
Project No. JN-3

1. PROJECT TITLE : Alternative Inter-Regional Links Establishment Project
2. LOCATION: : DIDP Area
3. IMPLEMENTING AGENCY : DPWH
4. OBJECTIVES : (1) To establish alternative inter-regional roads; and
(2) To provide alternative linkages with other regions in Mindanao.
5. EXPECTED EFFECTS : Reduction of vehicle operating costs
: Promotion of development potentials, especially in economic activities
6. PROJECT COSTS : ₱ 730 million
7. IMPLEMENTATION SCHEDULE : Phase 2 – Phase 3
8. PROJECT DESCRIPTION :

The project intends to establish new inter-regional linkages. Although the existing inter-regional roads are proposed to be upgraded, traffic volume will increase more than their capacities. The proposed new road sections will provide alternative linkages between the DIDP Area and other regions in Mindanao.

Specific road sections for the project are as follow.

- 1) Assuncion – Agusan road: this road will provide alternative linkage between Davao del Norte and Agusan Provinces or the north-eastern part of Mindanao in parallel with the existing Davao City – Tagum – Agusan road; sections of existing rural roads will be used as the alignment of this road.
- 2) Sto. Tomas – Talaingod – Bukidnon road: this road will connect areas in Davao del Norte with Bukidnon Province; the roads on this route are existing but still in gravel or impassable conditions; most of the routes will pass through upland areas.
- 3) Malita – G. Santos City road: this road will connect the southern coastal areas in Davao del Sur, specifically Malita with Sarangani Province and G. Santos City; most of the routes will pass through mountainous sections.

Project IN-4

1. PROJECT TITLE : Rural and Farm-to-Market Road Program
2. LOCATION : DIDP Area
3. IMPLEMENTING AGENCY : Province and municipalities
4. OBJECTIVES :
 - (1) To improve rural and farm-to-market roads to all weather conditions; and
 - (2) To establish a maintenance system of rural roads based on self-help efforts.
5. EXPECTED EFFECTS :
Efficient transport of agricultural products
Promotion of rural economy and social delivery
6. PROJECT COSTS : ₱ 9,760 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 3
8. PROJECT DESCRIPTION :

At present, in the DIDP Area, conditions of rural roads, especially farm –to-market access roads are very poor. This situation affects economic activities in the rural area. Some rural communities are facing difficulty in marketing their products due to inadequate farm-to-market roads. Since the DIDP Area is the agriculture oriented region, improvement of the rural access roads are as important as improvement of regional arterial roads.

The project includes the improvement of the existing rural and primary farm-to-market roads to paved or all-weather conditions. The project should start with the study to review the present rural road development and maintenance system and to evaluate existing conditions of rural roads. Based on the existing conditions, priority criteria should be established for rural road development with design standards. Equipment for road construction and maintenance should be upgraded and maintained in good conditions.

To accelerate and sustain the development of rural roads, effective improvement and maintenance system including budgeting should be also formulated based on the self-help efforts of the local communities.

The NGO consortium has identified priority barangays in Davao Oriental and Davao del Sur as follows:

Davao Oriental: Mahayag, Banaybanay (5 km),
Tagugpo, Lupon (10 km),
Sanghay, Mati (5 km),
Maputi, San Isidro (10 km), and
Manuel Roxas, Gov. Generoso (10km).

Davao del Sur: Bato, Sta. Cruz,
Sinawilan, Digos,
New Sibunga and Molopolo, Kiblawan,
San Guillermo and Malabang, Hagonoy,
New Clarin, Dolo and Rizal, Bansalan,
Kilolog Bala, Upper Bala and Kasuga, Magsaysay, and
New Murcia, Matanao.

Project IN-5

1. PROJECT TITLE : Special Purpose Roads Improvement Project
2. LOCATION : Compostela Valley, Davao City, Davao del Sur
3. IMPLEMENTING AGENCY : Provincial governments
4. OBJECTIVES :
 - (1) To improve roads serving tourism areas or urban/industrial areas; and
 - (2) To serve local communities around the tourism/urban/industrial areas.
5. EXPECTED EFFECTS : Promotion of tourism and more orderly urbanization
6. PROJECT COSTS : ₱ 624 million (as of end of 1998)
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 2
8. PROJECT DESCRIPTION :

The following will be undertaken to improve the access to promising tourism areas:

- Nabunturan – Maini Park Road Widening,
- New Corella – Carcor Road Pavement,
- Toril – Bayabas – Eden Road Pavement, and
- Mt. Apo National Park Road Pavement.

The project will also improve the Babak – Penaplata – Kaputian road connecting major town centers in Samal Island for tourism and other purposes. The road should be widened and improved from gravel to paved conditions.

The Digos Diversion Road Widening is also covered by the project.

Project IN-6

1. PROJECT TITLE : Davao Port Development Project
2. LOCATION : Davao City, Panabo
3. IMPLEMENTING AGENCY : PPA
4. OBJECTIVES :
 - (1) To improve the existing port facilities at Sasa Wharf in the short-term; and
 - (2) To establish a new international container terminal in the medium to long term.
5. EXPECTED EFFECTS : Strengthened function of Davao Metropolitan Area as the trade capital of Mindanao and the BIMP-EAGA
6. PROJECT COSTS : ₱ 5,650 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 3
8. PROJECT DESCRIPTION :

This is a long-term project to be implemented in stages. In the first stage, existing facilities at Sasa Wharf will be improved and expanded; the berth will be extended in steps. In the next stage, a new container port will be established in Panabo to handle international container cargoes.

Project IN-6a

1. PROJECT TITLE : Sasa Wharf Expansion and Improvement Project
2. LOCATION : Sasa, Davao City
3. IMPLEMENTING AGENCY : PPA
4. OBJECTIVES : To extend berth and to improve port facilities
5. EXPECTED EFFECTS : Promotion of potential for economic activities in the DIDP Area
6. PROJECT COSTS : ₱ 3.5 billion
7. IMPLEMENTATION SCHEDULE : Phase 1
8. PROJECT DESCRIPTION :

Davao Port (Sasa Wharf) will be developed in accordance with the PPA's 25-Year Port Development Plan prepared in 1995. Although the plan has not been approved yet, the draft plan has proposed a series of berth extensions and a number of improvements in order to meet the future cargo traffic increase.

The short-term projects (1995-2000) include 340 m berth extension, concrete paving of open storage area, development of area vacated by squatters and construction of passenger terminal sheds, transit shed and amenity block. Total project cost is estimated at ₱ 984.3 million.

The medium-term project (2000-2005) includes another 900 m berth extension with estimated cost of ₱ 2.5 billion. Total berth length will reach to 2,160 m with capacity of more than 6.5 million tons per year.

After 2005, however, Davao Port can no longer be expanded due to the limitation of port area. The analysis shows that the estimated cargo volume will be more than the berth capacity after the year 2010. To accommodate excess cargoes, new port development at Panabo was planned as long-term project.

Project No. IN-6b

1. PROJECT TITLE : International Container Terminal Development Project
2. LOCATION : Panabo, Davao del Norte Province
3. IMPLEMENTING AGENCY : PPA
4. OBJECTIVES :
 - (1) To establish a new international container port; and
 - (2) To accommodate increasing cargoes of the DIDP Area in cooperation with existing Davao Port.
5. EXPECTED EFFECTS : Promotion of potential for economic activities in the DIDP Area
6. PROJECT COSTS : ₱2.15 billion
7. IMPLEMENTATION SCHEDULE : Phase 2 – Phase 3
8. PROJECT DESCRIPTION :

The project involves construction of a new international container port at Panabo in Davao del Norte Province to serve mega carriers which will be expected to call on Davao City and surrounding economically growing zones and to load/unload cargoes for BIMP-EAGA member countries in the future. The project is being planned by PPA. The port should be designated as a container port to share its function in cooperation with the existing Davao Port. Davao Port will handle mainly general, break bulk and bulk cargoes etc.

The port area should be composed of waterfront property with container handling facilities and properties for container yard and industrial area. Under the project, an access road from national road to the port should be constructed.

