

CHAPTER 3 TRANSPORT PLANS

3.1 Transport Plans

3.1.1 National Transport Development Plan and Strategies

The national policy and strategy of the transport sector is to support the vision, mission and development objectives stipulated in the national RPJP (National Long-term Development Plan) 2005-2025 and spatial plans for national (NTRWN) and Sulawesi Island (NTRW Pulau Sulawesi). The vision and mission of RPJP are to attain independent, advanced, equal and prosperous nation. The period of RPJP is for 20 years and it is divided into 5-years national middle term development plans (RPJM), namely RPJM-I of 2005-2009, RPJM-II of 2010-2014, RPJM-III of 2015-2019 and RPJM-IV of 2020-2024.

The visions of RPJM-I are:

- To establish the society, people and nation of safe, united, harmonized and peace.
- To establish the society, people and nation secured with highly protected, equality, basic human rights.
- To establish prosperous economy of providing sufficient job opportunity, good life for sustainable development

The mission of RPJM-I is establishment of safe/peace, equal/democratic and prosperous nation. The infrastructure development is an integral part of RPJM-I. The efficient and effective transport infrastructure will support the economic growth, regional development and unification of nation.

The development of harmonized National Transport System (Sistranas) is needed to achieve the integrated transport network, national spatial plan, and sustainable regional development by providing the service for communities, people and production-marketing both for urban and rural areas. The vision of Sistranas is to realize effective and efficient transportation system. The Sistranas is a combination of inter-modal and multimodal transports as well as both at national and regional levels. The road facility is the main transport mode and has important role in supporting national and regional development, decentralization and national unification and providing accesses for the communities, people and business to various facilities and services.

3.1.2 Five Year Plan (Renstra 2005-2009) of the Ministry of Public Works

The Ministry of Public Works (MPW) established the five-year plan including vision, mission, overall goals and sector goals under RPJM-I. The function and duty of public road development policy, strategy and targets for 2005 to 2009 are stipulated in the plan. The following issues are identified for improvement to achieve the planned target:

- Lack of capacity and fund for road maintenance.

- Regional disparity and poor access from production centers to market areas, including many isolated areas.
- Many road infrastructures were damaged by natural disaster leading to diversion of budget allocation from road maintenance to disaster and road damage treatment.
- Realizing balanced and integrated development areas (including isolated areas, boundary areas, small islands) to strength unity of regions in Indonesia.
- Limited government financial capacity on road infrastructure development compared with demand for road development. Therefore, it is necessary to enhance budget allocation effectiveness and efficiency, and to find innovative financial resources from community and/or private sector.
- Difficulty in investment promotion aspects due to delay of toll road development.
- Necessity to support national and international transport development schemes (ASEAN/Asian Highways).
- Based on community demand, it is necessary to make effort to ensure fast reformation process, transparency and accountability development, community and business world with better role.

The vision of MPW in the five year plan is to provide the infrastructure, which is reliable, beneficial, for realization of safe, peace, equal, democratic and more prosperous nation.

The mission of MPW is:

- To manage the space of Nusantara to be comfortable and qualified.
- To fulfill the regional public works infrastructure to protect the centers of production and settlement from flood damages.
- To fulfill the necessity of regional public works infrastructure in road sector, in order to support the regional development and the flow of goods and services.
- To develop public works infrastructure in settlement to realize the housing and settlement qualified and productive.
- To conduct the development of building that is safe and secure.
- To improve the development of competitive industrial construction.
- To increase the regional government and society capacity in public works infrastructure development.
- To develop the applied and competitive public works technology and to increase the quality of public works infrastructure.
- To implement the efficient organization, work mechanism, and integration through good governance principle and to develop professional human resource.

The goals of MPW in Renstra 2005-2009 are:

- To provide access to all regions of Indonesia by providing maximal service for communities' social and economy life and to build the peaceful and safe nation.
- To develop the transparency of infrastructure implementation by involving the community, the increase the regional government participation to realize equality and democracy.
- To operate the efficient, effective, and productive infrastructure to realize more prosperous nation.

Following are the implementation targets for Sulawesi inland stipulated in the five-year plan:

- Road construction for vulnerable disaster and social conflict areas for 50 km in Central Sulawesi.
- Road treatment in isolated areas and small islands for 100 km in North Sulawesi, 100 km in Gorontalo, 200 km in Central Sulawesi, 200 km South Sulawesi 150 km in Southeast Sulawesi.
- Road maintenance for 6,125 km in North Sulawesi, 3,026 km in Gorontalo, 8,507 km in Central Sulawesi, 10,208 km South Sulawesi, 6,125 km in Southeast Sulawesi.
- Bridge maintenance for 35,141 m in North Sulawesi, 17,570 m in Gorontalo, 48,805 m in Central Sulawesi, 58,567 m South Sulawesi, and 35,141 m in Southeast Sulawesi.
- Increasing structure and road capacity by 249 km in North Sulawesi, 124 km in Gorontalo, 345 km in Central Sulawesi, 414 km in South Sulawesi, and 249 km in Southeast Sulawesi.
- Bridge replacement and construction for 1,155 m in North Sulawesi, 577 m in Gorontalo, 1,604 m in Central Sulawesi, 1,925 m South Sulawesi, and 1,155 m in Southeast Sulawesi.
- Toll road construction by private companies for Makassar Section IV (11 km).

3.1.3 Sulawesi Island Transport Development Plans

There are several existing studies regarding the transport system of Sulawesi. The following studies have been reviewed:

(1) Sulawesi Island Integrated Transportation Development Study (Studi Pengembangan Keterpaduan Transportasi di Pulau Sulawesi)

This is a recently completed multi-mode study commissioned by the Research and Development Agency of the Ministry of Communications. The final report was submitted in November 2006. Its target year is 2022.

This study emphasized the role of ferry and air transportation. Several new ferry/shipping routes (Bitung-Mindanao, Kendari-Ambon, etc.) and new airports (Mamasa, Palopo, Pasangkay, etc.) were proposed, although road planning focused on improvement and strengthening of existing roads. The development programs proposed five-year targets for the periods of 2007-2012, 2013-2017 and 2018-2022.

(2) Primary Road Network Plan Study for Sulawesi Island (Studi Rencana Umum Jaringan Transportasi Jalan Primer Pulau Sulawesi)

This study was completed in 2003 by a consultant group of Bandung Institute of Technology with finance from the Ministry of Communications. Its target year is 2023. The study aimed to strengthen coordination in planning and implementation of road projects between agencies concerned which were facing difficulties after the decentralization.

The study constructed a road database, estimated future traffic demand and evaluated the needs of road improvement by road sub-link. Judging from the final report, the emphasis seems to be on the development of an applicable transport model that can be used by various parties. Based on the developed methodology and a set of evaluation criteria, the study listed all road links with the magnitude of necessary improvement in terms of number of lanes.

(3) Sulawesi Island Road Network System Development Study (Studi Pengembangan Sistem Jaringan Jalan di Pulau Sulawesi)

This study, commissioned by the Ministry of Settlement and Regional Infrastructure, was completed in 2001. Its target year was set in 2020. This study covered a wide range of related aspects such as regional development policies and existing spatial plans in addition to road network planning. A limited road inventory survey was also carried out.

The methodology of this study was similar to that of the MOC study mentioned above. The study proposed a detailed road improvement plan for each 5-year period between 2001 and 2020.

(4) Mamminasata Spatial Plan 2003-2012

The Mamminasata Spatial Plan (2002) was established in reference to the road network plan proposed in the Ujung Pandang Highway Development Study, JICA, 1989 and the planned road network covered in and around the Mamminasata Metropolitan Area to strengthen regional linkage for ensuring economic development (**Figure 3.1.1**).

The planned network is similar to that of the JICA Study in 1989. However, the alignment of the “Outer Ring Road” as well as the location of the junction with Jl. Perintis Kemerdekaan was modified and the junction was shifted to the northern side of the Hasanuddin airport.

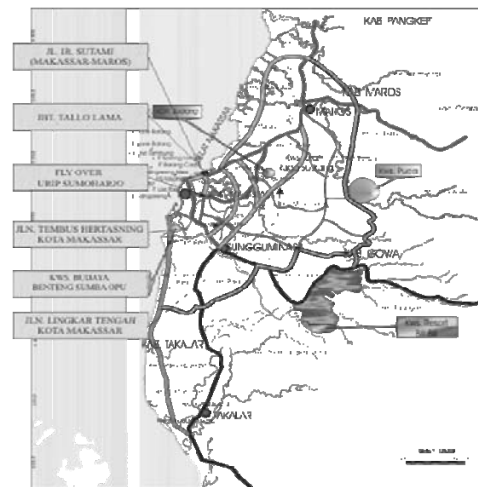


Figure 3.1.1 Road Development Plan of Mamminasata Spatial Plan 2003-2012

(5) Ujung Pandang Highway Development Study, JICA (1989)

“Studi Pengembangan Jalan Raya Ujung Pandang”, JICA, 1989 proposed the trunk road network in Makassar City up to 2009. It also identified major traffic corridors connecting Makassar and Maros, Gowa, and Takalar as shown in **Figure 3.1.2**. The trunk network plan is composed of (i) five arterial radial roads and (ii) three ring roads for Makassar City and its surrounding regencies. The framework itself had been well coordinated with city planning, geographic condition and urbanization trends and Makassar city has developed its trunk road system in accordance with the JICA Study recommendations.

(6) Makassar City Development Plan 2005-2025

This is the on-going master plan of Makassar City. The alignments of the Middle Ring Road and Outer Ring Road as proposed in the JICA Study 1989 are retained. Almost all road networks are the same as those envisaged in the Mamminasata Spatial Plan 2003-2012, except the Losari Beach road which would be widened to 20-40m as part of the West Ring Road (**Figure 3.1.3**).

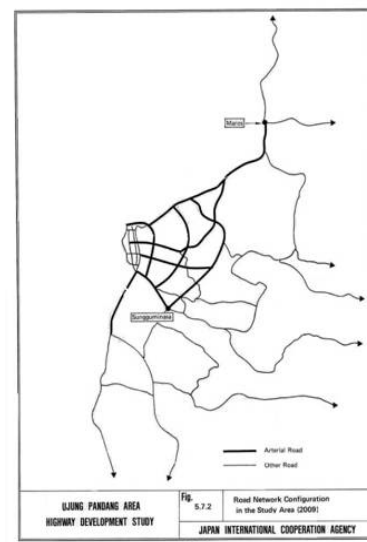


Figure 3.1.2 Road Development Plan by JICA

Remarkable features of the plan are land use plan for the coastal area and the Tallo River estuary, where a large area of land is planned for reclamation as a new residential, commercial and industrial area by 2025. Extension of the “Inner Ring Road (Jl.AP Pettarani)” to the southern part of the Jeneberang River remains unchanged despite of difficulties in land acquisition.

(7) **Integrated Spatial Plan for Mamminasata Metropolitan Area, JICA, 2006**

The “Integrated Spatial Plan for Mamminasata Metropolitan Area”, JICA, 2006 proposed the trunk road network in the Mamminasata Metropolitan Area including Makassar City, Maros, Gowa and Takalar up to 2020. The Mamminasata Study recommended 16 road links to be developed or improved. The following F/S roads were proposed as priority roads among these road links.

- i) Mamminasa Bypass
- ii) Trans-Sulawesi Road Mamminasata Section (Maros-Takalar through Perintis Kemerdekaan Road and Middle Ring Road)
- iii) Hertasning Road
- iv) Abdullah Daeng Sirua Road

The original Trans-Sulawesi road was from Makassar to Manado and it was opened in early 1990s. The current concept of Trans-Sulawesi road consists of three corridors (west, central and east corridors) in Sulawesi Island Spatial Plan (RTR Sulawesi Island) established by BKPRS (Sulawesi Regional Development Cooperation Board) and MPW. The Trans-Sulawesi Road Mamminasata Section is part of the west corridor as indicated in **Figure 3.14**.

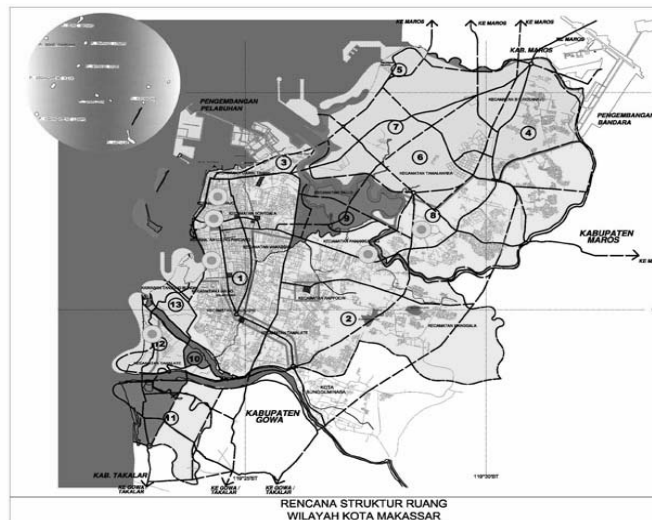


Figure 3.1.3 Road Development Concept of Makassar City Development Plan 2005-2025

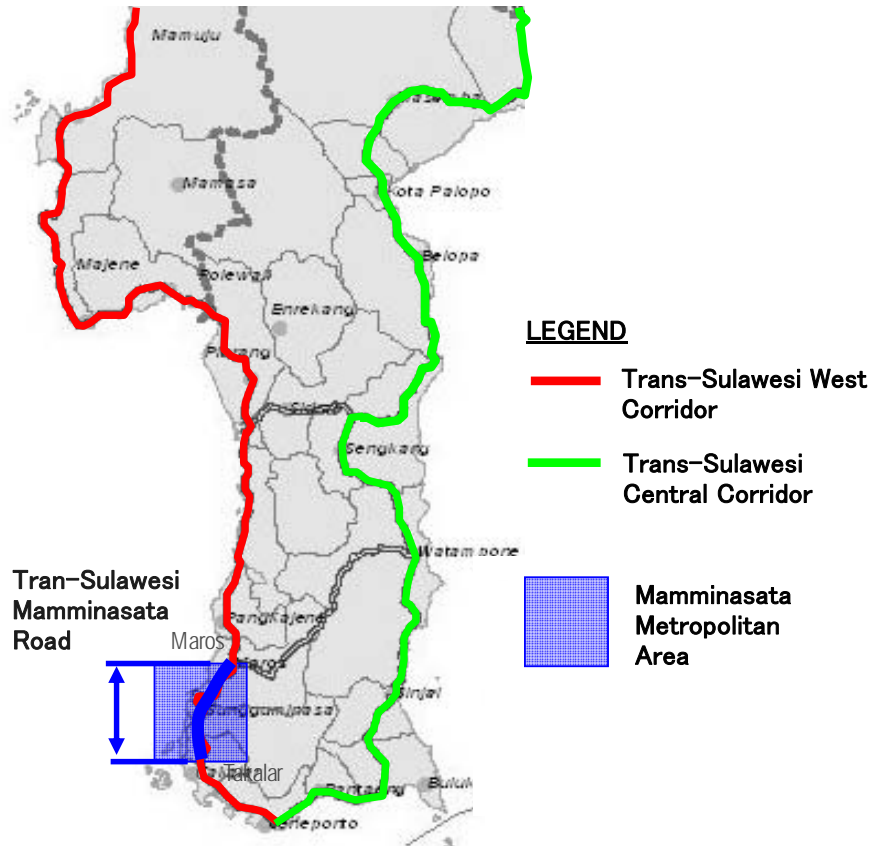


Figure 3.1.4 Trans-Sulawesi West Corridor and Mamminasata Road Section

3.2 Administrative Framework

The road administration organizations concerned with the FS roads are both central and local governments. Since the FS roads include national roads, city roads and Kabupaten (Regency) roads, discussions are needed between/among the Directorate General of Highways, Ministry of Public Works, South Sulawesi provincial government, Makassar City, Kabupaten Gowa, Kabupaten Maros and Kabupaten Takalar in consideration of decentralization and regional autonomy.

3.2.1 Central Government

(1) The Directorate General of Highway (DGH), Ministry of Public Works

The Directorate General of Highways (DGH), Ministry of Public Works is the responsible organization for national roads in entire Indonesia. The Directorate General of Highways consists of Directorate of Programming, Directorate of Technical Guidance, Directorate of Freeways & Urban Roads, Directorate of Roads and Bridges for West Region, and Directorate of Roads and Bridges for East Region. The organization chart of DGH is shown in **Figure 3.2.1**.

