The committee consists of five municipal representatives (one representative each from the northern region, the central region, the southern region, Miyako Island, and Ishigaki Island, respectively), seven academic experts (specializing in city planning, transportation, environment, economics etc.), and a couple of city planning managers from the prefecture, for a total of 14 members. The committee discusses and examines all regional master plans in Okinawa’s seven city planning areas, but does not discuss specific working-level issues. Discussion on regional planning issues at the municipal level did not take place.

5. Conclusion

Municipal master plan officials are aware that municipalities in the Naha and Koza regions are dealing with common regional planning issues including traffic congestion, waning city centers, sprawl, deforestation, and post-reversion military land use. However, because these issues are beyond the scope of city master plans, which focus on a single administrative area, not enough is being done to resolve the issues.

It was also found that municipalities are working together on several projects such as working-level meetings in the designing phase of a city master plan, road works, and post-reversion military land use projects. For the most part, however, municipalities simply try to be consistent with upper-level plans.

Regional master plans cover issues that cannot be addressed by any single municipality such as regional traffic congestion and deforestation, and for the most part have been successful. However, regional master plans do not remedy all the regional planning issues municipalities are dealing with, and not enough discussions about these issues are taking place in the plans’ designing phase.

Measures concerning the regional planning issues that municipalities have to deal with are summarized as follows:

1. Cooperation and Coordination among Neighboring Municipalities

Cooperation and coordination among neighboring

| Regional Planning Issues | Measures | Naha Region MP | Koza Region MP |
|-------------------------|----------|----------------|----------------|
| Waning city centers     | None     | None           | None           |
| Regional traffic congestion | Issues of road connection and parking lots are discussed | Issues of road connection and parking lots are discussed |
| Sprawl and other land use | None     | None           | None           |
| Regional environmental issues | None     | None           | None           |
| Regional scenic issues  | Create a more coordinated look by getting municipalities to work together | None |
| Regional deforestation  | Work as one to conserve green space | Work as one to conserve green space |
| Regional military land issues | Work as one to develop post-reversion military land that extends to multiple municipalities. | Work as one to develop post-reversion military land that extends to multiple municipalities. |

Table 6. Measures Outlined in the Regional Master Plans
municipalities is important. For regional planning issues such as environmental conservation and post-reversion military land use, it was found that some municipalities are holding working-level meetings in the design phase of their city master plans and coordinating through miscellaneous projects.

2. Uniform Measures with Regional Master Plans
Regional master plans should contain uniform measures concerning issues such as scenic pollution and sprawl. Measures concerning scenic pollution in particular should be further discussed, to include the possibility of having it legislated.

3. Consistency with Upper-level Plans
Use regional master plans to organize upper-level plans, regional road plans, and regional environmental conservation plans etc., all of which were difficult to address in city master plans, thereby allowing city master plans to easily maintain consistency with upper-level plans, albeit indirectly.

Taking all of this into account, it is necessary to redefine the roles of the city master plan and the regional master plans and carefully select which issues to address in respective plans. It is also necessary to coordinate the roles of the municipality and the prefecture. Furthermore, a comparative study between Okinawa and other prefectures will be undertaken in the future to identify new issues and problems.

Notes
1. Before the revision of the City Planning Law in 2000, Policy for Improvement, Development, and Conservation, which was positioned as an upper-level plan to the city master plan, was only designed for areas that employed the area division system.
2. In this research, we distinguished the regional master plan from its precursor, Policy for Improvement, Development and Conservation.
3. According to Census 2000 and City Planning Basic Research 2000.
4. According to the website of the Ministry of Land Infrastructure and Transport, 1,003 municipalities have already made a city master plan.
5. Of the seven city planning areas in Okinawa, it was only designed for the Naha region.
6. The Okinawa Promotion and Development Plan is a comprehensive plan drawn up by the Government of Japan, based on the Law on Special Measures for the Promotion and Development of Okinawa. This research considers this plan as equivalent to the Municipality Comprehensive Plan based on the Local Autonomy Law.
7. The other two municipalities are a city in the Naha region and a village in the Koza region. The National Land Use Plan is already in place at both municipalities.
8. Others include “urban area development,” “environment,” and “disaster prevention,” but these were not used because they were not covered in all the master plans. Instead, “land use,” “traffic system,” and “environmental conservation” were selected since they were covered in all the master plans.
9. According to references 5) and 6), a regional planning organization called METRO in Oregon, U.S.A., assumes an intermediary role between the state government and the municipalities, and provides a fair forum for discussion to coordinate various matters of planning.

References
1) Oshika, M. and Aiba, S. (2000) Summaries of Technical Papers of the Annual Meeting of the Architectural Institute of Japan, F1, pp.357-358, AIJ
2) Iida, N. (1998) A Study on Function of Urban Master Plans, in the Structure of Various Master Plans in Matsudo-shi. Journal of the City Planning Institute of Japan, pp.481-482, CPIJ
3) Muraki, M. (2001) Coalition of Local Jurisdictions for Regional Planning -Case of Portland Metro and COGs in Oregon. Journal of Asian Architecture and Building Engineering, pp.43-48, CPIJ
4) Muraki, M. Inter-Relation of Strategic and Development Plans -An Analysis of Housing Policies under Unitary Development Plans in Inner London-. Journal of the City Planning Institute of Japan, pp.397-402, CPIJ
5) Murakami, N. and Onishi, T. Journal of the City Planning Institute of Japan, pp.481-482, CPIJ
6) Murakami, N. and Onishi, T. Coordination of Land Use Planning Powers by a Regional Government -A Case Study of Metro in Oregon, U.S. - Journal of the City Planning Institute of Japan, pp.103-108, CPIJ
7) Urayama, M. A Study on Coordination between Regional Planning and Local Planning of Oregon’s Land Use Planning System -A Case of Portland Metropolitan Area- Journal of the City Planning Institute of Japan, pp.181-186, CPIJ
8) Okinawa Prefectural Government.-This is Okinawa(2004)
   http://www.pref.okinawa.jp/english/thisis/images/this_is_okinawa.pdf
9) Naha city-City Planning Master Plan (1999)
10) Urasoe city-City Planning Master Plan (1998)
11) Kitanakagusuku Village-City Planning Master Plan (2000)
12) Nakagusuku village-City Planning Master Plan (1997)
13) Nishihara town-City Planning Master Plan (1999)
14) Haebaru town-City Planning Master Plan (1998)
15) Kochari town-City Planning Master Plan (1998)
16) Yonabaru town-City Planning Master Plan (1998)
17) Sashiki town-City Planning Master Plan (2000)
18) Okinawa city-City Planning Master Plan (1995)
19) Yonashiro town-City Planning Master Plan (2002)
20) Yomitan village-City Planning Master Plan (1997)
21) Chatan town-City Planning Master Plan (1999)