It is estimated that cargo volume at the existing Davao Port will exceed its capacity by the end of Phase 2 of the DIDP Master Plan. Therefore, during the Phase 2, a feasibility study and detail design for the project should be conducted by reviewing port statistics of Davao Port. If there is a possibility of private sector participation to the project, a sort of BOT (build-operate-transfer) arrangement could be promoted and adopted.

Project No. IN-7

1. PROJECT TITLE : Rapid Passenger Ferry Service Establishment Project
2. LOCATION : Davao Gulf coastal area
3. IMPLEMENTING AGENCY : Private investors, relevant municipalities, DOTC
4. OBJECTIVES :
 - (1) To provide rapid passenger ferry service connecting the areas along the Davao Gulf; and
 - (2) To establish alternative means of transport connecting the most of PAICs in the DIDP Area.
5. EXPECTED EFFECTS : Reduction of travel time and improvement of comfort to passengers
6. PROJECT COSTS : ₱ 197 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 3
8. PROJECT DESCRIPTION :

The project includes the establishment of rapid passenger ferry service between Davao Gulf coastal areas. The new ferry service should not only provide alternative means of transport between major municipal centers along the Davao Gulf but also make the travel time shorter than by land transportation such as buses and passenger cars. In this sense, modern fast sea crafts should be installed and port facilities, especially berths, should be improved to accommodate passenger crafts and for the safe landing of passengers.

This rapid passenger ferry service should be operated and managed by the private sector, while the ferry ports should be supervised and controlled by local governments. Port supervisor should levy an appropriate port charge from ferry operators depending on the number of departures and other specific conditions.

Desirable routes are proposed below.

- Davao City – Lupon
- Davao City - Samal

Relevant local governments should conduct the investment promotion for the project, and a preliminary financial study should be prepared based on the cost estimation and level of services such as fare and frequency. Business permission should be obtained from DOTC.

As a part of this project, there is a project proposal named Super Fast Craft (Water Jet) that will provide passenger ferry services for Davao – Lupon – Gov. Generoso. A project study was prepared and papers for the project realization are being processed by the Magbalusta PAIC in coordination with BOI. Cost of two units of water jet (made in Japan) is ₱ 25 million. Engineering design of the seaport in Lupon will be funded by the office of the congresswoman.

The project includes construction of pier, passenger terminal and parking area in Lupon, and purchase of four units of water jets.

Project No. IN-7a

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|----------------------------|---|---|
| 1. PROJECT TITLE | : | Shipping Service to Remote Islands |
| 2. LOCATION | : | Route between Sarangani/Balut Islands and mainland (Davao del Sur) |
| 3. IMPLEMENTING AGENCY | : | Private ship operators, relevant municipalities, Provincial government of Davao del Sur |
| 4. OBJECTIVES | : | To establish regular shipping service between Sarangani/Balut Islands and provincial capital |
| 5. EXPECTED EFFECTS | : | Reduction of travel time between the islands to Digos and Davao City Better services for passengers, visitors and cargo transportation |
| 6. PROJECT COSTS | : | ₱ 110 million |
| 7. IMPLEMENTATION SCHEDULE | : | Phase 1 – Phase 3 |
| 8. PROJECT DESCRIPTION | : | |

The project intends to establish shipping routes for Sarangani and Balut Islands to connect with the provincial capital of Digos and/or Malita. At present, the islands are connected only with General Santos City by irregularly scheduled ships and not connected with the areas in Davao del Sur. Regular shipping service will bring the island's stronger connection with the provincial capital of Digos and increase in tourists/visitors and potential for business activities.

However, since the traffic volume of passengers and cargoes by shipping is not so large to cover the ship operating cost of private operators, an appropriate percentage of the ship operating cost should be subsidized by provincial and/or municipal government to keep the fare in lower level.

The project also includes some small improvement of berth facilities at the islands to increase the safety of passengers and ships.

Project No. IN-7b

1. PROJECT TITLE : Samal Island Ferry Service Expansion
2. LOCATION : The Island Garden City of Samal and Davao City
3. IMPLEMENTING AGENCY : Private sectors, MARINA, DOT (Department of Tourism), governments of the Island Garden City of Samal and Davao City
4. OBJECTIVES :
 - (1) To increase service frequency,
 - (2) To install modernized ferry boat, and
 - (3) To improve berth facilities.
5. EXPECTED EFFECTS :

Stronger connection between Samal and Talikud Islands and the mainland

Increase of tourism potential of the islands
6. PROJECT COSTS : ₱ 55 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 2
8. PROJECT DESCRIPTION :

The project intends to increase the service frequency of existing ferry boats including roll-on/roll-off ships between Davao City and berths in the islands of Samal and Talikud. The project will not only improve passengers' convenience but also increase the tourism potential of the islands.

The project also includes installation of new type modernized boats by private operators and improvement of berth facilities in the islands. For the Davao City side, the Sta. Ana pier could be a base ferry terminal to access to the tourism destinations in the islands with tourism information desk and pleasant waterfront environments such as marina (yacht harbor), seaside park and restaurants.

Further, the connection by bridges may be considered during the master plan period based on the situation of industrial and residential land uses in the islands.

The project cost covers construction of a pier in Talikud island only; purchase of ferry boats is not included.

Project No. IN-8

1. PROJECT TITLE : Davao International Airport Development Project (DIADP)
2. LOCATION : Davao City
3. IMPLEMENTING AGENCY : DOTC, ATO (Air Transportation Office)
4. OBJECTIVES : To expand and improve airport facilities and services to meet with international standards
5. EXPECTED EFFECTS : Improvement of safety and comfort to passengers
6. PROJECT COSTS : ₱ 4,245 million (as of Feb. 1998, 1\$ = ₱ 34)
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 3
8. PROJECT DESCRIPTION :

The project covers the upgrading of the DIA (Davao International Airport) into full international standard to serve as a gateway to the south. The project involves extension of existing runway up to 3,000 m with new passenger and cargo terminals and other airport operation, maintenance and air navigation aids and communication facilities. Project cost was estimated at ₱ 4.245 billion to be funded mostly by Asian Development Bank (ADB) and European Investment Bank (EIB). Project period for Phase I was scheduled for four years from 1995 to 1998, but it has already been delayed due to difficulties in the site acquisition of affected areas and resettlement of affected families. However, this problem has been solved and implementation will go into construction stage.

Original schedule and development items of the project were shown below.

Phase I (December 1998, capacity good through 2010)

- Expansion of land area from 104 ha to 209 ha
- Extension of runway from 2,500 m to 3,000 m
- Construction of new passenger/cargo terminals, new control tower, parking apron, central plant, fire/crash/rescue bldg., maintenance bldg., car parking

Phase II (2010-2015, capacity good through 2020)

- Construction of parallel taxiway
- Expansion of passenger/cargo terminals, parking apron and car parking
- Construction of service industries, hotel/convention center

Phase III (2015-2020, capacity good through 2030-2035)

- Construction of second passenger terminal
- Expansion of car parking

Phase IV (2030-2035, capacity of terminals good through 2040-2050)

- Ultimate expansion of second passenger terminal, parking apron
- Second expansion of cargo terminal

Project No. IN-9

1. PROJECT TITLE : Mati Airport Improvement Project
2. LOCATION : Mati (Davao Oriental)
3. IMPLEMENTING AGENCY : DOTC, ATO, provincial government of Davao Oriental and municipal government of Mati, Magbalusta PAIC
4. OBJECTIVES :
 - (1) To improve airport facilities and navigational aids; and
 - (2) To promote flight operation for domestic passenger and domestic/international cargo transportation.
5. EXPECTED EFFECTS :
Reduction of travel time to/from Mati Area
Enhancement of business activities in Mati Area
6. PROJECT COSTS : ₱ 85 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 2
8. PROJECT DESCRIPTION :

The existing Mati Airport classified as secondary airport is located in Mati, Davao Oriental. It has a concrete 1,300 m runway with width of 36 m. At present it is available for general aviation purposes and caters also to private planes in chartered flight but not in regular flights. The airport is used mainly for military purposes.