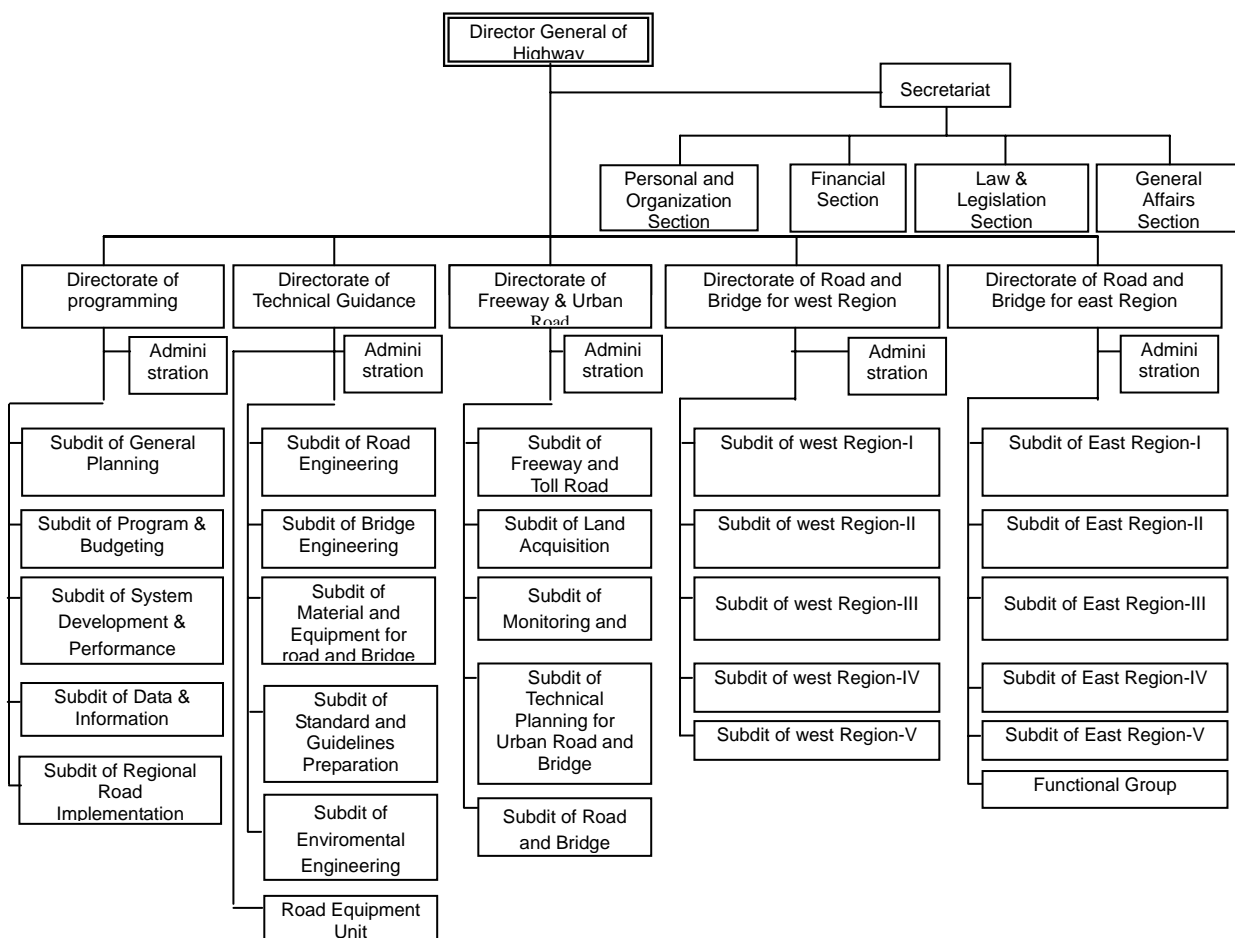


Figure 3.2.1 Organization Chart of Directorate General of Highways

(2) Organization of Balai Besar, the Regional Representative of DGH

As a regional representative of DGH for implementation of National Highway development in the technical matters, 7 Balai Besar (**Table 3.2.1**) and 3 Balai (covering Bali, Maluku, Papua and other areas) have been established throughout the country on the basis of the Decree of Ministry of Public Works No.14/PRT/M 2006 and No.15/PRT/M/2006, and started functioning from January 2007.

The main duty and the function of Balai Besar are as follows:

MAIN DUTY: 1) Conduct planning and technical guidance; 2) Construction, operational and maintenance monitoring, quality assurance, procurement of equipment and material, as well as organizational management.

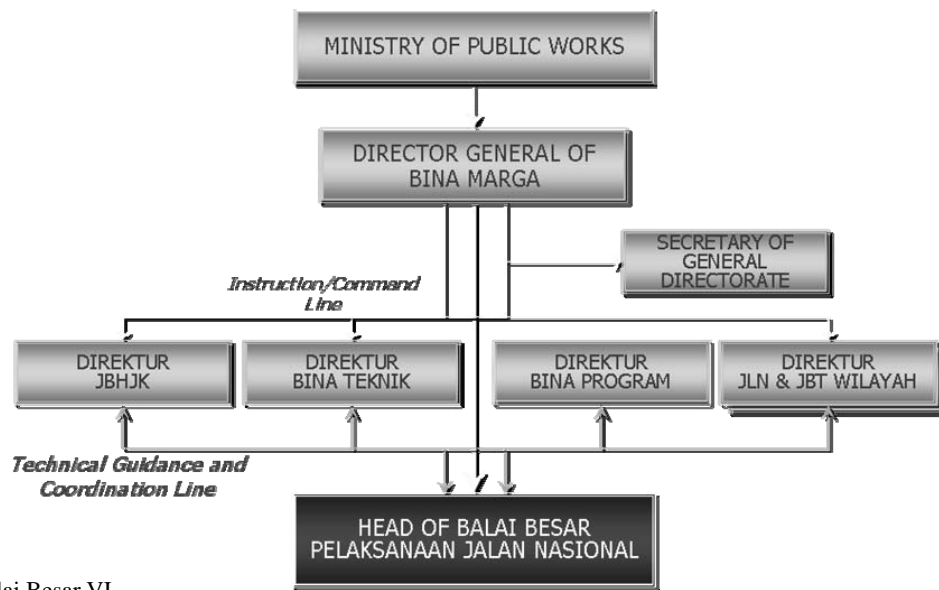
FUNCTION : 1) Data and Information preparation as the material for program compilation of national road management as well as the implementation of planning and technical guidance of road and bridge construction; 2) Construct, operational and maintenance monitoring of road and bridge; 3) Implementation of quality management system in road and bridge construction; 4) Provision, utilization, storing and maintenance of road and bridge materials and equipments, as well as construction quality assurance; 5) Staffing management, work organization, financial, state treasury, as well as coordination with related institutions.

Table 3.2.1 Jurisdiction of Balai Besar

No	Name of Technical Implementation Unit	Location	Work Area
I	Type A		
1	Balai Besar Pelaksana Jalan Nasional I	Medan (North Sumatra)	Aceh, North Sumatra, Riau and Riau Islands (Kepulauan Riau)
2	Balai Besar Pelaksana Jalan Nasional III	Palembang (South Sumatra)	Jambi, South Sumatra and Bangka Belitung
3	Balai Besar Pelaksana Jalan Nasional IV	Jakarta	Banten, Jakarta and West Java
4	Balai Besar Pelaksana Jalan Nasional V	Surabaya	Central Java, East Java and Jogjakarta
II	Type B		
5	Balai Besar Pelaksana Jalan Nasional II	Padang	West Sumatra, Bengkulu and Lampung
6	Balai Besar Pelaksana Jalan Nasional VI	Makassar	South Sulawesi, West Sulawesi, Central, North, South East and Gorontalo
7	Balai Besar Pelaksana Jalan Nasional VII	Banjarmasin	West Kalimantan, South Kalimantan and East Kalimantan

Source: Bina Marga

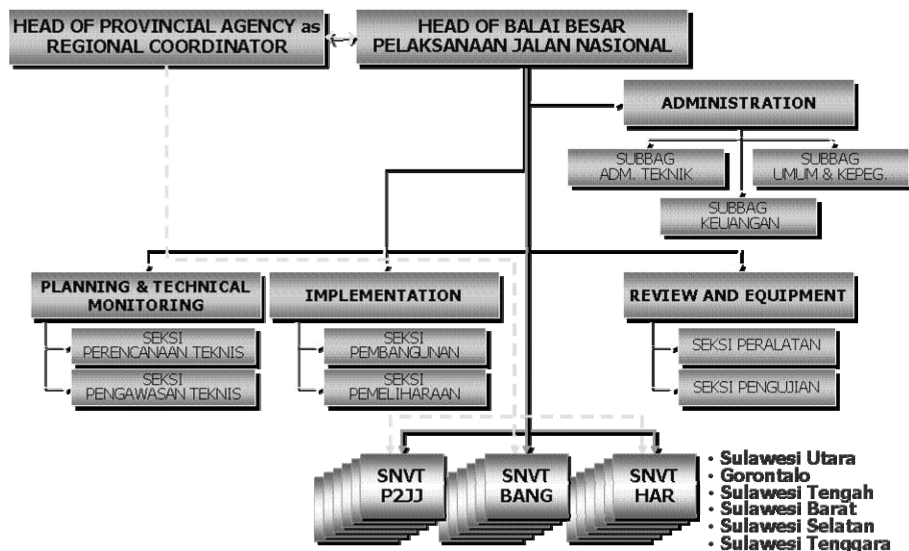
As illustrated in **Figure 3.2.2** Balai Besar is independent from the sub-directorates of Bina Marga, but should coordinate with all the sub-ditectorates in the technical matters.



Source: Balai Besar VI

Figure 3.2.2 Status of Balai Besar

Under the chief of Balai Besar, there are task forces (Batuan Kerja) for design and supervision (P2JJ), road betterment and maintenance. The periodic maintenance of national roads is directly undertaken by this maintenance task force that owns necessary equipment and staff and procures required materials for road maintenance, particularly for the trans-nation roads. Each province has this kind of set-up for the development and maintenance of the national road network.



Source: Balai Besar VI

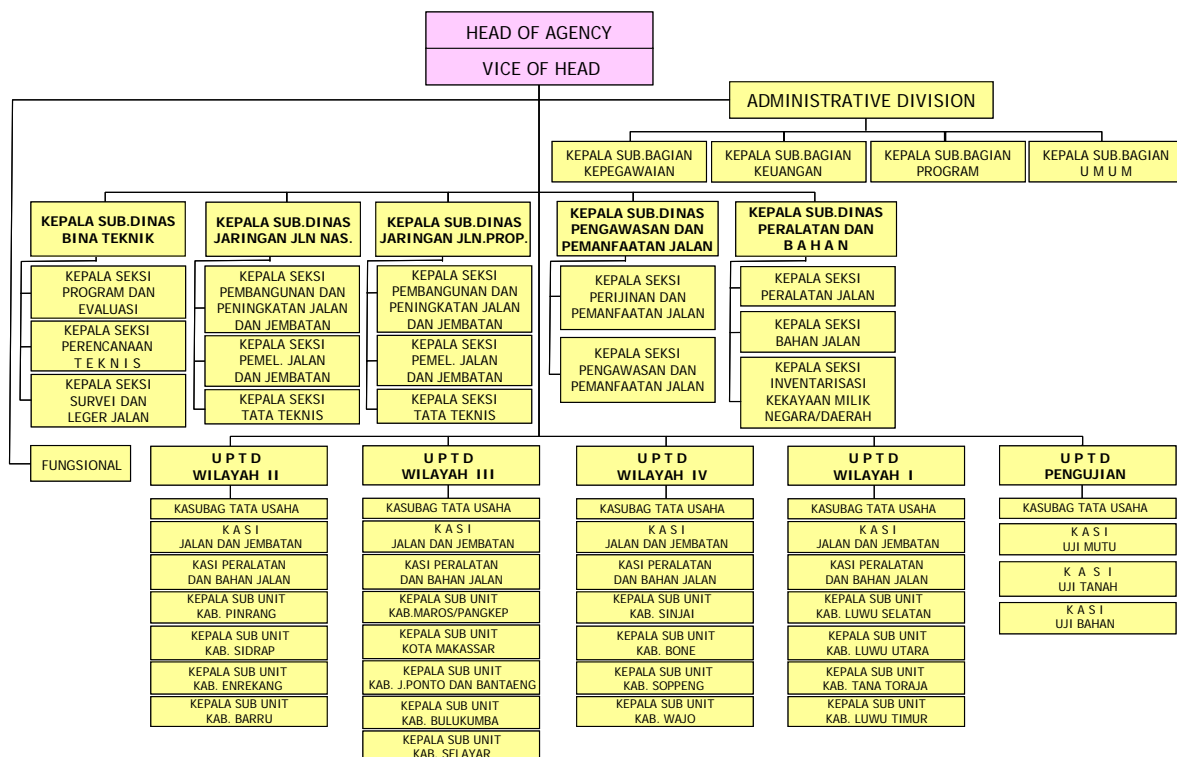
Figure 3.2.3 Organization of Balai Besar

3.2.2 Provincial Government

Dinas Praswil (Dinas Prasarana Wilayah of South Sulawesi Provincial Government) is responsible for provincial roads in the South Sulawesi Province. Responsibilities of Dinas Praswil for the road sector include planning, design, construction and maintenance of provincial roads as well as maintenance of part of national roads. The organization chart of Dinas Praswil (Dinas Prasarana Wilayah) is shown in **Figure 3.2.4**.

There are corresponding maintenance divisions (Kepala Seksi Pemeliharaan) in the Dinas Praswil for national road and provincial road. There are three to four officers in each division for the administrative works for the maintenance. Actual implementation of the maintenance work is conducted at each UPTD (Unit Pelaksana Teknis Dinas: Unit for Technical Implementation of Agency) established at Kabupaten/Kota level. The UPTDs conduct the routine maintenance by procuring freelance labors and the periodic maintenance by outsourcing sub-contractors.

The UPTDs may sometimes function as a project implementation unit (“Officers for Technical Activities Implementation”) for the development of Provincial Road and as a “Working Unit” for the development of National Road.



Source: Dinas Praswil of South Sulawesi Province

Figure 3.2.4 Organization Chart of Dinas Prasarana Wilayah South Sulawesi Province

3.2.3 Kabupaten/Kota Government

Dinas PU of each Kabupaten/Kota Government is responsible for planning, design, construction and maintenance of Kabupaten/Kota roads. The organization chart of Dinas PU for the City of Makassar is shown in **Figure 3.2.5**.



Figure 3.2.5 Organization Chart of Dinas PU of the City of Makassar

Source: Dinas PU of the City of Makassar

Road maintenance for each Kabupaten/Kota is conducted as follows:

Table 3.2.2 Maintenance Force of Kota/Kabupaten

	No. of Maintenance Force (person)	Routine Maintenance	Periodic Maintenance
1. Makassar	15	Sub Contract	Sub Contract
2. Maros	30	Direct with contract labor	Sub Contract
3. Gowa	40	Fully Direct	Fully Direct
4. Takalar	9	Fully Direct	Sub Contract

Source: JICA Study Team

3.2.4 System of Highway Administration

(1) General Perspective

Based on the decentralization policy, the majority of local offices of the central government at provincial governments and Kabupaten/Kota governments were once abolished and many of their staff and functions were integrated into each local government. However the local autonomy laws were revised by the Law No. 32/2004 and the Law No. 33/2004, coinciding with the selection of President Yudhoyono, which included a set of new policies such as the public selection of

governors of local governments and centralization of once decentralized functions of the central government. The new laws also strengthened the control of the central government on its budget allocation and on the borrowing of local governments.

With regard to the highway administration, the once abolished Department of Highway (PU) has been restored from the Department of Settlement and Regional Infrastructure and the regional offices of PU (Balai Besar) have been re-established¹ in January 2007 to coordinate the activities of PU at the regional level and conduct the procurement and implementation of the development of the national road network. **Table 3.2.3** illustrates the responsibilities for activities in the highway administration at different government levels.

Table 3.2.3 Responsibilities of Highway Administrations in South Sulawesi

Road Classification/Task	Responsibility	Funding	Implementation
I. National Road			
1. Planning	Bina Marga	APBN	Bina Marga
2. Construction/ Betterment	Bina Marga	APBN	Bina Marga Balai Besar
3. Land Acquisition/ Resettlement	Bina Marga Local Governments	APBN/(and APBDI/APBDII)	Bina Marga Local Governments
4. Periodic Maintenance	Bina Marga	APBN	Balai Besar
5. Routine Maintenance	Bina Marga	APBN	PRASWIL/Balai Besar
II. Provincial Road			
1. Planning	PRASWIL	APBD1	PRASWIL
2. Construction/ Betterment	PRASWIL	APBD1(PAD/DAU/DAK/ External Grant/Loan)	PRASWIL
3. Land Acquisition/ Resettlement	PRASWIL	APBDI, APBDII	PRASWIL. Local Governments
4. Periodic Maintenance	PRASWIL	APBD1(PAD/DAU/DAK/ External Grant/Loan)	PRASWIL
5. Routine Maintenance	PRASWIL	APBD1	PRASWIL
III. Kabupaten/Kota Road			
1. Planning	Dinas PU	APBDII	Dinas PU
2. Construction/ Betterment	Dinas PU	APBDII , APBN (PAD/DAU/DAK/External Grant/Loan)	Dinas PU
3. Land Acquisition/ Resettlement	Dinas PU	APBDII	SKPD (Dinas PU)
4. Periodic Maintenance	Dinas PU	APBDII (PAD/DAU/DAK/External Grant/Loan)	Dinas PU
5. Routine Maintenance	Dinas PU	APBDII	Dinas PU

Source: JICA Study Team

The New Road Law No. 38 of 2004 stipulates clearly the responsibilities of each government body for the corresponding road categories (Chapter IV Public Road, Articles 13, 14, 15 and 16 of the Law No. 38, stipulated in the same manner as the old Road Law No. 13/1980), which include regulation, cultivation, development and supervision activities of each government body, namely the central government for national roads, provincial government for provincial roads, kabupaten

¹ Based on the Decree of Ministry of Public Works No.14/PRT/M 2006 and No.15/PRT/M/2006

government for kabupaten roads and city government for city roads.

(2) National Roads

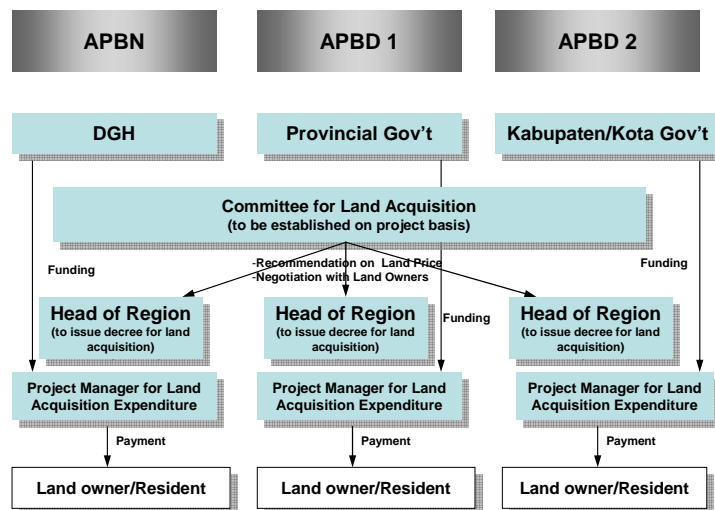
Planning for national roads is conducted by the Directorate of Planning of Bina Marga based on the IIRMS program. The Directorate of Planning is responsible for pre-FS, FS and Implementation Program of specific projects. The budget of Bina Marga for each year is prepared and requested in accordance with the IIRMS and specific project planning. Once the budget for a specific road development project is allocated, detailed design and tender document preparation are done by the Directorate of Engineering. Procurement and implementation of the project is carried out by the Directorate of Eastern Region (in case of South Sulawesi) through the regional Balai Besar with the Project Management Unit (PMU) and Project Implementation Unit (PIU) established for the project.

Construction and maintenance of national roads are conducted by Balai Besar as a regional representative of DGH as described before.

(3) Land Acquisition

Land acquisition/resettlement for the national road development is conducted in the institutional set-up as illustrated in **Figure 3.2.6** where an ad hoc committee for land acquisition consisting of eleven agencies concerned is established for specific road projects. The committee makes recommendations concerning the land price to the head of the region in which the land is to be acquired. Taking its recommendations into consideration, the head of the region issues a decree for land acquisition for the project. Necessary negotiation is conducted by the committee and compensation is paid to the land owner/resident concerned by the manager of expenditures for each project when different budget categories such as APBN, APBD I (Province) and APBD II (Kabupaten/Kota) are involved.

No specific responsibility is stipulated in the new Road Law as to who should conduct land acquisition for a particular road category. It only states that the governments are in principle responsible for land acquisition. As such, a recent land acquisition case for a flyover project on a national road in Makassar City illustrates the sharing of the responsibility among the Makassar City, South Sulawesi Province and the Central Government that expended Rp 3.5 billion, Rp 4.5 billion and Rp 7.0 billion respectively. The way to share the funding among the agencies was determined by negotiation.



Source: JICA Study Team

Figure 3.2.6 Institutional Set-up of Land Acquisition for National Roads

Periodic Maintenance of national roads is conducted through the Balai Besar system. Routine maintenance of national roads is mostly conducted by Dinas PU of each concerned province using the APBN budget. In case of Sulawesi, a part of the national roads in the South Sulawesi Province (Pare-Pare – Sidrap – Enrekang – Toraja – Palopo to the borders of South Sulawesi and Central Sulawesi) is conducted by the Balai Besar who has its own maintenance task force.

3.3 Financial Situation of Road Sector

3.3.1 Mechanism of Revenue and Budget Allocation in Indonesia

The laws of regional autonomy established in 1999 (Law No. 22 concerning the Regional Administration and Law No. 25 concerning Financial Equilibrium of Central and Regional Governments) have changed the mechanism of revenue and budget allocation in Indonesia in terms of balance between the local and central governments.

The following illustrates the basic policy of the laws. Based on this policy, decentralization of both authorities and funding from the central government towards Provincial, Kabupaten and Kota governments² has taken place.

- i) Reduction of Central Government Functions and Delegation of its authorities to Kabupaten and Kota Governments
- ii) Equalization of Province, Kabupaten and Kota
- iii) Effective Monitoring Function by Strengthening Authority of Local Councils

Table 3.3.1 illustrates the sources of revenue that the local governments have obtained after the

² The offices of the Central Government such as foreign relations, defense, national security, judicial courts, monetary and fiscal matter, and religion were maintained at local government level.

decentralization. There are two major revenue sources for a local government, namely its own revenue from local tax and levies and the revenue allocation from the central government. The majority of tax revenues from automobiles and gasoline are collected at the provincial level and allocated to Kabupaten/Kota within the province concerned.

Table 3.3.1 Sources of Revenue for Local Government

Classification/Sources	Item
1. Own Revenue	
(1) Local Tax	Revised by the Law No. 34/2000
1) Province	Automobile Tax, Automobile Transfer Tax, Gasoline Tax, Water Surface Usage Tax, Underground water Tax, Water Transport Tax (less than 7 gt)
2) Kota/kabupaten	Hotel & Restaurant Tax, Entertainment Tax, Advertisement Tax, Street Light Tax. (Kota/Kabupaten have right to tax on items other than above)
(2) Local Levy	Parking Fee, Bus Terminal Levies, etc
(3) Revenue from Local SOEs	
(4) Other Own Fund	Donation from other local governments, etc.
2. Balancing Fund (To Province/Kabupaten/Kota from the Central Government)	
(1) Revenue Sharing	Land & Building Tax, Land & Building Acquisition Tax, Personal Income Tax, Sharing of the revenue from natural resources
(2) General Allocation Fund (DAU)	Minimum 25% of Revenue of CG. 90% to Kota/Kabupaten, 10% to Province based on determined formula. Its usage can be determined by each local government.
(3) Special Allocation Fund (DAK)	Allocated according to special needs. Local government must allocate a minimum of 10% of allocation from own APBD. DAK includes donor support projects. Allocated on the basis of request of local government.
3. Borrowing of Local Government	
(1) Domestic Borrowing	Central government, Banks, Financial Institutions other than Banks, Issuance of Local Government Bond, Other (Borrowing from other local government)
(2) Foreign Borrowing	Bilateral and Multi-lateral. Local government cannot borrow directly. It must borrow on lending scheme (Law No.25/1999, MOF Regulation No.53/PMK.010/2006), There is also on granting scheme (MOF Regulation No.52/PMK.010/2006)
4. Other Revenue based on the Law : Urgent fund for disaster, charity fund	

Source: JICA Study Team

3.3.2 Financial Situation of Central Government

After the enforcement of the Local Autonomy Policy, the ratio of capital expenditure of the Central Government against GDP has been decreasing due to the fiscal reform program of IMF and the decentralization of fiscal resources towards local governments. Before that the ratio remained at the level of about 6% to 9%, but it immediately went down to 3% after the Policy has been enforced for the years 2002, 2003 and 2004, then lowered further recently to 1.9% for the years 2005 and 2006 as illustrated **Table 3.3.2**.

The revenue of the Central Government has been constantly increasing for the last five years and about 34% to 35% of the revenue has been transferred to the local governments as transfer fund.

Table 3.3.2 Expenditures of Central Government

	Item	Expenditure (% of GDP)				
Before Local Autonomy Policy	Recurrent Expenditure	Actual 11-15%				
	Capital Expenditure	Actual 6-9%				
After Local Autonomy Policy	Central Government	2002 Budget	2003 Budget	2004 Budget	2005 Budget	2006 Budget
	- Recurrent (CG)	11.2%	9.2%	8.1%	7.7%	10.9%
	- Capital (CG)	3.0%	3.2%	3.1%	1.9%	1.9%
	- CG Total	14.2%	12.4%	11.2%	9.6%	12.8%
	Local Government	5.6%	5.7%	5.2%	4.7%	6.6%
	Total	19.8%	18.1%	16.5%	14.3%	19.4%

Source: BPS, Ministry of Finance

The budget allocated to the road sector accounted for 1.2% to 1.3% of the Government Expenditure recently and its tendency has been fairly stable. About 4.0 to 7.0 trillion Rupiahs have been allocated to the road sector for the last five years.

Table 3.3.3 Share of Road Sector Budget

Share of Road Sector Budget	2002	2003	2004	2005	2006
1. % of GDP	0.21%	0.38%	0.20%	0.18%	0.22%
2. % of Central Government Revenue	1.33%	2.32%	1.28%	1.30%	1.17%
3. % of Central Government Expenditure	1.23%	2.10%	1.19%	1.24%	1.13%
4. % of Central Government Dev't Expenditure	NA	11.80%	6.30%	6.30%	11.62%

Source: BPS, Bina Marga

Table 3.3.4 illustrates the breakdown of the road budget of the Central Government for the last five years. The maintenance budget has been from Rp 0.9 trillion to Rp 1.5 trillion and has not been increasing. The budget for betterment and new construction has been fluctuating from Rp 2.2 trillion to Rp 5.9 trillion depending on the years. The budget for the year 2007 was set as Rp 9.8 trillion with its maintenance budget increasing about 30% from the year 2006. However, as the funding size required to raise 90% of the national roads above the “poor” status has been estimated to be Rp 15 to 20 trillion every year, the total budget allocated for the year 2007 is still far below the requirement.

Table 3.3.4 Road Sector Budget of Central Government

(Rp trillion)

Road Sector Budget of Central Government	2002		2003		2004		2005		2006		2007	
1.Maintenance	1.3	33%	0.9	12%	1.0	22%	1.1	22%	1.5	21%	2.6	27%
2.Betterment and New Construction	2.3	58%	5.9	76%	2.2	49%	3.4	69%	5.0	68%	7.0	71%
3.Design and Monitoring	0.2	5%	0.1	1%	0.2	4%	0.2	4%	0.3	4%	0.0	0%
4.PUSAT (Central DGH: Software)	0.2	5%	1.0	13%	1.1	24%	0.3	6%	0.5	7%	0.0	0%
5.Others		0%		0%		0%	0.04	1%	0.02	0%	0.24	2%
Total	4.0	100%	7.8	100%	4.5	100%	4.9	100%	7.3	100%	9.8	100%

Source: Bina Marga

Table 3.3.5 Revenue and Expenditure of Central Government (Budget)

Budget Item	2002			2003			2004			2005			2006		
	Rp. Trillion	GDP Ratio	Ratio	Rp. Trillion	GDP Ratio	Ratio	Rp. Trillion	GDP Ratio	Ratio	Rp. Trillion	GDP Ratio	Ratio	Rp. Trillion	GDP Ratio	Ratio
A. Revenue	298.6	16.0%	100.0%	336.2	16.4%	100.0%	349.9	15.4%	100.0%	380.4	13.7%	100.0%	625.2	18.7%	100.0%
1. Tax Revenue	210.1	11.3%	70.4%	254.1	12.4%	75.6%	272.2	12.0%	77.8%	297.8	10.7%	78.3%	416.3	12.5%	66.6%
(Income Tax)		0.0%	0.0%	120.9	5.9%	36.0%	134	5.9%	38.3%	142.2	5.1%	37.4%	210.7	6.3%	33.7%
(VAT)		0.0%	0.0%	80.8	3.9%	24.0%	86.3	3.8%	24.7%	98.8	3.5%	26.0%	128.3	3.8%	20.5%
2. Non-tax Revenue	88.5	4.7%	29.6%	82	4.0%	24.4%	77.1	3.4%	22.0%	81.7	2.9%	21.5%	205.3	6.2%	32.8%
B. Expenditure	322.2	17.3%	107.9%	370.6	18.1%	110.2%	374.4	16.5%	107.0%	397.8	14.3%	104.6%	647.7	19.4%	103.6%
1. Central Gov. Expenditure	224.0	12.0%	75.0%	253.7	12.4%	75.5%	255.3	11.2%	73.0%	266.2	9.6%	70.0%	427.6	12.8%	68.4%
a. Recurrent expenditure		0.0%	0.0%	188.6	9.2%	56.1%	184.4	8.1%	52.7%	212.6	7.6%	55.9%	364.7	10.9%	58.3%
(Personnel expenditure)		0.0%	0.0%	50.4	2.5%	15.0%	56.7	2.5%	16.2%	-	-	-	-	-	-
b. Development expenditure		0.0%	0.0%	66.1	3.2%	19.7%	70.9	3.1%	20.3%	53.6	1.9%	14.1%	62.9	1.9%	10.1%
(Road Sector)	4.0	0.2%	1.3%	7.8	0.4%	2.3%	4.5	0.2%	1.3%	4.9	0.2%	1.3%	7.3	0.2%	1.2%
maintenance	1.3	0.1%	0.4%	0.9	0.0%	0.3%	1.0	0.0%	0.3%	1.1	0.0%	0.3%	1.5	0.0%	0.2%
Betterment and New Construction	2.3	0.1%	0.8%	5.9	0.3%	1.8%	2.2	0.1%	0.6%	3.4	0.1%	0.9%	5.0	0.1%	0.8%
Design and Monitoring	0.2	0.0%	0.1%	0.1	0.0%	0.0%	0.2	0.0%	0.0%	0.2	0.0%	0.0%	0.3	0.0%	0.0%
PUSAT (Central DGH: software)	0.2	0.0%	0.1%	1.0	0.0%	0.3%	1.1	0.1%	0.3%	0.3	0.0%	0.1%	0.5	0.0%	0.1%
Others		0.0%	0.0%		0.0%	0.0%		0.0%	0.0%	0.04	0.0%	0.0%	0.02	0.0%	0.0%
2. Transfer Fund	98.2	5.3%	32.9%	116.9	5.7%	34.8%	119	5.2%	34.0%	131.5	4.7%	34.6%	220.1	6.6%	35.2%
a. Revenue Sharing Fund		0.0%	0.0%	27.9	1.4%	8.3%	26.9	1.2%	7.7%	31.2	1.1%	8.2%	59.3	1.8%	9.5%
b. General Allocation Fund	69.2	3.7%	23.2%	77	3.8%	22.9%	82.1	3.6%	23.5%	88.8	3.2%	23.3%	145.7	4.4%	23.3%
c. Special Allocation Fund		0.0%	0.0%	2.6	0.1%	0.8%	3.1	0.1%	0.9%	4.3	0.2%	1.1%	11.6	0.3%	1.9%
d. Specific Autonomy Balance Fund	3.5	0.2%	1.2%	9.4	0.5%	2.8%	6.8	0.3%	1.9%	7.2	0.3%	1.9%	3.5	0.1%	0.6%
C. Fiscal Balance (A-B)	-23.6	-1.3%	-7.9%	-34.4	-1.7%	-10.2%	-24.4	-1.1%	-7.0%	-17.4	-0.6%	-4.6%	-22.4	-0.7%	-3.6%
D. Deficit Financing	23.6			34.4			24.4			17.4			22.4		
1. Domestic Finance	16.9			31.5			40.5			37.6			50.9		
2. Foreign Finance	6.6			2.9			-16.1			-20.2			-28.5		

Note: 1) Since 2005 is using unified budget, that included of the budgeted current expenditures and budgeted development expenditure

Source: MOF Budget Statistics

3.3.3 Financial Situation of Regional Governments

The following common tendency has been observed in the financial situation of the regional governments in the Mamminasata Metropolitan Area for the last five years:

- a) Revenues and expenditures have been growing at an annual average growth rate of 17% to 20% reflecting the growth of the regional economy and growing contribution of the transfer fund from the Central Government.
- b) Funding has been allocated more for recurrent expenditure than for development expenditure.
- c) The road sector budget has been suppressed for the years 2002, 2003 and 2004, then started increasing for the years 2005 and 2006.
- d) The road sector budget is about 4% to 6% of the total expenditure.
- e) The majority of the road budget is allocated towards road improvement and rehabilitation which are given urgent priority and scarce funding is available for road maintenance.
- f) The road sector budget allocated for the last five years has been far below the requirement of the regional governments.