In the DIDP Area, at present, the Mati area is relatively apart from major international/inter-regional access points such as Davao International Airport and Davao Port. Therefore, to accelerate economic activities such as business, agro-industry and tourism in this area, alternative transportation means should be provided for the movements of people and goods. Improvement of airport will bring more passengers, tourists and high-value goods to and from the Mati Area.

The project includes the improvement of terminal building, runway and navigational facilities to accommodate more passengers, visitors and high-value commodities.

The MAGBALUSTA PAIC of Davao Oriental is now promoting installation of flight operation at Mati Airport, especially for domestic passenger and international cargoes. They are now conducting situation analysis and demand survey on domestic flights and coordinating with MENZI on their volume of mango export. Discussion with the Air Philippines staff has been done.

Project No. IN-10

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|----|-------------------------|---|--|
| 1. | PROJECT TITLE | : | Urban Traffic Management Program |
| 2. | LOCATION | : | Davao City and other urbanized municipal centers |
| 3. | IMPLEMENTING AGENCY | : | City and municipal governments, DPWH |
| 4. | OBJECTIVES | : | (1) To install signals at heavy-traffic intersections; and (2) To improve/widen bottleneck road sections. |
| 5. | EXPECTED EFFECTS | : | Expansion of the existing intersection capacity Reduction of travel time and traffic accident |
| 6. | PROJECT COSTS | : | ₱ 547 million |
| 7. | IMPLEMENTATION SCHEDULE | : | Phase 1 – Phase 3 |
| 8. | PROJECT DESCRIPTION | : | |

Generally, the installation of signals at heavy-traffic intersections results in a substantial reduction in the number of traffic accidents, and expansion of intersection traffic capacity, securing orderly traffic flow and protection of pedestrians. At present, traffic signals are installed at limited intersections in the Area, even in Davao City. Recently, traffic volume in urbanized areas has been increasing rapidly due to the accumulations of population and economic activities. Since construction of new urban roads cannot keep pace with increasing traffic volume, traffic management scheme is an important task in the future.

The program includes installation of traffic signals at heavy-traffic intersections along arterial roads in major municipal centers such as Davao City, Tagum City, Digos etc. Basic criteria for selection of intersections are as follow.

- 1) Traffic signal has to be basically installed at intersections: a) on arterial roads and major secondary roads, b) where traffic is so heavy that the requirement of full stop on the inferior road would rather aggravate traffic confusion and c) where saturation rate is 0.5 or over (as installation standard). To identify such intersections, traffic count survey and analysis should be done.
- 2) Automatic fixed-cycle signal is basically to be installed.
- 3) It is desirable that two or more signals installed with small intervals between them and synchronized with each other (in the direction of the main flow).
- 4) In order to maximize the effect of traffic signal, appropriate road signs and marking are to be installed in or near the intersection. Appropriate traffic restrictions are to be effected in the vicinity (with about 40 meters) of intersection, to include the restriction of entry and exit premises and the prohibition of on-street parking and PUJ/PUB loading/unloading points.

For example, in Davao City, a total of 14 traffic signals have been installed mostly on Qurino Ave., San Pedro Street and C. M. Recto Ave. These signals are manually operated by policemen or automatic fixed-cycle system. In and around Poblacion, 49 intersections have been identified for the installation of necessary signals.

The program should also include improvement and/or widening of bottlenecks such as intersections, bridges and PT loading/unloading points etc. Further, heavy-traffic intersections should be vertically separated like structures of overpass, underpass and flyover. The following intersection improvement projects are being proposed as DPWH Priority Projects.

| <u>Interchange</u> | <u>Type</u> | <u>Project Cost</u> |
|----------------------|-------------|---------------------|
| ABS-CBN Interchange | Flyover | ₱ 80 million |
| Buhangin Interchange | Underpass | ₱ 40 million |
| Ulas Interchange | Flyover | ₱ 80 million |
| Ma-a Interchange | Flyover | ₱ 75 million |

Other intersections include Ecoland-Sandawa (₱ 200 million), Bankerohan (₱200 million), and Quirino Chinese School-Bajada (₱ 200 million) for flyover construction.

Project No. IN-11

1. PROJECT TITLE : Integrated Public Transportation Terminals Improvement Project
2. LOCATION : Davao City, Tagum City (Davao del Norte), Digos (Davao del Sur), Mati (Davao Oriental), Nabuntran (Compostela Valley) and other urbanized centers
3. IMPLEMENTING AGENCY : Provincial, city and municipal governments, DOTC, PUB/PUJ/Tricycle cooperatives
4. OBJECTIVES :
 - (1) To provide basic facilities to public transportation passengers;
 - (2) To integrate both provincial bus service and city public transportation services by bus, jeepney and tricycle; and
 - (3) To support public transportation industry.
5. EXPECTED EFFECTS : Better public transportation services and comfort for public transportation passengers
6. PROJECT COSTS : ₱ 341 million
7. IMPLEMENTATION SCHEDULE : Phase 1 : Major urban centers
Phase 2 – Phase 3: Other urbanized centers
8. PROJECT DESCRIPTION :

Bus terminals exist in major city/municipal centers, especially for provincial and inter-municipal public transportation services. However, basic facilities like bus shelters, information desks and toilets etc. are very poor at the terminals. Also intra-municipal routes are not physically connected. As public transportation is a very important mode of transport in the Area, government should provide integrated terminal facilities to improve the levels of public transportation services as well as to formulate a multi-modal public transportation network.

The project consists of improvement of terminal facilities such as parking lots, passenger shelters, toilets, and information desks providing operation timetables, description of intra-municipal routes and city guide map. Terminals should be expanded for loading/unloading spaces for intra-municipal services and taxis. Rerouting for some related intra-municipal services should be done.

The costs of the improvements could be financed with not only by local government but also with license duties paid by shops and cafeterias around the terminal and terminal charges from bus operators. Each bus operator should pay the terminal charge to the terminal operator (possibly independent organization composed of local government and bus operators) depending on the facility they use and the number of departures.

Candidate locations selected for this project are 1) Davao City: two terminals at Panacan and Ulas in addition to the existing overland transport terminal at Ecoland, 2) Tagum City: Davao del Norte, 3) Digos: Davao del Sur, 4) Mati: Davao Oriental, 5) Nabuntran: Compostela Valley, 6) other urbanized centers.

Project No. IN-12

1. PROJECT TITLE : Davao City Urban Arterial Roads Development Project
2. LOCATION : Davao City
3. IMPLEMENTING AGENCY : DPWH, Davao City government
4. OBJECTIVES: :
 - (1) To establish a functional urban arterial road network for Davao City;
 - (2) To provide an efficient road network in Davao City; and
 - (3) To separate through-traffic from intra-city traffic.
5. EXPECTED EFFECTS :
Reduction of traffic congestion and VOC (vehicle operating cost) in the city
Enhancement of potential for economic activities
6. PROJECT COSTS : ₱ 3,990 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 3
8. PROJECT DESCRIPTION :

The Arterial Road network plan was formulated in the City's Comprehensive Development Plan, 1996-2021 in 1995 to expand and/or utilize some existing road sections. Planned arterial road network is composed of five radial roads, three circumferential roads and a coastal road. Radial roads include Davao – Bukidnon road (R1), Toril – Calinan road (R2), Catalunan Grande – Dacudao road (R3), Ma-a – Talandang road (R4) and Buhangin – Callawa roads. Circumferential roads include the Diversion Road (C1), Bunawan – Binugao (C2), and Bunawan – Calinan (C3). Most of proposed roads will have 60-meter wide right-of-way, 80 m for R1, and 40 m for C1.

In addition, a new coastal road has been proposed with length of 20 km. The right-of-way will be 60 m wide. The road section will start at Lizada, Toril and traverse through Davao Fishport Complex, Talomo and Time Beaches and end at Magsaysay Park. Three permanent bridges will be constructed, specifically across the rivers of Davao, Matina, and Talomo. Project cost was estimated at ₱580 million.

This proposed road network should be studied and evaluated under the proposed Davao Urban Transportation Development Master Plan. Further, a feasibility study and detail engineering design should be conducted.