Details of the financial situation of the regional governments are illustrated in the following section.

(1) South Sulawesi Province

The total revenue of the South Sulawesi Provincial Government is composed of its own local revenue and the transfer fund from the Central Government, at a ratio of about 50% from each source as illustrated in **Table 3.3.6**. The revenue itself has been increasing steadily at an annual average rate of 17% for the last five years. The expenditure of the government has also been increasing at a similar rate. However the share of the development expenditure has been slightly decreasing while the recurrent expenditure has been growing at a rate of 20% par annum.

The road sector budget of the Province has been about 4% to 6% of the total expenditure (8% to 17% of the development expenditure) and has stagnated for the years 2002, 2003 and 2004 with the budget being Rp 30 to 40 billion, and then has started increasing for the years 2005, 2006 and 2007 with about Rp 74 billion, Rp 75 billion and Rp 98 billion respectively. The majority of the budget has been allocated towards the construction and rehabilitation of roads and bridges since priority is given to the improvement of the existing 1,200 km of provincial roads in the South Sulawesi Province where almost a half of which has been damaged very badly. For the above reason, the maintenance budget has actually been decreasing for the last five years with its peak in 2004 and 2005 of Rp 19 billion down to Rp 14 billion in 2007.

According to the statistics provided by Dinas Praswil to the Study Team, as of 2007, 926 km out of the 1,200 km long provincial road network in the South Sulawesi Province has attained a service life of more than 10 years, which is the time when funding requirement for road improvement starts increasing rapidly. Out of the 926 km, only 136km (15%) has been rehabilitated. The unit cost required for such rehabilitation is estimated at about Rp 1 billion per km. On this basis the Province would need Rp 790 billion for the future rehabilitation of its provincial road network.

The share of South Sulawesi Province in the total budget that Bina Marga has allocated for all the Provinces have been 2 % to 4 % for the period of 2001 to 2007 with the share in the 2007 budget being 3.8%.

Table 3.3.6 Composition of Road Sector Budget of South Sulawesi Province

Budget Item	2002		2003		2004		2005		2006		2007	
	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio
Road Sector Budget	42.6	100.0%	37.8	100.0%	33.9	100.0%	73.7	100.0%	75.2	100.0%	98.4	100.0%
(Construction)	42.6	100.0%	20.0	53.1%	14.4	42.4%	53.8	73.0%	54.4	72.2%	71.2	72.3%
(Rehabilitation)		0.0%		0.0%	0.4	1.1%	0.8	1.1%	5.7	7.6%	13.5	13.7%
(Routine Maintenance)	NA		17.7	46.9%	19.1	56.5%	19.1	25.9%	15.2	20.1%	13.7	14.0%

Source: South Sulawesi Province

Table 3.3.7 Revenue and Expenditure of South Sulawesi Provincial Government (Budget)

Budget Item	2002		2003		2004		2005		2006		2007	
	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio
A. Revenue												
1. Local Own Revenue (PAD)	734.5	100.0%	787.1	100.0%	885.2	100.0%	1,095.7	100.0%	1,372.3	100.0%	1,607.6	100.0%
Carry on from Previous Year	404.2	55.0%	383.8	48.8%	458.4	51.8%	648.6	59.2%	730.2	53.2%	805.3	50.1%
Local Taxes	112.4	15.3%	0.0	0.0%		0.0%		0.0%	619.3	45.1%		0.0%
Local User Charges	224.7	30.6%	291.1	37.0%	361.1	40.8%	538.3	49.1%	51.1	3.7%	686.4	42.7%
Local Gov. Owned Company Profit	31.2	4.2%	48.1	6.1%	48.8	5.5%	49.5	4.5%	37.9	2.8%	55.0	3.4%
Others	15.8	2.2%	26.9	3.4%	32.7	3.7%	44.7	4.1%	21.9	1.6%	42.0	2.6%
2. Intergovernmental Transfer	20.1	2.7%	17.7	2.2%	15.8	1.8%	16.1	1.5%		0.0%	21.9	1.4%
Tax Revenue Sharing	330.3	45.0%	403.3	51.2%	426.8	48.2%	447.1	40.8%	642.0	46.8%	802.3	49.9%
Non Tax Revenue Sharing	59.0	8.0%	86.2	10.9%	98.5	11.1%	101.5	9.3%	114.4	8.3%	158.5	9.9%
General Allocation Fund (DAU)	13.8	1.9%		0.0%		0.0%		0.0%		0.0%		0.0%
Special Allocation Fund (DAK)	257.5	35.1%	299.1	38.0%	313.6	35.4%	332.7	30.4%	509.5	37.1%	599.5	37.3%
Others		0.0%	3.4	0.4%		0.0%		0.0%		0.0%		0.0%
B. Expenditure												
1. Recurrent Expenditure	734.5	100.0%	863.9	100.0%	1,005.1	100.0%	1,265.8	100.0%	1,482.9	100.0%	1,717.8	100.0%
2. Development Expenditure	375.7	51.2%	370.6	42.9%	712.1	70.8%	836.2	66.1%	989.4	66.7%	967.0	56.3%
Road Sector Budget	358.7	48.8%	493.3	57.1%	293.1	29.2%	429.5	33.9%	493.5	33.3%	750.8	43.7%
(Road Construction)	42.6	5.8%	37.8	4.4%	33.9	3.4%	73.7	5.8%	75.2	5.1%	98.4	5.7%
(Road Rehabilitation)	42.6	5.8%	20.0	2.3%	14.4	1.4%	53.8	4.2%	54.4	3.7%	71.2	4.1%
(Road Routine Maintenance)	NA	0.0%	17.7	2.0%	19.1	1.9%	19.1	1.5%	5.7	0.4%	13.5	0.8%
C. Fiscal Balance (A-B)												
1. Loan, etc		0.0%	-76.8	-9.8%	-120.0	-13.6%	-170.0	-15.5%	-110.6	-8.1%	-110.2	-6.9%
2. Repayment, etc			76.8		120.0		170.0		110.6		110.2	
			98.9		124.7		228.2		183.8		120.9	
			22.0		4.8		58.2		73.2		10.7	

Source: South Sulawesi Province

(2) Kabupaten/Kota Government

The Makassar City has been maintaining its revenue size of about 60% of that of the South Sulawesi Province. The revenue of the City for the year 2006 was Rp 821.9 billion. Its revenue has been growing at about the same rate as that of the Province, namely at about 18% for the last five years. About 13% to 18% of the City's revenue is financed by its own revenue sources and the rest is being financed by the transfer fund from the Central Government. While the revenue was increasing, the road budget of the City has been kept at Rp 20 to 30 billion level for the last five years. It has been estimated that about Rp 100 to 130 billion is required for every year to rehabilitate and maintain the City's 1,500 km long road network (Kota roads: 1,450km and National roads: 50km). The budget of Rp 27 billion which has been allocated to the road sector for the year 2007 only satisfies about 20% of the City's fund requirement for the road sector.

Kabupaten Gowa, Maros and Takalar depend on the transfer fund from the Central Government, especially the General Allocation Fund (DAU), for more than 90% of their revenue. At present they are unable to finance their road sector by their own revenue and are totally dependent on the funding from the Central Government.

While Kabupaten Gowa has to maintain its 2,104 km Kabupaten road network, the allocation of its maintenance budget has been from Rp 1 to Rp 2 billion for the last five years. Based on the average cost of routine maintenance of Rp 10 million/km, the Kabupaten Gowa needs about Rp 22 billion every year. The maintenance budget allocated for 2007 has been Rp 1.8 billion which covers only 8% of the Kabupaten's fund requirement for the maintenance of Kabupaten road.

The level of budget allocation for the road sector for the City of Makassar, Kabupaten Gowa, Maros and Takalar for the last five years has been very similar with Rp 20 billion to Rp 40 billion of capital expenditure mostly allocated for the road improvement and with Rp 1 billion to Rp 4 billion for the road maintenance.

Since there has been no major road construction work up until the Middle Ring Road Project (a part of the Trans-Sulawesi Mamminasata Road), not much of the land acquisition budget has been allocated in the road sector for the Kabupaten/Kota. The land acquisition costs for the Middle Ring Road Project are shown as the budget for the City of Makassar in the following table in the years of 2003, 2004 and 2005. The land acquisition cost of the Jl. Pettarani – Jl. Urip Flyover Project is also shown in the year of 2006. The costs have been about Rp 30 billion to Rp 40 billion each year which implies the limit of budget amount which the City of Makassar is capable of allocating for land acquisition of road project for each year.

The land acquisition cost for the Jl. Pettarani – Jl. Urip Flyover Project has been shared among the Central Government, the South Sulawesi Government and the City of Makassar as follows:

Phase 1 (2006): Total Amount:	Rp 15.0 billion
Central Government	Rp 7.0 billion

South Sulawesi Government	Rp 4.5 billion
City of Makassar	Rp 3.5 billion
Phase 2 (2007): Total Amount:	Rp 13.0 billion
Central Government	Rp 7.0 billion
South Sulawesi Government	Rp 3.5 billion
City of Makassar	Rp 2.5 billion

Table 3.3.8 Revenue, Development Expenditure and Road Sector Budget for South Sulawesi, Makassar, Gowa, Maros and Takalar

Budget Item	2002		2003		2004		2005		2006	
	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio	Rp. Billion	Ratio
1. South Sulawesi Province										
1) Total Revenue	734.5	100.0%	787.1	100.0%	885.2	100.0%	1,095.7	100.0%	1,372.3	100.0%
2) Total Development Expenditure	358.7	48.8%	493.3	62.7%	293.1	33.1%	429.5	39.2%	493.5	36.0%
3) Road Sector Budget	60.2	8.2%	37.8	4.8%	33.9	3.8%	73.7	6.7%	75.2	5.5%
(Road Construction)	42.6	5.8%	20.0	2.5%	14.4	1.6%	53.8	4.9%	54.4	4.0%
(Road Improvement)		0.0%		0.0%	0.4	0.0%	0.8	0.1%	5.7	0.4%
(Road Routine Maintenance)	17.7	2.4%	17.7	2.3%	19.1	2.2%	19.1	1.7%	15.2	1.1%
2. Makassar City										
1) Total Revenue	426.4	100.0%	520.5	100.0%	543.9	100.0%	595.7	100.0%	821.9	100.0%
2) Total Development Expenditure	356.3	83.6%	437.2	84.0%	447.4	82.3%	458.6	77.0%	582.2	70.8%
3) Road Sector Budget	16.7	3.9%	30.1	5.8%	16.7	3.1%	18.8	3.2%	35.7	4.3%
(Road Construction)		0.0%	1.3	0.3%		0.0%		0.0%	2.0	0.2%
(Road Improvement)	10.4	2.4%	18.8	3.6%	12.2	2.2%	15.3	2.6%	26.9	3.3%
(Bridge Construction)	4.1	1.0%	6.4	1.2%	1.1	0.2%		0.0%		0.0%
(Road Routine Maintenance)	2.3	0.5%	3.5	0.7%	3.5	0.6%	3.5	0.6%	4.5	0.5%
(Sidewalk Construction)		0.0%		0.0%		0.0%		0.0%	2.3	0.3%
4) Land Acquisition/Compensation	2.9	0.7%	3.9	0.7%	3.3	0.6%	0.0	0.0%	3.5	0.4%
3. Gowa										
1) Total Revenue	203.5	100.0%	262.2	100.0%	276.2	100.0%	306.2	100.0%	450.0	100.0%
2) Total Development Expenditure	65.0	31.9%	221.8	84.6%	252.6	91.4%	248.8	81.2%	202.1	45%
3) Road Sector Budget	9.2	4.5%	16.7	6.4%	19.5	7.1%	17.4	5.7%	47.1	10%
(Construction/Improvement)	7.9	3.9%	15.0	5.7%	18.6	6.7%	15.7	5.1%	46.1	10%
(Routine Maintenance)	1.4	0.7%	1.7	0.7%	0.9	0.3%	1.7	0.6%	1.0	0%
4. Maros										
1) Total Revenue	156.0	100.0%	220.2	100.0%	215.9	100.0%	232.6	100.0%	372.5	100.0%
2) Total Development Expenditure	31.7	20.3%	63.3	28.8%	55.7	25.8%	65.4	28.1%	136.7	36.7%
3) Road Sector Budget	11.2	7.2%	14.5	6.6%	13.4	6.2%	18.4	7.9%	43.1	11.6%
(Construction/Improvement)	10.0	6.4%	14.4	6.5%	10.7	5.0%	16.9	7.3%	42.9	11.5%
(Routine Maintenance)	1.2	0.8%	0.1	0.0%	0.7	0.3%	0.8	0.3%	0.1	0.0%
5. Takalar										
1) Total Revenue	148.7	100.0%	177.0	100.0%	182.2	100.0%	193.5	100.0%	303.1	100.0%
2) Total Development Expenditure	30.5	20.5%	118.2	66.8%	112.6	61.8%	125.6	64.9%	203.5	67.1%
3) Road Sector Budget	11.4	7.6%	10.3	5.8%	7.2	4.0%	7.5	3.9%	26.9	8.9%
(Construction/Improvement)	11.3	7.6%	7.4	4.2%	1.7	1.0%	6.7	3.5%	25.9	8.6%
(Routine Maintenance)	0.1	0.0%	2.9	1.6%	5.5	3.0%	0.7	0.4%	1.0	0.3%
6. Mamminasata Area Total										
1) Total Revenue	1,669.0	100.0%	1,967.0	100.0%	2,103.4	100.0%	2,423.8	100.0%	3,319.8	100.0%
2) Total Development Expenditure	842.2	50.5%	1,333.9	67.8%	1,161.3	55.2%	1,327.9	54.8%	1,617.9	48.7%
3) Road Sector Budget	108.7	6.5%	109.3	5.6%	90.8	4.3%	135.8	5.6%	228.1	6.9%
(Construction/Improvement)	86.1	5.2%	83.4	4.2%	59.0	2.8%	109.3	4.5%	179.1	5.4%
(Routine Maintenance)	22.6	1.4%	25.9	1.3%	29.7	1.4%	25.8	1.1%	49.0	1.5%

Source: JICA Study Team based on the data from the regional governments

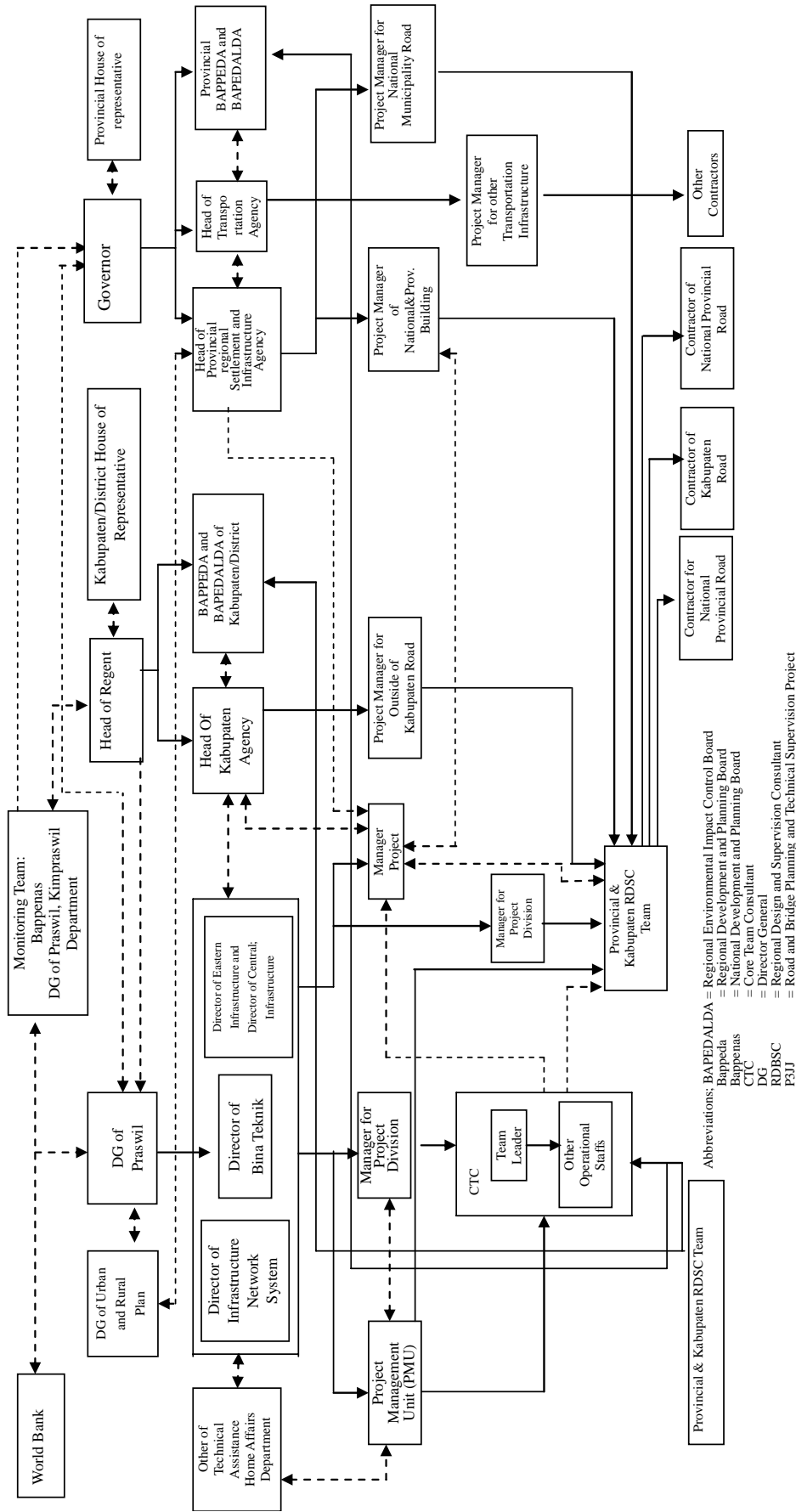
3.3.4 Implementation Set-up for EIRTP II – IBRD/ EINRIP – AusAID

(1) Project Scope of EIRTP II

The Second Eastern Indonesia Region Transport Project (EIRTP II) which began in 2006 and is ongoing, is composed of two complementary transport projects aimed at supporting economic growth, and improving social welfare in 16 provinces and about 190 "kabupatens" and "kotas" (districts and municipalities) of the Eastern Indonesia Region. It will focus primarily on lower level links in the primary road network that are the responsibility of regional governments, and on other regional transport assets. To this end, three project components will 1) improve the national inter-urban road network and provincial roads, through rehabilitation works, and replacement of bridges as needed; rehabilitation works will also cover kabupaten roads, and improvement of road transport facilities, such as small sea ports, ferry terminals and local airports; 2) finance consulting services, and a small amount of equipment, as required to support project implementation, thus enhancing the quality and technical efficiency of the works; it also includes the provision of funds for incremental operating costs and for conducting technical audits; and 3) provide technical assistance and training (with emphasis on support of the ongoing decentralization process), to support the management of environmental and socio-cultural impacts of road development in sensitive areas, to consolidate planning, programming and budgeting processes, to continue supporting the implementation of road funds, in addition to the traffic and road asset monitoring systems, and to develop the Kalimantan road network. (1) Component 1- Improvements to National Roads (US\$233.5 million)

(2) Implementation Set-up for EIRTP II

Figure 3.3.3 illustrates the implementation set-up for the project in the previous institutional framework without Balai Besar when the project started in April 2006. According to Bina Marga, this organization is being revised to include the function of Balai Besar.

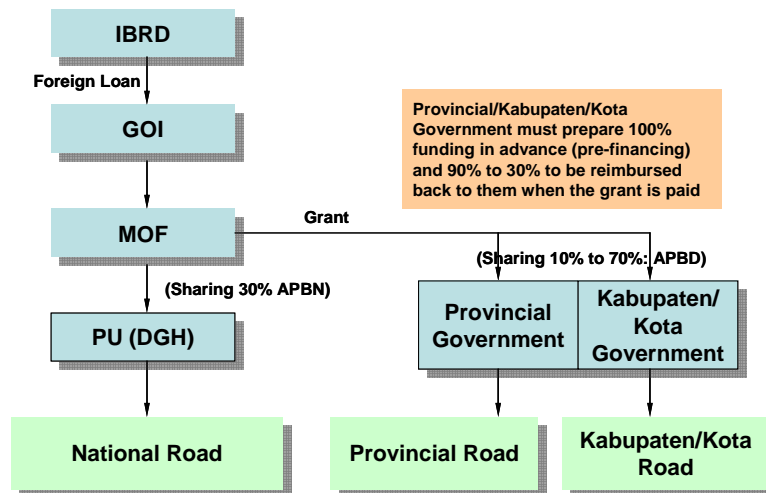


Source: Bina Marga

Figure 3.3.3 Implementation Set-up for EIRTP II

(3) Funding Flow of EIRTP II

The funding mechanism is illustrated in **Figure 3.3.4** where IBRD provides loan to the Government of Indonesia and in turn GOI, namely the Ministry of Finance, provides fund to DGH as the executing agency with the provision that DGH should share 30% of the funding by its own APBN budget, and provides funds to the provincial and Kabupaten/Kota governments in the form of grant with the provision that the regional governments should share 10%, 40%, 70% of the funding by their own APBD budget depending on the fiscal capacity of the regional government. Another provision which is claimed to become a burden on the regional governments is that the governments should prepare 100% of the initial fund requirement (say, for the expenditure of the phase 1 of the project) beforehand (Pre-financing) in order to receive the grant. 90% to 30% of the fund will then be reimbursed to them when the grant is provided by the Central Government.

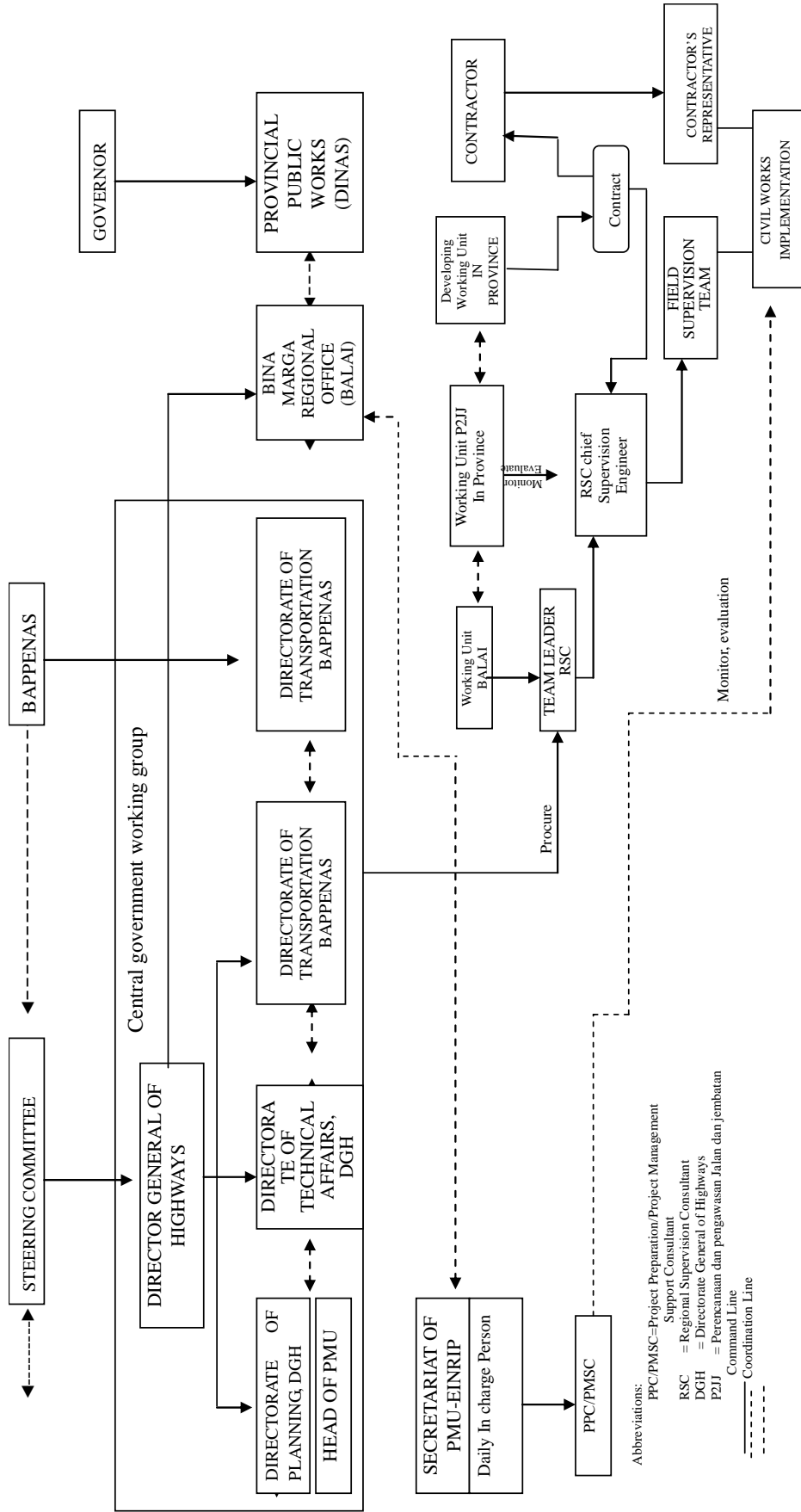


Source: JICA Study Team

Figure 3.3.4 Funding Flow for EIRTP II

(4) Implementation Set-up for EINRIP – AusAID

Figure 3.3.5 illustrates the implementation set-up for the Eastern Indonesia Road Improvement Project (EINRIP) by AusAID which is about to begin this year. The set-up was prepared in December 2006 and has included the function of Balai Besar, in which Bina Marga coordinating with BAPPENAS forms a working group at the Central Government level with Balai Besar to play a coordinating role at the regional level.



Source: Bina Marga

Figure 3.3.5 Implementation Set-up for Eastern Indonesia Road Improvement Project (EINRIP) - AusAID

3.4 On-going and Planned Road Projects related to the F/S Roads

The status of the on-going and planned projects related to the F/S road development planning are as described in the following sub-sections:

(1) Jl.Tol.Ir.Sutami

The existing Jl.Ir.Sutami is a 2-lane national road connecting between the Hasanuddin Airport and the Makassar Port directly. The road is also used as a bypass for the traffic from the north to the port area and the Makassar City center in combination with Jl. Tol Reformasi. These are toll roads operated by the private sector. The traffic is always congested by heavy cargo trucks going to and from the Makassar Port.

Jl.Tol.Ir.Sutami is currently under construction by private sector (a BOT scheme). The development concept is to construct an express toll road (2 ways x 2 lanes) with 2-lane frontier roads on both sides. A new Tallo River bridge (2-lane bridge) is scheduled to be constructed in the 1st stage. The ROW of around 70 m has been already secured through the proposed alignment by the Government and currently earthworks, drainage works and PCC pavement construction are executed. The bridge construction was commenced in 2007. Though the project was planned to be completed in 2007, it will need more time.

The road passes through the existing warehouse and new industrial areas (KIMA). New warehouses, shops, residential and industrial areas which have been planned along this road are under construction.

The original plan of Jl.Tol.Ir.Sutami has two accesses with Jl.Perintis Kemerdekaan (Trans-Sulawesi Mamminasata Road) at the entrance of KIMA and the Middle Ring Road. The JICA Mamminasata Spatial Plan deleted the northern part of the Middle Ring Road directly connected to Jl.Tol.Ir.Sutami. Therefore, the traffic from Takalar, Sungguminasa and the southern part of Makassar to the Makassar Port will still use Jl.Ulip.Sumoharjo and Jl. Tol Reformasi even after completion of the Jl.TolIr.Sutami expressway and it may become a bottleneck in the long term.

(2) Middle Ring Road

The Middle Ring Road was proposed by the 1989 JICA Study. Since that, the right-of-way (ROW) was staked out along the road alignment and its land acquisition is in progress. The development concept is to construct a new urban arterial road (L=12.9km) with 6-8 lanes within the 42 m ROW width. The proposed Middle Ring Road starts at Jl.Perintis Kemerdekaan, passes over the Tallo River at its starting point and runs through dense residential areas along the drainage canal or swampy areas. It crosses over Jl.Abudulla Daeng Sirua, Jl.Hertasning and other urban roads and ends at the intersection of Jl.Sulatan Alauddin at the Makassar/Gowa border.

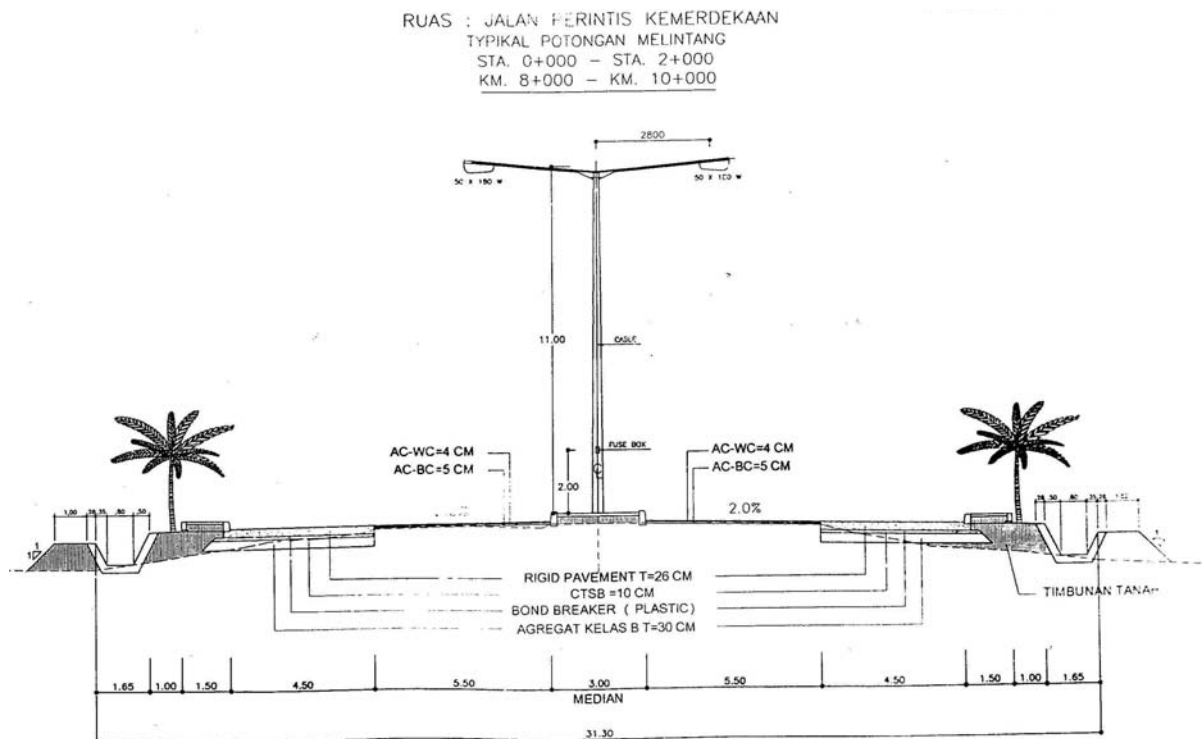
Implementation of the project was planned under a "Build-Operation-Transfer (BOT)" scheme. A

new company was established by a consortium named “Regional Company of Bangun Sarana Makassar” formed by the Makassar Government and PT. Karsa Buana Santika (JKT) in January 2005. However, the BOT scheme did not work and it was suspended.