The project costs exclude the Davao – Bukidnon road (R1) as the cost of this road is included in the cost of the Inter-Regional Roads Upgrading Project.

Project No. IN-13

1. PROJECT TITLE : Davao Metropolitan Area Light Rail Transit Project
2. LOCATION : Coastal urbanized areas of Davao City and surrounding municipalities (if financially viable)
3. IMPLEMENTING AGENCY : Governments of Davao City and relevant municipalities, DOTC, and the private sector
4. OBJECTIVES :
 - (1) To establish rail transit along coastal areas of Davao City and neighboring municipalities; and
 - (2) To provide faster, stable and reliable services to public transportation passengers.
5. EXPECTED EFFECTS :
Reduction of passenger's travel time
Improvement of traffic congestion on roads
6. PROJECT COSTS : ₱ 240 billion
7. IMPLEMENTATION SCHEDULE :
Phase I : feasibility study and detail design
Phase II : construction and start operation
Phase III: route extension
8. PROJECT DESCRIPTION :

The Davao City Comprehensive Development Plan seeks for the establishment of an urban LRT (Light Rail Transit) system that will serve coastal built up area of the city as well as neighboring municipalities in Davao del Norte and Davao del Sur. Along the coastal areas of Davao City, a rail transit system makes sense from the view point of the projected demand increase and geographical shape of the city's urbanized areas. Without a rail transit system, it is evident that traffic congestion on urban roads will get much worse.

Although the target year for the completion of the project was the year 2000, budget has not been prepared yet. Therefore, to promote the implementation of the project, the plan suggested that a BOT (Build-Operate-Transfer) financing scheme should be adopted.

The plan prepared by city is as follows.

| | | | |
|-----------|-------------------|---------|-------------|
| Stage 1 | Panacan – Toril | 35.7 km | 22 stations |
| Stage 2-A | Toril – Sta. Cruz | 25.0 km | 10 stations |
| Stage 2-B | Panakan – Panabo | 22.0 km | 5 stations |

Since the plan was prepared as an initial proposal, a full scale feasibility study should be conducted to facilitate DOTC's decision and discussion with NEDA towards implementation of the project. In the feasibility study, specific alignment and route section, locations of stations and depot and type of rail system should be determined based on the future ridership forecast. Preliminary engineering/technical study and economic evaluation should be included. In considering the BOT arrangement, feasible financial schemes should be studied for prospective investors. The study could be done under the proposed Davao Urban Transportation Development master plan study. If so, the feasibility study can utilize the reliable transport database and forecast models of the master plan study. And alternative plans shall be considered for the basic structure like rail truck and communication system implemented by public sector.

During the conduct of the feasibility study, the government should promote the project to the investors. Detail design and construction should be followed in Phase 2. Operation will start and route extension will be considered in Phase 3.

Project No. JN-14

1. PROJECT TITLE : Davao Urban Transportation Development (Master Plan Study)
2. LOCATION : Davao City and surrounding municipalities
3. IMPLEMENTING AGENCY : DPWH, DOTC, NEDA, Governments of Davao City and related municipalities
4. OBJECTIVES :
 - (1) To formulate the urban transportation master plan for Davao City and surrounding municipalities;
 - (2) To establish transportation database for planning; and
 - (3) To conduct technology transfer in planning.
5. EXPECTED EFFECTS : Better plan and implementing arrangement to be conducted under foreign technical cooperation agency.
6. PROJECT COSTS : ₱ 120 million
7. IMPLEMENTATION SCHEDULE : Phase 1
8. PROJECT DESCRIPTION :

Davao City has prepared the Comprehensive Development Plan, 1996-2021 in 1995. The plan for transportation infrastructure was included in the plan, but road network and public transportation system was not planned based on the proper future traffic demand forecast in considering the relationship between future socio-economic activities, land use plan, passenger/commodity movements and modal choice mechanism. To formulate more efficient network plan and programs, a full-scale master plan study including person-trip surveys should be conducted for the urban transportation development.

In the study, urban arterial road network, public transportation including rail transit, traffic management scheme and institutional aspects should be further studied and evaluated. Scope of works could be tentatively itemized below.

- Collection of existing data and information
- Conduct of transportation, traffic and environmental surveys
- Analysis of survey results
- Transportation database establishment
- Analysis on urban transportation problems
- Future socio-economic framework
- Alternative urban development scenarios
- Future demand forecast
- Formulation of transportation master plan (road network, public transportation, traffic management, institutional aspects)
- Engineering design and cost estimation
- Investment program
- Project evaluation
- Initial environmental evaluation
- Urban transportation development plan
- Technology transfer (data processing, demand forecast, planning)

Project No. IN-15

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|----|-------------------------|---|---|
| 1. | PROJECT TITLE | : | Rural Electrification and Renewal Energy Development Program |
| 2. | LOCATION | : | DIDP Area |
| 3. | IMPLEMENTING AGENCY | : | RECs, LGUs/economic enterprises (EC), the private sector/NGOs depending on energy situation while coordinating with DOE, EDC, NPC |
| 4. | OBJECTIVES | : | To achieve optimum energy mix as a whole based on conditions of energy supply and resources toward the fully energized DIDP Area |
| 5. | EXPECTED EFFECTS | : | Expanded power business Streamlined energy development Reduced conventional energy use Increase in employment and income |
| 6. | PROJECT COSTS | : | ₱ 1,298 million (for 18 years) |
| 7. | IMPLEMENTATION SCHEDULE | : | Phase 1 – Phase 3 |
| 8. | PROJECT DESCRIPTION | : | |

Diversification of energy source is the essential strategy, and renewable/non-conventional energy is an option for the DIDP Area. Renewable energy potentials are identified as follow.

- Power generation by solar photovoltaic in upland areas and remote barangays;
- Mini-hydro power generation (Aliwagwag, Domago-oc, Sumlog River, Tandik-New Bataan, Camanlaman-Maragusan, Don Marcelino, Tudaya Fall-Sta. Cruz, Tinago Springs-Bansalan, Kaputian, Talaingod, Sarangani, etc.);
- Geothermal power generation (Compostela Valley, Sarangani);
- Tidal wave (Sarangani);
- Solid hybrid fuel making from garbage and other waste/residues (Davao City); and
- Power generation by other resources.

In view of sustainable and environment-friendly energy development, this program will be implemented with the following components:

- (1) To formulate a DIDP renewable energy development plan as a guideline;
- (2) To coordinate concerned organizations for the preparation of proper conditions for renewable energy development such as:
 - Loan guarantee, subsidy mobilization, and the like;
 - Wheeling and banking power generated by renewable energy of existing power transmission/distribution lines; and
 - Institutional arrangements with power distributors to allow private renewable generators to sell directly to consumers;

-
- (3) To strengthen the University of Southeastern Philippines (USEP) Renewable Energy Center's capacity to conduct basic studies for application of the relevant technology and field survey, and transfer of the technology;
 - (4) For these purposes, to establish a renewable energy development council under strengthened DIDP-PMO, consisting of concerned agencies, LGUs, RECs, NGOs etc., and
 - (5) To conduct surveys on solar, wind, biomass/gas, micro-generation, DSM program in the DIDP Area, and provide advice to the Government through USEP.

These are incorporated in the following component projects:

- IN-15a Solar Energy Development Project,
- IN-15b Bio-Gas Pilot Project, and
- IN-15c Sarangani Renewable Energy Island Project.