(3) Jl.Perintis Kemerdekaan and Jl.Ulip Sumohadjo Flyover

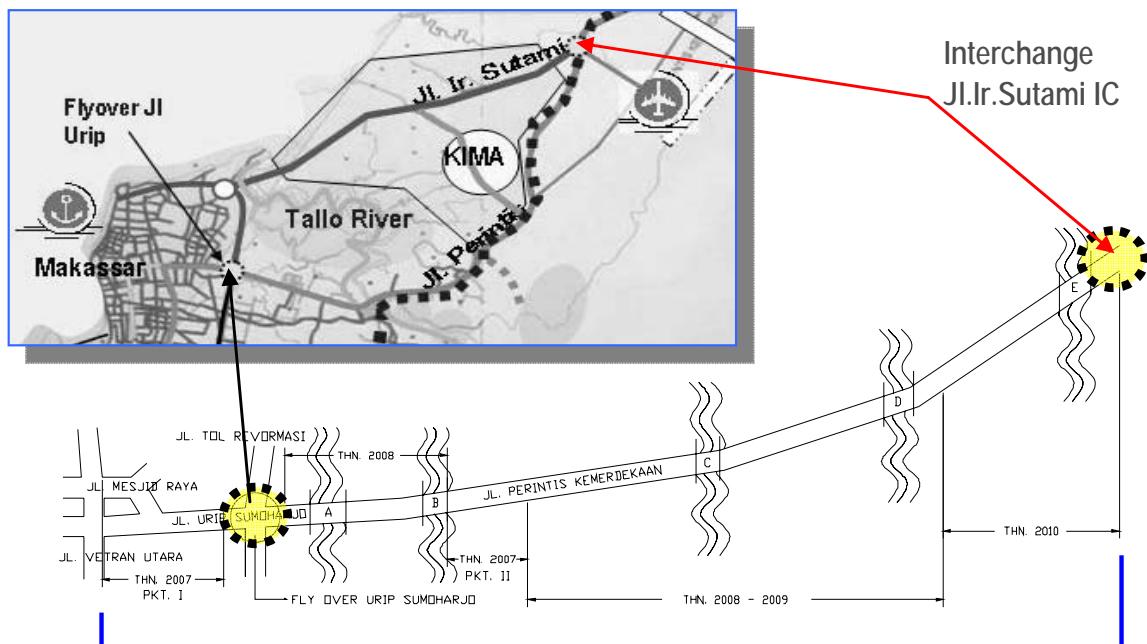
The Jl.Ulip Sumohadjo Flyover project was commenced in February 2007 by APBN (GOI’s own finance). The project will be completed in 2008. Budget was also allocated for the design of the Jl.Ulip Sumohardjo Flyover IC ramps and widening of the Jl. Perintis Kemerdekaan.

Widening construction of Jl.Perintis Kemerdekaan from the 4-lane road to 6-lane road was also commenced in 2007 as APBN for 1.2 km road construction was allocated (refer to Figure 3.4.1). Bina Marga will complete the road widening up to Jl.Tol.Ir.Sutami IC by 2010 in accordance with the program in Figure 3.4.2.



Source: Bina Marga

Figure 3.4.1 Standard Cross section for Jl.Perintis Kemerdekaan Widening



KETERANGAN :

- A = JEMBATAN SUNGAI PAMPANG
- B = JEMBATAN SUNGAI TELLO
- C = JEMBATAN SUNGAI DAYA
- D = JEMBATAN SUNGAI PAI
- E = JEMBATAN SUNGAI MANDAI
- JEMBATAN A DAN B THN. 2008
- JL. PERINTIS KEMERDEKAAN KM. 10 - KM. 17 THN. 2008 S/D 2009
- JL. URIP SUMDHARJO KM. 4 - KM. 8 THN. 2008
- JEMBATAN C, D DAN E THN. 2010
- JALAN PERINTIS KEMERDEKAAN KM. 17 - KM. 21 THN. 2010

**Ongoing Widening and Flyover Project
 by GOI APBN**

Source: Bina Marga

Figure 3.4.2 Flyover and Jl.Perintis Kemerdekaan Widening Programs

(4) Kabupaten Road Rehabilitation

Part of the Kabupaten road between Gowa and Maros (an alternative route for the Mamminasa Bypass) is under rehabilitation by EIRTP-2 (Eastern Indonesia Region Transport Project) of the World Bank. The development concept is to repair potholes and the asphalt concrete overlay for the existing Kabupaten road.

(5) Maros - Pangkep Road Widening

The Maros-Pangkep road (23 km) is part of the Trans-Sulawesi road (national road). The development concept of the project is to widen the existing 2 lane road to 4 lanes. The Trans-Sulawesi Mamminasata Road is connected to this road. One of the two accesses of the Mamminasa Bypass will be connected to this road at approximately 1.5 km north of the Maros Town.

The road widening works were commenced in January 2007 by APBN (GOI's own finance) as

shown in the following photographs.



Figure 3.4.3 Trans-Sulawesi Road Widening Project by APBN (Maros-Pangkep)

(6) Jl.Hertasning

The construction of Jl. Hertasning will be continued under Dinas Prasarana Wilayah (South Sulawesi Provincial Government). The scheduled construction length for 2007 is 2.60 km. The development concept is to widen the existing road from 2 lanes to 4 lanes with a median.

(7) Jl.Abdullah Daeng Sirua

Detailed design for 2.5 km of Jl.Abdullah Daeng Sirua was completed and Makassar City has completed construction of about 800 m. The development concept is to construct a 2-lane new road opposite the PDAM (water supply canal) on PDAM ROW. The construction will be continued part by part where resettlement is completed.

(8) Sungguminasa Access Road

This is a part of the national road between Sungguminasa and Takalar. The section of approximately 4.0 km long from the Jeneberang River Bridge to the south was already widened from 2 lanes to 4 lanes.

(9) Jl.Metro Tanjung Bunga – Takalar (Lintas Barat Makassar)

The Metro Tanjung Bunga road, which was recommended in the 1989 JICA Study, passing through the swamp area of the Jeneberang River was completed in 2004. A new bridge (length 300 m, width 6 m) over the Jeneberang River to connect Tanjung Bunga and Takalar was constructed in 2005 (refer to the following photographs). Detailed design for 20 km of the Tj.Bunga – Takalar road (Lintas Barat Makassar) was carried out in 2006. As this road is one of the radial roads in the 1989 JICA study, its earliest implementation is recommended by upgrading it from Kabupaten road to provincial road as the road passes through Makassar City, Kabupaten Gowa and Kabupaten Takalar along the west coast.

A supplemental study was conducted by the JICA Study Team and results and recommendations are incorporated un Appendix G.



Metro Tanjung Bunga Road



Bridge over Jeneberang River on Tj.Bunga -Takalar Road

Figure 3.4.4 Metro Tanjung Bunga - Takalar Road

(10) New Airport Terminal Access Road

The new Hasanuddin Airport Terminal is under construction. The new airport access road was completed in 2006. The development concept was 2-lane divided carriageways with a wide median of 10 m at the centre and connected to Jl.Perintis Kemerdekaan at Jl.Tol.Ir.Sutami IC.



Figure 3.4.5 New Airport Terminal and Access Road

CHAPTER 4 DEVELOPMENT TREND AND POSSIBLE DEVELOPMENT SCENARIOS ALONG THE STUDY ROUTE CORRIDOR

4.1 Land Use Plan

The basic feature of land use in the Mamminasata Metropolitan Area is a mixture of 3 components: natural, agricultural and urban land uses as shown in **Table 4.1.1**, and **Figure 4.1.1**, which more or less reflect the land use in the areas along the FS and pre-FS roads. Predominant categories of land use (with the share of more than 10 % of land as shown in **Table 4.1.1**) are agriculture (irrigated mixed crop, mixed crop, rice field), forest and dry land.

Table 4.1.1 Existing Land Use

Categories		Areas (sq.km)	Share (%)
Urban area	Residential, commercial, business and industrial	149.3	6.0
Agriculture area	Irrigated mixed crop, Irrigated rice field (11.4%), Mixed crop (10.0%), Rice field (15.8%), plantation	1,063.2	42.6
Green area	Grassland, Bushed, forest (26.1%)	717.9	28.7
Water	River, Wetland, Reservoir	205.5	8.2
Others	Dry land (13.9%), open space	364.4	14.6
Total		2,500.2	100

Source: Mamminasata Study

The FS and pre-FS roads mostly run through the flat/plain land of Mamminasata, which are gently undulated with a low elevation in the valley and a high elevation in the hilly area as described in Section 2.1.2. The lower land is mostly used by paddy fields irrigated with water from the rivers running through it, while crop and fruit tree cultivation and villages of farmers (human settlements) are predominant on the higher land. The high land free from flooding and good ground conditions is suitable for urban and housing development. In this regard the conflict between agriculture and urbanization is one of the major issues in the study area, particularly in the areas adjoining the urban areas of Makassar.

Urbanization has been expanding outward from the center of Makassar, especially along the main arterial roads. Urbanization stretches up

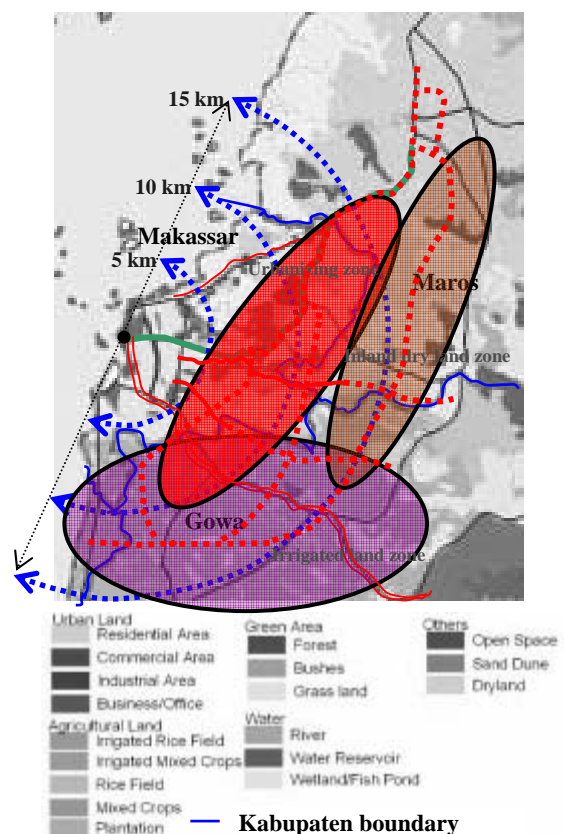


Figure 4.1.1 Existing Land Use

to the 15 km point from the center of Makassar to the north along the national road of Jl. Perintis-Kemerdekaan, and to the 10 km point to the south along the national road of Makassar-Sungguminasa - Takalar. The other direction of urbanization is toward the east from the center of Makassar up to the planned Outer Ring Road.

The service areas of the study roads stretching over the south of Maros Regency, the north and the east of Makassar City and the north of Gowa Regency can be roughly classified into 3 zones in terms of the existing land use, as follows:

1) Urbanizing Zone

The zone, which the Trans-Sulawesi road and Outer Ring road are planned to pass through, within an approximately 10 km radius from the center of Makassar City is featured with the mixed landuse of residential land, farm villages, paddy field and others, being the most rapidly urbanizing area. Taking into consideration their proximity to the Makassar City Center, the planned roads (radius and ring roads) may further push the urbanization to the outside.

2) Inland dry zone

The Mamminasa Bypass is planned to run outside of the core part of the Mamminasata Metropolitan Area, passing through the zone between the coastal area and the mountainous area of Mamminasata. The zone located more than 15 km from the center of Makassar is characterized by dry land with crops grown in non-paddy fields and non-farming land. The farmers' villages are scattered over the zone. This non-actively used dry land is planned to be developed for creation of new towns accommodating the increasing population of the Mamminasata Metropolitan Area.

3) Irrigated land zone

In contrast with the inland dry land zone, 65% of agricultural land in Gowa Regency is irrigated. The southern sections of the Trans-Sulawesi Mamminasata Road, Outer Ring Road and Mamminasa Bypass are planned to pass through and end in this zone.

4.2 Urban Structure and Land Use Plan

4.2.1 Mamminasata Metropolitan Areas Development Strategy and Policies

The Mamminasata Study elaborated the spatial development strategy that Mamminasata Metropolitan Area should serve as a “Logistic and Trade Hub in Eastern Indonesia” in the future, expecting Mamminasata and South Sulawesi to develop into clusters, promoting vertical and horizontal integration of the industrial activities. In order to materialize this strategy, the economic development plan included proposals in agriculture (shifting cropping pattern toward cultivation of crops of higher value such as vegetables, fruit and fish products based on advanced technology), manufacturing (supporting and logistic industries), tourism industry (domestic tourist spots) and others.

4.2.2 Proposed Urban Structure

In order to accommodate the projected size of population and economic activities in such a manner as preventing the prevailing urban sprawls toward the suburban areas of Makassar as well as concentration of population and economic activities causing traffic congestion and environmental deterioration in the Makassar urban area, a new urban structure, e.g. “Fun Structure” was proposed as shown in **Figure 4.2.1**. This proposed structure along which housing areas and industrial areas should be distributed to the regencies other than Makassar City. It is also incorporated in the “Multi-core development” program, as an objective envisioned in the existing spatial plan for Mamminasata Metropolitan Area.

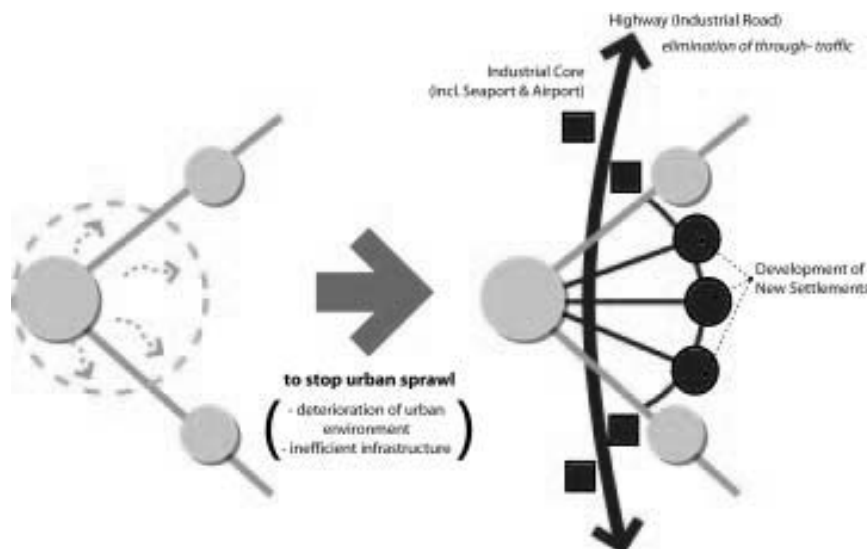


Figure 4.2.1 Spatial Development Structure for Mamminasata Metropolitan Area

4.2.3 Development Direction

In the pursuit of Multi-core development, development directions were more specifically defined as follows:

1) Housing and Urban Development

To decentralize population from Makassar City to the other regencies and to create large scale residential areas with efficient infrastructure.

2) Industrial Development

To expand industrial development in Makassar City and to induce industrial development into Maros, Gowa and Takalar Regencies.

4.2.4 Land Use Plan

Along with the proposed urban structure and development directions as described above, a land use plan (land use zoning and projects) will be proposed. The land use plan should be associated with the distribution of socio-economic indicators (population and GRDP) or land requirement, as explained in the following Section 4.4.

In the Metropolitan Study, development permit system/ regulation was proposed as outlined in **Figure 4.2.2**, although it is different from those of the current spatial plan in force in Indonesia.

(1) Promotion Area Category 1 and Control Area

The important components of land use zoning is “Urban Planning Zone, especially subdivided into Promotion Area Category 1”(see the red zone in **Figure 4.2.2**), which is designed to contain urban expansion within the limited area covering the existing and expanding built-up area in near future as shown in **Figure 4.2.2** (approximately covering the Makassar administrative territory excluding some parts of Kecamatan of Manggata and Tamalanrea). The excluded areas are placed under the Control area, which is designated in such areas as swamp, inundation/flood prone area, green open space and others.

(2) Agriculture and Settlement Area

The other important component is Semi-Urban Planning Zone, also being divided into Agriculture and Settlement Area (see brown zone in the figure) where urban/housing development is basically prohibited with the exception of those with development permit. Development permit is due to be applied and granted for those which clear the Development Guideline in terms of development size, land conditions, infrastructure and others.

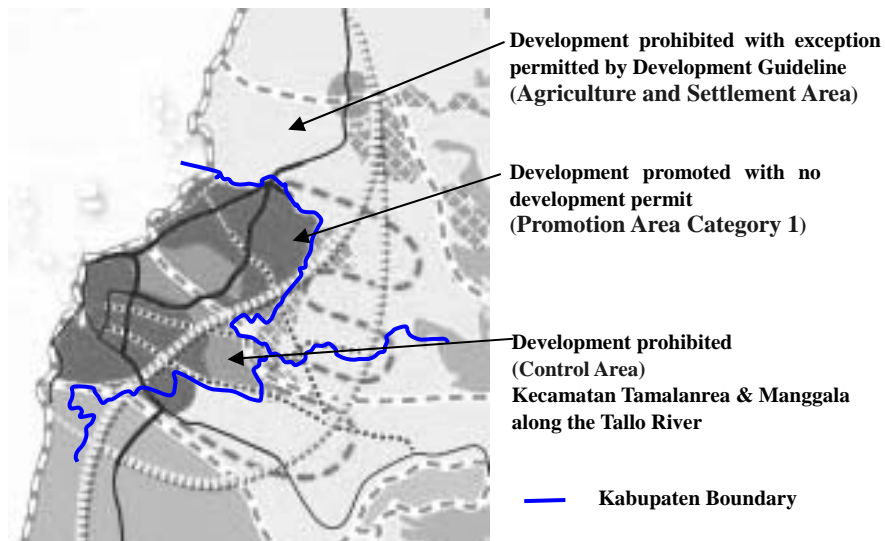


Figure 4.2.2 Development Promotion and Permit Zoning System

Based on this development permit system, the Development Zoning Plan and Projects were proposed in the Mamminasata Study as shown in **Figure 4.2.3**.