Project No. IN-15a

- | | | | |
|----|-------------------------|---|---|
| 1. | PROJECT TITLE | : | Solar Energy Development Project |
| 2. | LOCATION | : | DIDP Area |
| 3. | IMPLEMENTING AGENCY | : | DOE, RECs, BCD |
| 4. | OBJECTIVES | : | To deliver affordable solar energy systems to areas too costly to be served by grid system. |
| 5. | EXPECTED EFFECTS | : | Progress of rural electrification Improved health, education, and the well-face of the farmers Changes in lifestyle |
| 6. | PROJECT COSTS | : | ₱ 90 million (\$ 2.3 million) |
| 7. | IMPLEMENTATION SCHEDULE | : | Phase 1 |
| 8. | PROJECT DESCRIPTION | : | |

Solar energy has been proven affordable and economical in comparison with grid extension in area far from grid line and with low population density. Based on preliminary research in DIDP Area, the cheapest solar system without subsidies would cost ₱ 265 per household per year to have three lights for three to four hours per day, which is affordable. This cost is much cheaper than the grid extension. Solar energy is competitive in serving not only the isolated areas, but also municipal street lighting, lighthouse lighting, rural health clinic operation etc. The project includes three components:

- Solar Central Battery System (SCBCS),
- Separate Solar Household System, and
- Solar Water Pumping System.

Project No. IN-15b

1. PROJECT TITLE : Bio-Gas Pilot Project
2. LOCATION : Davao City
3. IMPLEMENTING AGENCIES : DOE and USEP
4. OBJECTIVES : To develop and rehabilitate two bio-gas digesters to produce hot water in replacement of fuel
5. EXPECTED EFFECTS : Establishment of two digesters
Replacing the conventional fuel (diesel)
Reduced dumping of animal waste
6. PROJECT COSTS : ₱ 50 million
7. IMPLEMENTATION SCHEDULE: Phase 1
8. PROJECT DESCRIPTION :

The project is to build a new digester at the Davao Slaughter House and rehabilitate an existing one in a private chicken farm, as part of DOE plan to install bio-digester in every slaughter house of the municipalities in the DIDP Area.

- a) Davao Slaughter House, 50 m³, total ₱ 250,000 (1997 price). It needs about US\$ 6,250 in total. The cost of this project could be recovered in one year, because the digester could save the slaughter house around \$7,400 in fuel cost.
- b) Rehabilitation of an existing Bio-digester, 100 m³ (pig/chicken farm), ₱250,000 (Owner own expenses ₱250,000) by a chicken farm private owner. The cost is estimated at ₱ 500,000 or US\$ 12,500. The owner is willing to pay the cost. The rehabilitation would similarly save fuel cost of running the chicken farm.

The project will be implemented by DOE. A further study will be needed to make a technical and economic assessment to look at the possibility of bio-gas power generation.

Project No. IN-15c

1. PROJECT TITLE : Sarangani Renewable Energy Island Project
2. LOCATION : Sarangani Island, Davao del Sur
3. IMPLEMENTING AGENCY : EDC, LGUs, NGO
4. OBJECTIVES :
 - (1) To experiment on alternative renewable energy sources for rural electrification for wide application in the DIDP Area; and
 - (2) To create additional man-made attractions for tourism on the Sarangani island.
5. EXPECTED EFFECTS :

Wider and appropriate use of renewable energy for rural electrification

Sarangani island as domestic and international tourism destination
6. PROJECT COSTS : ₱ 100 million
7. IMPLEMENTATION SCHEDULE :

| | | |
|---------|---|--|
| Phase 1 | : | Conceptual design of the renewable energy island, planning for geothermal exploration and installation of solar system |
| Phase 2 | : | Planning and implementation of other renewable energy development |
8. PROJECT DESCRIPTION :

Use of renewable energy is a promising option for rural electrification especially in remote rural areas, but exploitation as well as application of various forms of renewable energy is quite limited. More promising application sites are located in remote areas, where the availability of technology and equipment is most limited. The project is to establish a center for research and application of renewable energy in the remotest area in the DIDP Area.

The Sarangani island is most endowed with renewable energy potentials – plenty of sunshine closest to the equator, tidal wave surrounding the island, wind and geothermal potential. The establishment of the renewable energy island should be planned in line with the tourism development – another promising potential of the island. Geothermal potential should be explored to determine the reserve and alternative uses for tourism and energy development. A solar system may be installed relatively easily for immediate use, while other forms of renewable energy are examined and experimented such as wind, tidal wave, OTEC and biomass.

Solar powered refrigerator for vaccine would be installed in the hospital. Solar pumps and wind pumps will be considered for portable water supply and small irrigation.

Project No. IN-16

1. PROJECT TITLE : Demand Side Management (DSM) Program
2. LOCATION : DIDP Area
3. IMPLEMENTING AGENCIES : DOE, DTI, RECs
4. OBJECTIVES : To establish the energy-conserving society in the DIDP Area
5. EXPECTED EFFECTS :
Reduced energy use
Creation of new business
Change in life style
6. PROJECT COSTS : ₱
7. IMPLEMENTATION SCHEDULE : Phase 1 - Phase 3
8. PROJECT DESCRIPTION :

"Energy-saving" has already been a sales point of electric equipment/appliance in the Philippines, specially for middle class and more consumers. They mostly have color TV and refrigerator. Upper and upper middle class consumers mostly have air-conditioner/cooler. Energy conservation will be more important according to the progress of the DIDP development and increase in people's income.

Demand side management (DSM) of electricity comprises two programs, according to an example of DORECO.

- 1) Load management program (peak clipping, energy efficient technologies, load shifting and interruptable/ load management, encouragement of customers to use energy efficient technologies, and introduction of a time of use (TOU) for larger users); and
- 2) Compact fluorescent light program.

This program will put forward the DSM with the following components:

- Information and education campaign (IEC) for energy conservation, especially at schools;
- Encouragement of new business to produce energy-saving device, buildings with peak clipping systems like solar water heater and insulating structure, and other products while providing incentives; and
- Introduction of interruptable agreements between distribution companies and consumers.

This program will be implemented by respective agencies/organizations; the Department of Energy for IEC, DTI/DOF for giving tax incentives, and RECs for incentive price-setting to energy efficient users. In a long term future, mass transportation system like LRT is desirable for a demand side management of energy use as a whole.

Project No. IN 17

1. PROJECT TITLE : Eco-Energy Park Project
2. LOCATION : Davao del Sur
3. IMPLEMENTING AGENCIES : BOT power developer in cooperation with LGUs, and NPC
4. OBJECTIVES : To develop environment-friendly and socially acceptable energy park
5. EXPECTED EFFECTS : Formation of industrial complex
Conserved energy use
Up-graded quality of life/amenity
6. PROJECT COSTS : ₱
7. IMPLEMENTATION SCHEDULE: Phase 1 - Phase 2
8. PROJECT DESCRIPTION :

Two power plants (200 MW in 2001 and 300 MW in 2007) are proposed by NPC to be developed in Digos, Davao del Sur as BOT projects. These projects will meet a rapidly increasing demand of electricity, and ensure energy security of the DIDP Area which has only a power barge with 100 MW capacity against 193 MW power demand.

Thermal power plant using fossil fuels such as oil and coal tends to bring about air pollution by SO_x/NO_x, and to be partly conducive to the global warming due to CO₂ emission. Therefore, thermal power development projects have not always been implemented smoothly.

This Eco-Energy Park project will be implemented with the following components toward a successful development of the power plant projects:

- (1) To collectively locate the proposed power plants and energy intensive-industries such as oil refinery, cement factory, rolling mill with electric furnace etc. so that they can efficiently utilize energy and control pollution;
- (2) To organize an energy-use complex through utilizing waste heat discharged from above industries in neighboring areas such as residential area, industrial estate etc.;
- (3) To use co-generation technology to recycle part of the energy that has conventionally being wasted; the steam and hot water produced from the co-generation plant could be used in processing industries such as textile and food processing factories; and
- (4) To promote Demand Side Management in the Eco-Energy Park to facilitate the spread of the technology and to incubate Energy Service Companies using the park as a base for redesign of the factory floor for DSM purpose.

This Eco-Energy Park will be realized through a close coordination between the BOT developer, LGUs, NPC, and residents neighboring on the plant site. Aside from Digos proposed by NPC, there are candidate sites in the DIDP Area including the Malalag Bay. In any case, a comprehensive development plan of power plants should be widely accepted by the local people.