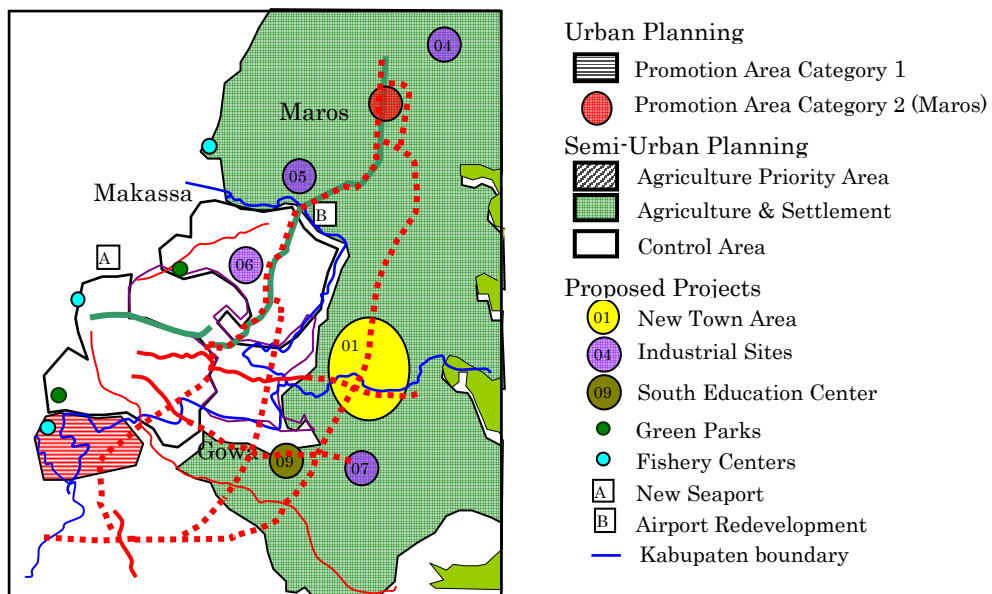


Figure 4.2.3 Proposed Development Zoning Plan

The basic policy of land use in this development system is to disperse the population, industries and urban activities in the new built-up areas. A new settlement area (New Town) is proposed at the east of Makkassar City in order to accommodate the increasing population in the Mamminasata Metropolitan Area.

4.3 Socio-economic Framework and Distribution

4.3.1 Basic Concept in setting Socio-economic Framework

The socio-economic framework of the Study area during the period of 2005-2020 was already established at the time of the “Study on Implementation of Integrated Spatial Plan for the Mamminasata Metropolitan Area, July 2006” (hereafter called the Mamminasata Study). This socio-economic framework was agreed by the Mamminasata Metropolitan Development Board (MMDCB).

The Mamminasata Study forecast rapid urbanization of the suburban area and population decrease in the center of Makassar. For example, the framework assumed that new development of large-scale residential estates in the suburbs of Makassar City (such as Pattallassang in Gowa, Pattallassang in Takalar, Tanralili and Mandai in Maros) will absorb about 430,500 local people by 2020. The Study Team basically agrees with the suburbanization trend and subsequent doughnut phenomenon in Makassar City, but judges that such scenario will progress not rapidly as the existing scenario. Given such condition, although the Study Team decided to use the same growth ratio of GRDP and population in the target year (2020) for the Study area as a whole, distribution of population and GRDP within the Study area was revised based on the following concept.

- i) More moderate development of suburban residential estate; and
- ii) Not rapid but gradual decrease in the population in the existing urban area of Makassar

4.3.2 Revised Population Forecast

Based on the concept mentioned above, the actualization ratio of planned residential area development was assumed to be much lower than the original estimate (original estimate: 2005-2010 = 50% and 2010- 2020 = 100%, revised estimate: 2005- 2010 = 30% and 2010- 2020 = 30%). The population forecast was revised taking into consideration the new development of 573.1 ha of residential areas within the planned industrial development area in Tamalanrea sub-district of Makassar City. In addition, taking the modification of the route of outer ring road into consideration, location of planned suburban residential area at Tanralili sub-district of Maros Regency was changed to Moncogloe sub-district of Maros Regency.

The population reduction ratio in the old city of Makassar was assumed to be lower than the original estimate (original estimate: target area = area with population density of above 150 residents per ha, reduction ratio = -2.1% per annum, revised estimate: 200 - 300 residents per ha, reduction ratio: -0.5% per annum, more than 300 residents per ha: -1.0% per annum). The remaining increased population was assumed to be absorbed by the existing residential area, which was determined based on the growth potential of each sub-district calculated based on the Cohort model.

As a result of the above-mentioned modification, the population absorbed by the large and medium

scale residential estate was reduced from the original estimate of 714,000 to the revised estimate of about 187,000. On the other hand, the population decrease at the center of Makassar was changed from the original estimate of -96,000 to the revised estimate of -18,000. It was assumed in the revised framework that the existing residential area will absorb more population (357,000) than originally estimated (12,000) by 2020.

Figure 4.3.1 and 4.3.2 indicates change in the population density between 2005 and 2023. As these figures show, population density in the periphery of Makassar City. Particularly, population density of Tamalanrea sub- district of Makassar (48.96 /km² in 2005 -> 62.07 /km² in 2023), Patallasang sub-district of Gowa (2.92 /km² -> 10.51 /km²), Mandai sub- district of Maros (5.81 /km² -> 13.55 /km²), Moncongloe sub-district of Maros (2.56 /km² -> 13.31 /km²), and Pattalassang sub-district of Takalar (11.22 /km² -> 20.66 /km²) were forecasted to grow rapidly.

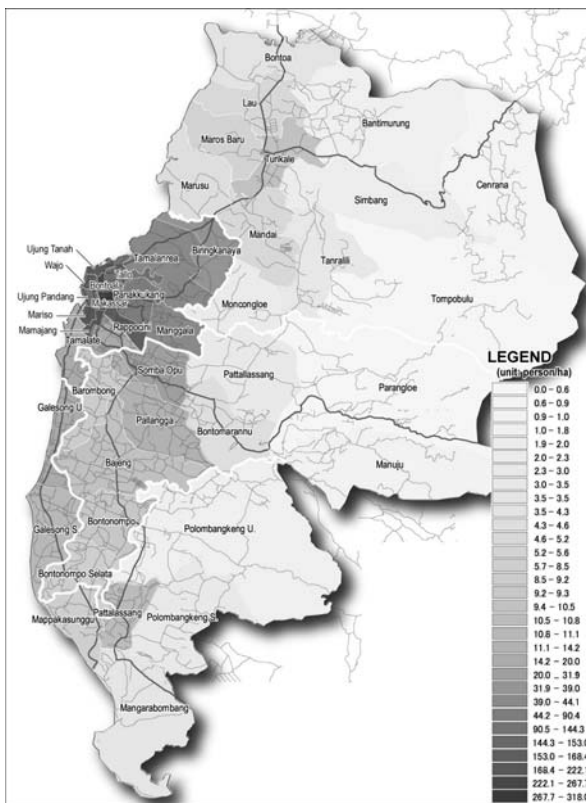


Figure 4.3.1 Population Density (2005)

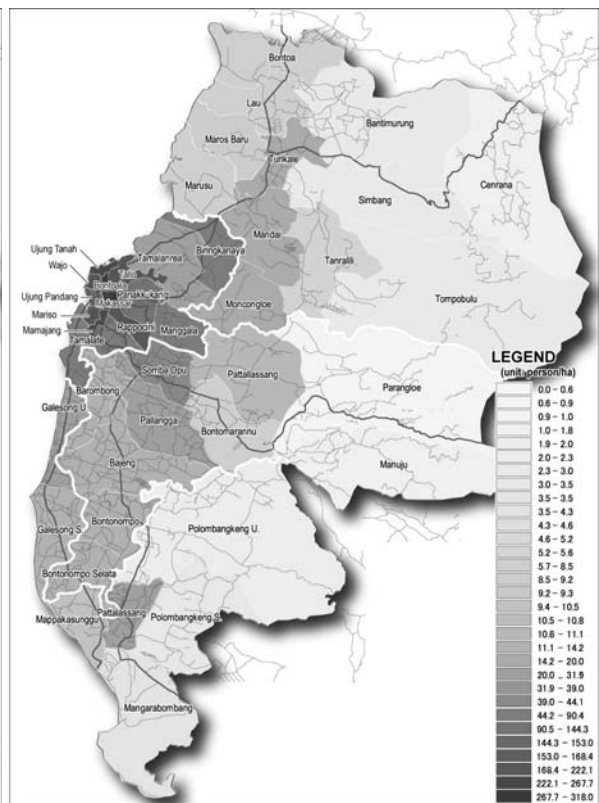


Figure 4.3.2 Population Density (2023)

Table 4.3.1 Comparison of Original Estimate and Revised Population Forecast

Sub-District	Population			Population Density			Annual Growth Ratio	
	Actual (2005)	Original (2020)	Revised (2020)	Actual (2005)	Original (2020)	Revised (2020)	Original (2005-20)	Revised (2005-23)
MAKASSAR								
Mariso	57,215	48,633	54,475	222.51	189.14	211.86	-1.08%	-0.33%
Mamajang	62,615	53,223	58,080	244.07	207.46	226.39	-1.08%	-0.50%
Tamalanrea	155,476	157,031	197,086	48.96	49.45	62.07	0.07%	1.59%
Rappocini	147,798	125,629	169,492	179.99	152.99	206.40	-1.08%	0.92%
Makassar	87,319	74,221	75,099	349.88	297.40	300.92	-1.08%	-1.00%
Ujung Pandang	29,505	29,800	37,239	97.87	98.85	123.53	0.07%	1.56%
Wajo	35,216	29,934	44,494	165.78	140.91	209.45	-1.08%	1.57%
Bontoala	60,126	51,107	54,384	294.46	250.29	266.34	-1.08%	-0.67%
Ujung Tanah	49,910	42,424	60,838	186.16	158.24	226.92	-1.08%	1.33%
Tallo	138,412	117,650	179,392	160.15	136.13	207.57	-1.08%	1.74%
Panakkukang	141,788	162,000	154,088	89.45	102.20	97.21	0.89%	0.56%
Manggala	99,235	123,000	117,655	46.54	57.68	55.18	1.44%	1.14%
Biringkanaya	127,508	185,000	164,618	43.81	63.57	56.56	2.51%	1.72%
Tamalate	93,319	171,000	126,561	19.37	35.49	26.26	4.12%	2.05%
MAROS								
Mandai	31,925	115,000	74,500	5.81	20.92	13.55	8.92%	5.81%
Moncongloe	11,440	11,669	59,575	2.56	2.61	13.31	0.13%	11.63%
Maros Baru	23,842	24,319	30,158	6.24	6.36	7.89	0.13%	1.58%
Lau	24,682	25,175	27,731	5.70	5.81	6.40	0.13%	0.78%
Turikale	38,207	38,971	43,284	11.59	11.82	13.13	0.13%	0.84%
Marusu	23,669	24,853	26,553	4.97	5.22	5.57	0.33%	0.77%
Bontoa	27,050	27,591	33,800	4.74	4.83	5.92	0.13%	1.50%
Bantimurung	29,204	30,664	35,488	2.03	2.13	2.46	0.33%	1.31%
Simbang	22,169	22,612	27,251	2.20	2.24	2.70	0.13%	1.39%
Tanralili	24,727	120,000	30,921	3.88	18.81	4.85	11.11%	1.50%
Tompobulu	14,722	15,016	18,202	0.57	0.58	0.70	0.13%	1.42%
Cenrana	15,039	15,340	18,064	0.99	1.01	1.19	0.13%	1.23%
GOWA								
Bontonompo	36,561	36,927	43,076	10.05	10.15	11.84	0.07%	1.10%
Bontonompo S.	30,562	30,867	36,008	9.18	9.27	10.82	0.07%	1.10%
Bajeng	79,656	80,453	93,807	11.17	11.28	13.15	0.07%	1.10%
Pallangga	78,115	149,000	117,264	15.56	29.68	23.36	4.40%	2.75%
Barombong	30,551	31,000	33,574	10.08	10.23	11.08	0.10%	0.63%
Somba Opu	100,441	130,000	117,768	35.23	45.60	41.31	1.73%	1.07%
Bontomarannu	25,941	26,000	28,359	4.99	5.00	5.46	0.02%	0.60%
Pattalassang	23,002	215,000	82,847	2.92	27.26	10.51	16.07%	
Parangloe	15,045	15,195	17,643	0.69	0.69	0.80	0.07%	1.07%
Manuju	14,211	14,354	16,667	1.16	1.17	1.36	0.07%	1.07%
TAKALAR								
Mangarabombang	35,113	36,166	37,347	3.69	3.81	3.93	0.20%	0.41%
Mappakasunggu	26,967	27,776	28,586	8.88	9.15	9.41	0.20%	0.39%
Polombangkeng S.	24,524	25,260	25,458	3.08	3.17	3.19	0.20%	0.25%
Polombangkeng U.	42,028	44,129	44,220	1.85	1.94	1.95	0.33%	0.34%
Galesong S.	46,048	47,429	48,807	11.52	11.86	12.21	0.20%	0.39%
Galesong U.	43,058	44,350	45,889	20.99	21.62	22.38	0.20%	0.43%
Pattalassang	30,134	89,000	55,484	11.22	33.14	20.66	7.49%	4.15%

Source: JICA Study Team

4.3.3 Revised GRDP Forecast

As same as population forecast, the Study Team assumed that the average growth rate of GRDP in the Study area remains unchanged. On the other hand, sub-district-wise distribution of GRDP, however, was revised in accordance with the change in the population forecast. The original estimate assumed that GRDP of each sub-district will increase based on the population increase in the respective sub-district, accordingly the GRDP growth rate was quite lower in the center of Makassar City, and was higher in bed-towns in suburban areas. For example, according to the original estimate, while the annual average GRDP growth rate of Makassar is only 3.5%, those of other regencies are considerably higher (Takalar: 9.9%, Gowa: 12.8%, and Maros: 13.7%)

The revised forecast assumed that GRDP will particularly increase in the sub-districts which have plans to develop industrial/commercial areas (including the proposed industrial area of Tamalanrea in Makassar City), then the remaining GRDP growth was attributed to the number of labor force in each sub-district.

Table 4.3.2 compares the original and revised GRDP forecasts. As a result of above mentioned revisions, the annual GRDP growth rate of Makassar was increased from 3.5% to 5.7%. On the other hand, that of other regencies was slightly decreased (Takalar: 9.9% -> 7.8%, Gowa: 12.8% -> 10.9%, and Maros: 13.7% -> 9.6%).

Figure 4.3.3 shows change in the GRDP in 1993 constant price. While the growth rate of Makassar City was forecasted lower than the other regencies, amount of incremental GRDP in Makassar was forecasted bigger than the other regencies.