Project No. IN-18

1. PROJECT TITLE : SWIM Expansion Project
2. LOCATION : Small river basins especially in Davao del Sur, Davao Oriental, and Davao del Norte
3. IMPLEMENTING AGENCIES : LGUs
4. OBJECTIVES :
 - (1) To improve water availability in rural areas and small towns for various purposes; and
 - (2) To improve the management of small river basins.
5. EXPECTED EFFECTS :

More lively socioeconomies in rural areas and small towns

Improved quality of watershed

Reduction of damages by flash floods
6. PROJECT COSTS : ₱ 120 million
7. IMPLEMENTATION SCHEDULE :

Phase I (~ 2004) : Identification of sites and implementation of priority schemes

Phase II & III (2005 ~): Continued implementation
8. PROJECT DESCRIPTION :

The availability of water in some rural areas and small towns in the DIDP Area is constrained by peninsular, mountainous and rolling topography. Upper watershed areas of many small rivers have been degrading by improper land use and management. The program is to expand the application of Small Water Impounding Management with the view to increasing water availability and improving the upper watershed areas.

The SWIM stands for a scheme accommodating small scale dams with a height not more than 30 m and a storage water volume not exceeding 50 MCM. The SWIM in the DIDP Area is planned for multiple purposes including flood mitigation, irrigation, domestic water supply, and if applicable, hydropower generation, fish production and recreation. Each SWIM scheme should contain, as a component, the improvement of upper watershed areas.

Sites for the project will be selected by a set of criteria including geological and geographic characteristics, acuteness of various water-related problems and environmental conditions. Candidate sites may include the following:

- Davao del Sur : Blucon-Tacul, Bila-New Kapulian, Matanao-Padada, Mal river - Matanao, Balatukan river-Magsaysay, Upper Malinao-Padada
- Davao del Norte : Umboy-Samal island, Saug reservoir-New Corella, Panas spring
- Davao Oriental : Bitanagan river, Dumago-oc river, Bitagan river, Dapnan, Sumlog river, Tibanban
- Compostela Valley : Tandik-New Bataan

Community participation will play a vital role for the project through planning, implementation and monitoring.

Project No. IN-19

1. PROJECT TITLE : Water Resources Assessment and Monitoring System Reinforcement Project
2. LOCATION : Selected locations in the DIDP Area
3. IMPLEMENTING AGENCIES : DPWH, DENR, PAG-ASA, LGUs
4. OBJECTIVES :
 - (1) To reinforce the capacity for measurement and record of hydrological data; and
 - (2) To reinforce the capacity for the evaluation and management of water resources.
5. EXPECTED EFFECTS : Maximum and sustainable utilization of indigenous water resources
6. PROJECT COSTS : ₱ 100 million
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Feasibility study
 - Phase II : Implementation of urgent prioritized works
 - Phase III : Implementation of long-term items

8. PROJECT DESCRIPTION :

The DIDP Area is endowed with relatively ample water resources. However, the water balance between water potentials and water demands will become tight gradually with the development of the regional economy. Thus, cautious management for maximum and sustainable utilization of water resources is necessary throughout the DIDP Area, especially in major river basins.

At present, 13 run-off gauging stations, three meteorological observatories, and a few other observation stations are working in the DIDP Area. These facilities are far behind required standards in terms of quantity and quality.

Much investment is needed to reinforce the capacity of the measurement and evaluation of hydrological conditions (climate, surface water and groundwater regimes). The measurement will be conducted mainly in major river basins (Upper Agusan, Tagum-Libuganon, Davao and Padada rivers) and other prime principal river basins (Hijo river, Cuabo river etc.), including their prime tributaries.

The measurement and evaluation system to be introduced shall be selected from:

- Meteorological measurement (rainfall, temperature, sunshine etc.)
- River water gauging (run-off, water stage etc.)
- Groundwater assessment employing monitoring wells, and
- Water quality analysis, and data processing.

Observed results would be processed and managed by a sole responsible institution, and contribute to proper and multi-dimensional management of water resources. The project will be started by a feasibility study, followed by the implementation of urgent and prioritized schemes and then by long-term schemes.

The project aims at the improvement and reinforcement of a water resources assessment and monitoring system required for the measurement and evaluation of surface water, groundwater and other hydrological conditions in terms of both quantity and quality. The project will contribute also to realizing the independent management by water basins.

Project No. IN-20

1. PROJECT TITLE : Davao City Comprehensive Flood Control and Drainage Development Program
2. LOCATION : Urban center areas of Davao City
3. IMPLEMENTING AGENCIES : DPWH, Davao City
4. OBJECTIVES : To develop a better drainage system including the upgrading and rehabilitation of existing drainage structures and, if any, river control measures
5. EXPECTED EFFECTS : Prevention of flood-related hazard and creation of urban amenity
6. PROJECT COSTS : ₱ 700 million
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Master plan study including the review of past master plan and feasibility study
 - Phase II : First stage implementation
 - Phase III : Expansion
8. PROJECT DESCRIPTION :

Davao City is facing serious incidence and recurrence of land development-related flooding, which has caused undue inconveniences, health-related problems, and damages to citizens and properties. Outdated and insufficient urban drainage, and in some occasions, heavy silting of rivers in the basins are main causes. The city government has already initiated the "Master Plan Study of Davao City Urban Drainage and Flood Control" for the medium to the long-term drainage improvement for some 35,000 ha area, and the detail design for rehabilitation and upgrading of existing drainage system in 25 priority sites.

Project sites encompass the following three major drainage areas in the urban center of Davao City:

- Zone I : In the south, the areas covering Toril District along the alignment of Marapangi creek and portions of Tugbok and Calinan Districts (12,900 ha),
- Zone II : Along the alignment of Talomo river, covering the areas of Matina Pangi, Matina Aplaya, Langub, Ma-a and Talomo Proper (12,900 ha), and
- Zone III: Along the alignment of Davao river covering the areas of Poblacion, Agdao, Buhangin, Tigatto, Pampanga, Sasa and Panacan up to the alignment of Ilang river in the north (9,400 ha).

The project is to provide comprehensive measures, both structural and non-structural. Specifically the project will:

- Provide an extensive storm water drainage system and river control system,
- Minimize erosion and overbank flow of rivers and waterways, and effectively drain stormwater in the Poblacion and other urban areas, and
- Provide such run-off easements as plantation, planned land use and the promotion of rainwater infiltration.

A review of the Master Plan Study will be conducted by Davao City, followed by the second stage for immediate execution of priority schemes and then by the subsequent stage for other long-term works.

Project No. IN-20a

1. PROJECT TITLE : Urgent Drainage Rehabilitation Project
2. LOCATION : Urban center areas of Davao City
3. IMPLEMENTING AGENCIES : Davao City
4. OBJECTIVES :
 - (1) To implement the initial package of 25 priority schemes; and
 - (2) To review and implement additional priority projects for the rehabilitation and expansion of the existing urban drainage system identified in the on-going "Drainage Master Plan Study for the medium and long-term projects."
5. EXPECTED EFFECTS : To reduce submersion-related damages and create urban amenity
6. PROJECT COSTS : US\$ 15 million
7. IMPLEMENTATION SCHEDULE : Implementation starting from 1999 (two-year duration)
8. PROJECT DESCRIPTION :

Davao City is facing serious incidence and recurrence of land development-related flooding, which has caused undue inconveniences, health-related problems, and damages to citizens and properties. Outdated and insufficient urban drainage, and in some occasions, heavy silting of rivers in the basins are main causes. The city government already initiated the "Master Plan Study of Davao City Urban Drainage and Flood Control" which includes:

- detail design for rehabilitation and upgrading of the existing urban drainage system identified at 25 priority sites, and
- the Drainage Master Plan Study for the medium- and long-term projects in the subject drainage basins (some 35,000 ha) completed in the middle of 1998.

Although the city government earmarked ₱ 131 million out of the Land Bank loan to the city as local fund, this is not enough to enforce even the priority schemes for the short-term implementation.

The project aims directly to solve urgent problems of urban drainage in the center of Davao City, and consists primarily of:

- Comprehensive review of the on-going priority projects and "Drainage Master Plan Study for the medium and long-term projects",
- Conduct of field surveys and investigations including topographic, soil and geotechnical surveys at identified project sites,
- Detail engineering design and preparation of tender documents for the identified projects,
- Construction works containing the procurement of equipment and materials, site construction and installation works, site work management, etc. and
- Transfer of technology and project-related assistance to the city government.