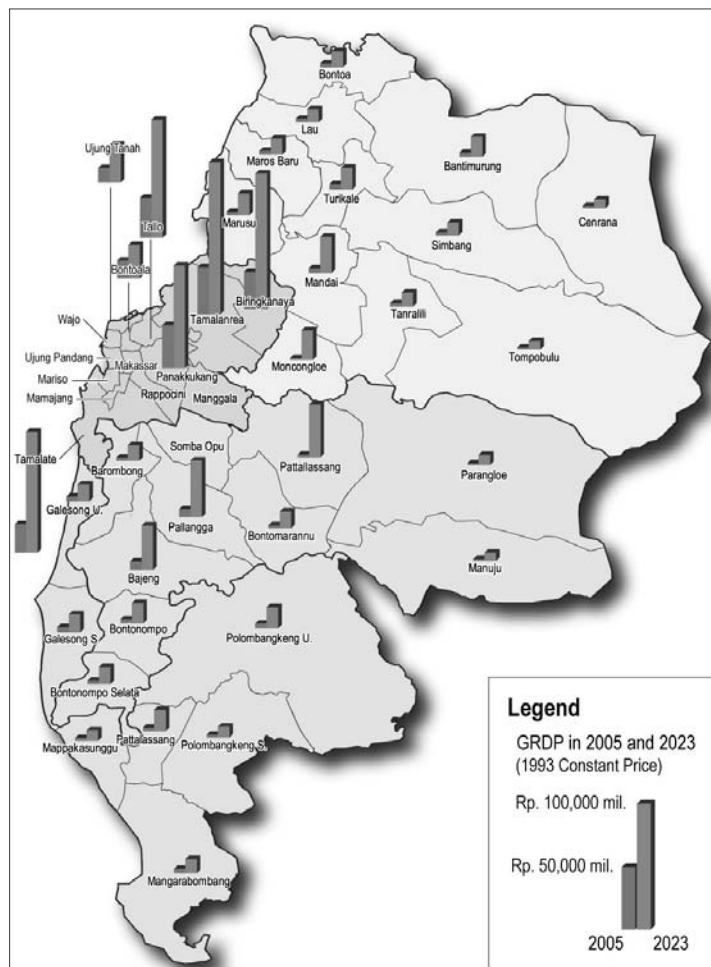


Figure 4.3.3 Change in the GRDP (2005 - 2023)

Table 4.3.2 Comparison of Original Estimate and Revised GRDP Forecast

	Kecamatan	2005	GRDP in 2020		Annual Growth Ratio (2005– 20)	
			Original	Revised	Original	Revised
MAKASSAR	Mariso	161,472	233,390	275,747	2.49%	3.63%
	Mamajang	182,527	255,415	293,991	2.27%	3.23%
	Tamalate	279,030	820,629	997,623	4.05%	8.86%
	Rappocini	437,858	602,892	857,948	2.16%	4.59%
	Makassar	250,294	356,186	380,142	2.38%	2.83%
	Ujung Pandang	88,345	143,010	188,498	3.26%	5.18%
	Wajo	105,476	143,652	225,221	2.08%	5.19%
	Bontoala	173,312	245,264	275,285	2.34%	3.13%
	Ujung Tanah	138,618	203,592	307,955	2.60%	5.47%
	Tallo	387,902	564,605	973,955	2.53%	6.33%
	Panakkukang	418,815	777,438	845,867	4.21%	4.80%
	Manggala	278,914	590,277	595,555	5.12%	5.19%
	Biringkanaya	355,079	887,815	1,103,275	6.30%	7.85%
	Tamalanrea	452,112	753,590	1,239,804	6.85%	6.96%
MAROS	Mandai	42,959	668,319	263,993	20.08%	5.73%
	Moncongloe	15,666	67,815	214,713	10.26%	12.87%
	Maros Baru	32,880	141,329	117,580	10.21%	19.07%
	Lau	33,517	146,306	95,407	10.32%	8.87%
	Turikale	52,004	226,477	158,761	10.31%	7.22%
	Marusu	32,342	144,432	159,677	10.49%	7.72%
	Bontoa	36,166	160,342	115,446	10.44%	11.23%
	Bantimurung	39,417	178,201	145,978	10.58%	8.05%
	Simbang	30,013	131,409	93,820	10.35%	9.12%
	Tanralili	33,187	697,376	102,097	22.51%	7.89%
	Tompobulu	19,980	87,268	60,101	10.33%	7.78%
	Cenrana	20,735	89,147	63,485	10.21%	7.62%
GOWA	Bontonompo	37,636	137,450	311,569	9.02%	7.75%
	Bajeng	80,857	299,466	487,151	9.12%	9.63%
	Pallangga	77,309	554,617	118,192	14.04%	9.31%
	Somba Opu	99,716	483,894	70,600	11.10%	9.31%
	Bontomarannu	25,890	96,779	119,595	9.19%	9.41%
	Parangloe	14,916	56,561	111,512	9.29%	11.61%
	Bontonompo S.	31,457	114,897	371,167	9.02%	9.05%
	Barombong	30,413	115,390	55,358	9.30%	11.15%
	Pattalassang	22,959	800,286	101,504	26.71%	10.65%
	Manuju	14,093	53,428	77,693	9.29%	20.39%
TAKALAR	Mangarabombang	36,798	126,411	78,792	8.58%	10.92%
	Mappakasunggu	28,352	97,082	153,783	8.55%	9.55%
	Polombangkeng S.	26,774	88,289	61,703	8.28%	10.94%
	Polombangkeng U.	46,165	154,242	126,006	8.37%	7.00%
	Galesong S.	49,721	165,777	99,979	8.36%	6.95%
	Galesong U.	45,599	155,013	69,233	8.50%	7.46%
	Pattalassang	32,679	311,077	146,474	16.21%	8.35%

Source: JICA Study Team

4.4 On-going and Proposed Development Plans Related to the F/S Roads

4.4.1 Updated Mamminasata Spatial Development Plan

An Integrated Spatial Plan for Mamminasata Metropolitan Area was established in 2005-2006 in cooperation of JICA as shown in Figure 2.3.3 in Section 2.3.2.

There are many development projects currently undertaken or planned as shown in the following **Figure 4.4.1**.

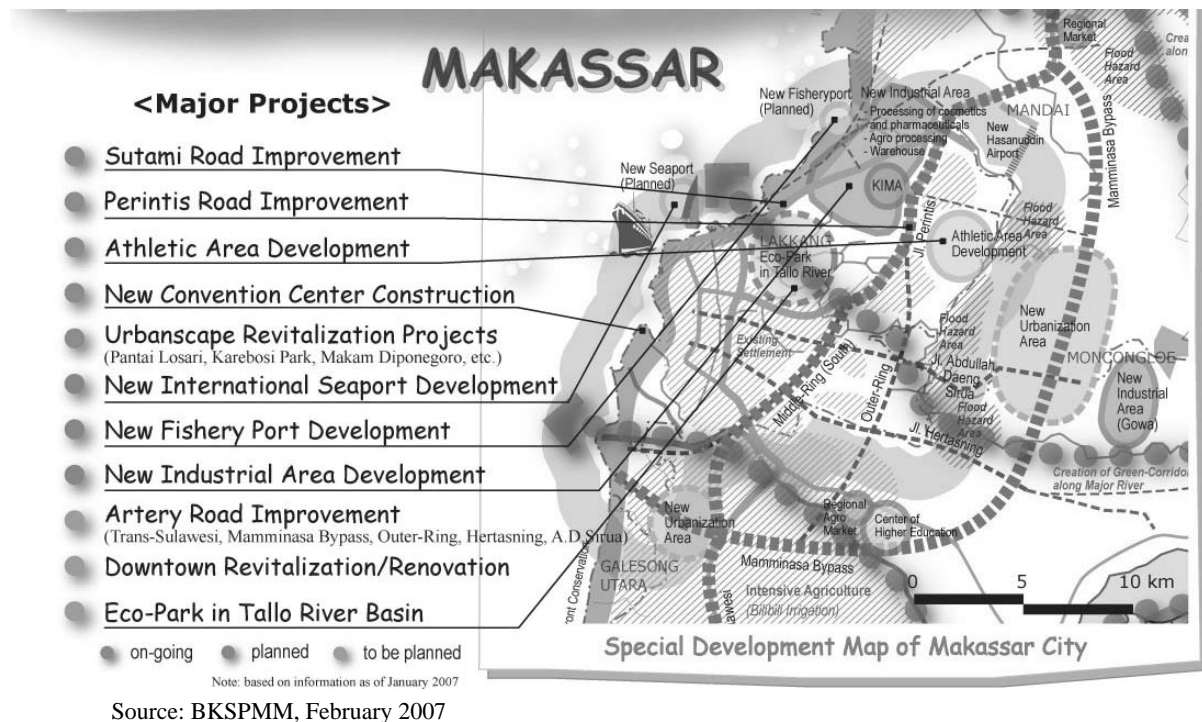


Figure 4.4.1 Ongoing/Planned Development Projects in Mamminasata Metropolitan Area

In addition to the above, several new development projects at Tanjung Bunga, Tanjung Merdeka and Tanjung Bayang are in progress or under planning, including integrated business district, housing, sports facilities, leisure facilities and culture center. Those project areas are located not only at the north but also in the south of the Jeneberang River in both Makassar City and Gowa Regency.

4.4.2 New Industrial Area Development along Jl.Tol.Ir.Sutami and Middle Ring Connection

An industrial area (KIMA) was developed between the Hasanuddin airport and the Makassar seaport with a JBIC loan based on a JICA development study in 1980s. The initially developed area was 200 ha. It was later planned to expanded to 700 ha and the current plan is approximately 1,200 – 1,600 ha along Jl.Tol.Ir.Sutami according to the 2004 spatial plan of the South Sulawesi Province. This is an integrated plan including warehouses for port cargoes, new industrial areas, housing, shopping facilities and parks (refer to **Figure 4.4.2**).

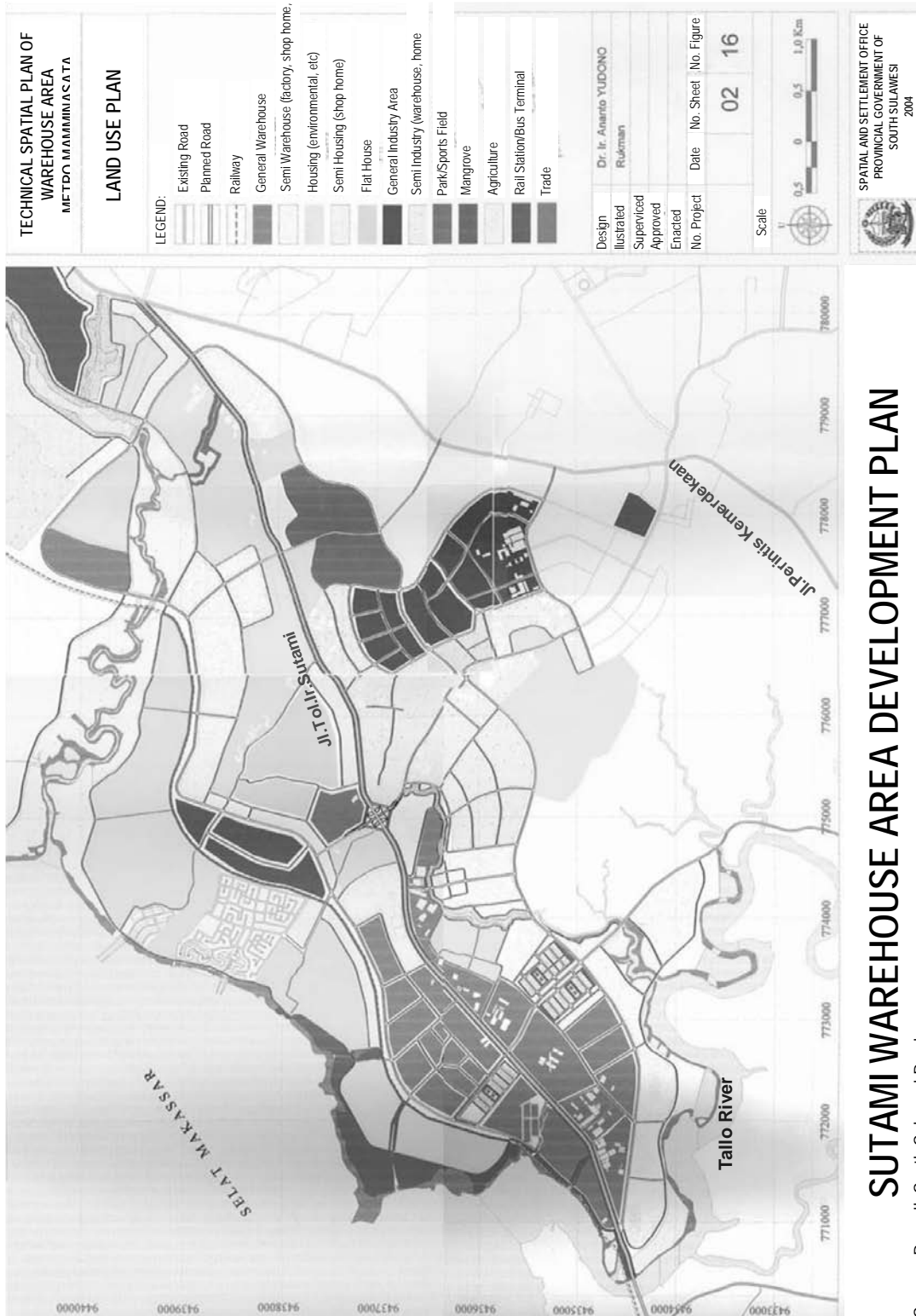


Figure 4.4.2 Land Use Plan of South Sulawesi Province along Jl. Tol.Ir.Sutami

As the Mamminasata Spatial Plan Study deleted the northern part of the Middle Ring Road planned in the 1989 JICA study, there are no roads that directly connect this industrial area with Sungguminasa and its southern area. The traffic of Sungguminasa and its southern area needs to pass through Jl.Tol Reformasi and Jl.Urip Sumoharjo when going to/from the port area. The F/S Study Team carefully reviewed the Mamminasata Plan, and recommends constructing a connection either from the Middle Ring Road or the Outer Ring Road to Jl.Tol.Ir.Sutami/KIMA.

4.4.3 Development Plans at the South of Jeneberang River and Related Road Links

As illustrated in **Figure 4.4.3**, an integrated development project is in progress at the mouth of Jeneberang River since this area is free from flooding after completion of the Bili-Bili dam.

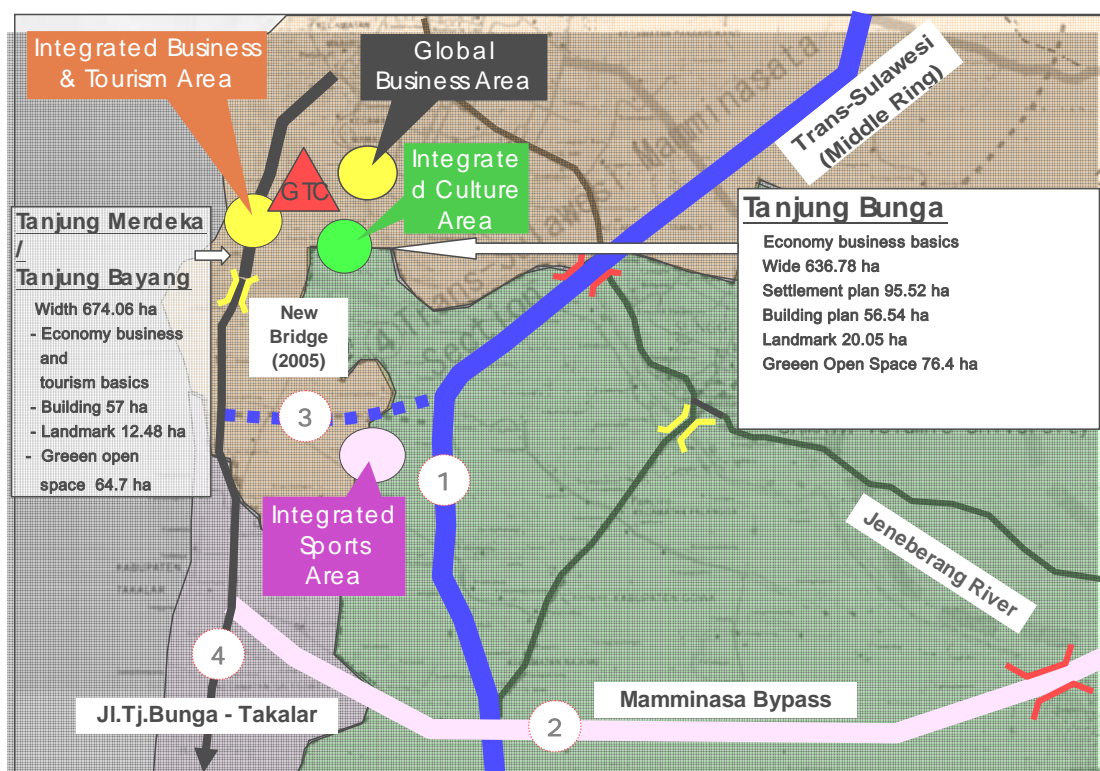


Figure 4.4.3 Appropriate Topography for Satellite Towns

The JICA 1989 Study recommended construction of the south radial road (Jl.Metro Tj.Bunga - Takalar) along the coast line. As the 300m-long bridge was constructed over the Jeneberang River in 2005, development has expanded to the south. The following four road links should be introduced for this area to control urbanization in order:

- ① Trans-Sulawesi Middle Ring Road access
- ② Mamminasa Bypass (South Section)
- ③ Middle Ring Road access (Tj.Bunga Access)
- ④ Jl.Metro Tj.Bunga – Talkalar (Lintas Barat Makassar).