Project No. IN-21

1. PROJECT TITLE : Flash-Flood Prevention Program
2. LOCATION : Selected locations along the principal rivers in the DIDP Area
3. IMPLEMENTING AGENCIES : LGUs
4. OBJECTIVES :
 - (1) To formulate comprehensive flood control measures for the principal rivers in the DIDP Area; and
 - (2) To implement the specified countermeasures for selected priority sites.
5. EXPECTED EFFECTS : Establishment of sound environment for socioeconomic and urban activities
6. PROJECT COSTS : ₱ 170 million
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Master plan study and feasibility study
 - Phase II : Implementation in the selected priority sites and priority works
 - Phase III : Implementation in other sites

8. PROJECT DESCRIPTION :

Rivers which accommodate relatively smaller catchment basins between 40 km² and 400 km² are classified as principal rivers in the Philippines. There are 22 principal rivers in total besides four major rivers in the DIDP Area and almost all of them contain flood-prone areas with the occurrence of habitual flood-related calamities.

Generally, a steep land slope and heavy silting of river beds and increased run-offs caused by deforestation contribute to the outbreak of flash floods in case of heavy rains. Though some principal rivers are equipped with partial measures currently, they cannot offer substantial solution to the problem.

The program will cover the following rivers, including their tributaries in some cases:

- Davao Oriental : Sumlong, Baguang, Quinaman, Baguian, Casuman, Manay, Caraga, Lanunayao, Baganga, Dapnan, Cateel
- Davao del Norte : Rivers affecting Dujali, Carmen, Tagum, Sto. Tomas
- Compostela Valley : Kingking
- Davao City : Lim Dan, Talomo, Tagonol, and
- Davao del Sur : Margus, Tabayon, Murabatuan, Culman, Calian, Siblan

The program will be phased into the short-term and the long-term. In the short-term, urgent alleviation using structural measures like dike construction, short-cut channel construction, etc. as well as the establishment of warning system will be undertaken primarily to protect built-up areas, arterial roads and main bridges. Subsequently, the restoration of water retarding capacity in water basins by reforestation and other suitable measures will follow.

Project No. IN-22

1. PROJECT TITLE : Davao City Water Supply System Development Project
2. LOCATION : Davao Metropolitan Area, i.e. urban centers of Davao City (Poblacion, Talomo, Buhangin, Toril etc.) and its vicinity areas
3. IMPLEMENTING AGENCIES : LWUA, DCWD and LGUs
4. OBJECTIVES :
 - (1) To meet the increasing water demand for domestic, industrial, and other uses; and
 - (2) To avoid the environmental problems caused by excessive groundwater extraction.
5. EXPECTED EFFECTS : Reliable water supply system for urban, industrial, commercial and other activities.
6. PROJECT COSTS : ₱
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Master plan study including feasibility study
 - Phase II : Implementation
8. PROJECT DESCRIPTION :

Davao City has a Level III water supply system covering some 60% population, at present. It is expected to expand and become effectively the Davao Metropolitan Area (DMPA) in the future, including Panabo and Samal in Davao Province, and Sta. Cruz in Davao del Sur. It will also accommodate a core industrial zone. Thus, massive expansion of water supply system is a prerequisite for the sustainable development in the area.

At present, groundwater is almost the sole raw water source of the Davao City water supply system. Given that the current groundwater use in Davao City has already exceeded far beyond its water potential, continuing dependency on groundwater raises concerns on possible ground subsidence and related problems. Accordingly, the development of reliable surface water source for future expansion is called for.

The establishment of enlarged DMPA water supply system is proposed, covering Poblacion, Talomo, Agdao, Buhangin, Bunawan, Calinan, Toril, Tugbok, etc. The service population in the DMPA is estimated at 900,000 people and the water demand including domestic, industrial, commercial and other uses will total 420,000 m³/day in 2016. To meet the water demand, the step-wise expansion of water supply facilities is necessary, consisting of water conveyance pipes, transfer pumps, water reservoirs, distribution pipes and other appurtenances.

The increasing water demand will not allow for Davao City to depend only on groundwater as water source, because continuing groundwater extraction possibly causes serious ground subsidence along with property damages, expansion of submersion areas, groundwater contamination, etc. Accordingly, surface water utilization will be inevitable in the DMPA. The introduction of surface water purification facilities is essential to provide for safe water supply at the same time. The Davao Water District is studying a dam construction project, which will take raw water from a tributary located in the upstream of the Davao river.

Project No. IN-23

1. PROJECT TITLE : Integrated Water Supply Systems Development Project
2. LOCATION : Larger urban centers in the DIDP Area including PAIC related municipalities alliances
3. IMPLEMENTING AGENCIES : LWUA, Water Districts and LGUs
4. OBJECTIVES :
 - (1) To expand water supply capacity in cost-effective way to meet rapidly increasing demand; and
 - (2) To avoid the environmental problems caused by excessive groundwater extraction.
5. EXPECTED EFFECTS :

Reliable water supply to support the economic development and urbanization.

Optimal conjunctive use of surface water and groundwater both economically and environmentally.
6. PROJECT COSTS : P
7. IMPLEMENTATION SCHEDULE :

| | | |
|----------------------------|---|--|
| Phase I | : | Master planning and feasibility study for the Panabo-Tagum conurbation area and the Sta. Cruz-Digos urban corridor, followed by initial implementation |
| Phases II & III: Expansion | | |

8. PROJECT DESCRIPTION :

All the existing Level III water supply systems in urban areas of the DIDP Area serve single municipalities, respectively. As water balance becomes tight with rapidly increasing population in larger urban centers, an integrated water supply system would become more cost-effective to serve neighboring municipalities together. Opportunities for such a system will expand as main water sources are switched from groundwater to surface water.

Integrated water supply systems may be introduced first to the Tagum-New Corella area and the Sta. Cruz-Digos urban corridor area. The service population for the former is estimated at 600,000, and the water demand may total 60,000 m³/day in 2016. The Tagum Water District has conducted an initial survey and study and identified the Panas falls in New Corella as a viable source. The service population for the latter is estimated at 300,000, and the water demand at 70,000 m³/day in 2016. Water sources may be the Cebulan or the Padada rivers. These systems will be managed by inter-municipality water districts.

The project will be expanded to cover other urban areas. The same idea of integrated water supply system may apply to a group of smaller settlements as well, if they can identify common water sources. Candidate areas for the expanded application include: Padada-Sulap-Malalag in Davao del Sur, Dujali-Sto Tomas and Tagum-New Corella in Davao del Norte, Banay Banay (Davao Oriental)-Lupan-Pantukan in Compostela Valley, and settlements in San Isidro, Davao Oriental.

Project No. IN-23a

1. PROJECT TITLE : Tagum-Panas, New Corella Integrated Water Development Project
2. LOCATION : Tagum City and New Corella, Davao del Norte
3. IMPLEMENTING AGENCIES : LWUA, Tagum Water District and LGUs of Tagum City and New Corella, Davao del Norte
4. OBJECTIVES :
 - (1) To provide sufficient and quality potable water supply to more or less 230,000 constituents of Tagum City and New Corella, Davao del Norte;
 - (2) To supply the industrial water requirement of the main Tagum PAIC site (Apo Estates Agro-Industrial Project) at Madaum, Tagum City;
 - (3) To avoid environmental and health related problems caused by the excessive ground water extraction;
 - (4) To convert Panas falls into a community-based ecotourism destination; and
 - (5) To preserve and protect the watershed areas within Panas falls, New Corella.
5. EXPECTED EFFECTS :

Reduce or minimize water related-borne diseases

Assure adequate and quality drinking water supply for Tagum City and New Corella residents

Ensure adequate industrial water requirement for the main PAIC site at Madaum, Tagum City

Generate employment opportunities for the people within the proposed Panas falls ecotourism

Preserve and protect the watershed area within Panas falls, New Corella
6. PROJECT COSTS : ₱ 900 million (₱ 850 million for the potable water supply system while ₱ 50 million for Panas falls community based ecotourism and watershed preservation and protection)
7. IMPLEMENTATION SCHEDULE : 1999 - 2003
8. PROJECT DESCRIPTION :

Tagum City was recently converted from a first class municipality into a component city by virtue of RA 8472 which was ratified by its constituents last March 7, 1998. Just like any rapidly urbanizing center, Tagum City to date is experiencing water shortage for domestic and industrial needs. Record shows that only 57.3% of 14,962 households out of around 26,098 households were being served by Tagum Water District (TWD). The demand for water is expected to rise because of the continuous population growth and the eventual industrial water requirement of the main Tagum PAIC area at Madaum which is the 700 ha Apo Estates Agro-Industrial Project.

Per evaluation of the Tagum Water District, extraction of underground water within Tagum itself is no longer feasible because of water depletion and salt water intrusion. Based on the initial survey and study of TWD, it came out that the most viable and potential good source of water for both

domestic and industrial users is the Panas falls at New Corella. The source is approximately 23 km from Tagum City.

At present, negotiation between the TWD, City Government of Tagum and the Municipal Government of New Corella is on the pipeline to finalize the detailed pre-feasibility study of the project.

Alongside with the main water supply system development projects is the proposed community-based ecotourism project at the Panas falls site in New Corella including the preservation and protection of its watershed area. This shall be incorporated also in the aforesaid pre-F/S. The former shall be implemented by TWD while the later two projects shall be implemented by the LGU of New Corella.

Project No. IN-23b

1. PROJECT TITLE : Water Supply Upgrading and Expansion in Sta. Cruz-Digos Urban Corridor Area
2. LOCATION : Larger urban Areas of Sta. Cruz-Digos Urban Corridor Area in Davao del Sur
3. IMPLEMENTING AGENCIES : LWUA, Concerned Water Districts and LGUs
4. OBJECTIVES :
 - (1) To meet the increasing water demand for domestic and industrial, and other uses; and
 - (2) To avoid the environmental problems caused by excessive groundwater extraction.
5. EXPECTED EFFECTS : Reliable water supply system for urban, industrial, commercial and other activities.
6. PROJECT COSTS : P
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Master plan study including feasibility study
 - Phase II : Expansion
8. PROJECT DESCRIPTION :

The urban area between Sta. Cruz to Digos has Level III water supply systems covering some 4% to 35% population, at present. It is expected to form a large-scale urban zone in the future, adjoining the Davao Metropolitan Area. It will also accommodate a core industrial zone. Thus, massive expansion of water supply system is a prerequisite for the sustainable development in the area.

At present, groundwater is the only raw water resource of the existing water supply systems. Given that the current groundwater utilization in Sta. Cruz and Digos has already reached a high level as compared with the potential, the continuing dependency on to groundwater may cause serious ground subsiding and related problems. Accordingly, the introduction of surface water will become inevitable.

The organization of expansive Sta. Cruz-Digos Urban Corridor water supply system is proposed, covering Sta. Cruz and Digos. The service population is estimated at 300,000 people and the water demand including domestic, industrial, commercial and other use may total 70,000 m³/day in 2016. To meet the water demand, the step-wise expansion of water supply facilities is necessary, consisting of water conveyance pipes, transfer pumps, water reservoirs, distribution pipes and other appurtenances.

A study should be undertaken to identify the dependable river, such as the Cebulan river or the Padada river, and a suitable intake site of surface water. Together, special attention should be paid to assure water balance in relation to large irrigation water demand in and around the area.

This project will be managed by the inter-municipality water district. It will be started by the master plan study including the feasibility study, followed by the implementation step by step.

Project No. JN-24

1. PROJECT TITLE : Rural Water Supply and Sanitation Improvement Program
2. LOCATION : Selected barangays in the prioritized municipalities
3. IMPLEMENTING AGENCIES : DILG, DPWH, PHO, LGUs and NGOs
4. OBJECTIVES :
 - (1) To provide selected rural barangays in the prioritized municipalities with safe water supply and sanitary toilets; and
 - (2) To ensure the proper usage and maintenance of sanitation equipment, and disseminate health and sanitation knowledge in rural areas.
5. EXPECTED EFFECTS : Enhanced rural health and sanitation.
6. PROJECT COSTS : ₱ 560 million
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Basic plan and design
 - Phase II : Implementation
8. PROJECT DESCRIPTION :

Safe water supply and sanitation constitute an important part of the Minimum Basic Needs (MBN), which is not adequately satisfied in many rural communities in the DIDP Area deprived of safe drinking water and sanitation facilities. Some 39% of people are forced to unreliable water not protected from contamination. Especially in rural areas, the unserved ratio by safe water is much higher and prevalence of sanitary toilets is far behind. According to 1997 data, Davao del Sur (66.8%) and Davao Oriental (65.4%) have lower rates of households with sanitary toilets. While Davao City has the highest rate of 82.3%, sanitary facilities in squatter areas are still inadequate. Such poor sanitation results in high incidence of water-born and vector-born diseases and becomes one of undermining causes for high mortality in rural areas.

The program aims to provide a set of Level I water supply systems by well and pour-flash type sanitary toilet for selected barangays in the prioritized municipalities for water supply. The subject municipalities ranked by the methodology based on "MBN scheme" for water supply and their served population numbers are listed as follows:

- Davao Oriental : Caraga, Manay, Cateel, San Isidro, Lupon, Tarragona, Boston, Baganga (total 38,000 capita);
- Davao del Norte : Tagum, Garden Island City of Samal, Panabo, Dujali;
- Compostela Valley : Monkayo, Laak; and
- Davao del Sur : Don Marcelino, Sulop (total 14,000 capita).

The program requires in total 1,450 sets of wells and sanitary toilets. Besides miscellaneous materials for construction, the following construction equipment is required for the implementation period of ten year: rotary/percussion drillings rigs (14 units), well rehabilitation equipment (six units), and support vehicles (six units).

The program may be expanded to cover upland communities especially in Davao del Sur, Compostela Valley and Davao Oriental. Development of springs is an important option in those upland areas.

A Municipal Water and Sanitation Association or cooperative will manage and oversee the construction works. Together, it is proposed that a Barangay Sanitary Inspector Association (BSIA) be organized to ensure the proper usage and maintenance of sanitation equipment, and disseminate health and sanitation knowledge.

Broad-based and intensive community participation through every stage of planning, construction and operation/maintenance is an important prerequisite for the program.

The NGO consortium has identified some barangays in Davao Oriental and Davao del Sur for the initial implementation by NGO/PO participation. Barangays prioritized in Davao Oriental are Tagugpo in Lupon, Sanghay in Mati, Mahayag in Banaybanay, Maputi and La Union in San Isidro, and Manuel Roxas in Gov. Generoso.

Project No. IN-25

1. PROJECT TITLE : Davao City Sewerage and Sanitation Development Project
2. LOCATION : Urban center areas of Davao City
3. IMPLEMENTING AGENCIES : Davao City government, Davao City Water District
4. OBJECTIVES :
 - (1) To better urban sanitation and prevent the water pollution by the introduction of sewerage system; and
 - (2) To initiate a complete set of wastewater treatment in the region.
5. EXPECTED EFFECTS : Enhanced sanitation, water environment and urban amenity.
6. PROJECT COSTS : ₱
7. IMPLEMENTATION SCHEDULE :
 - Phase I : _ Master plan study and feasibility study
 - Phase II : First stage works including a pilot work
 - Phase III : Long-term works implementation

8. PROJECT DESCRIPTION :

The DIDP Area has no sewerage system at present. Some high-class residential subdivisions have centralized sewage collection system but it is equipped with no sewage treatment facilities. Sewage, generated from households, commercial and institutional entities as well as most of manufacturing industries, is disposed to simple septic tanks and afterward discharged into the river courses via storm drainage without actual purification.

The rapid deterioration of the water receiving bodies in urban centers, due to the very significant pollution caused by untreated sewage makes it imperative that an effective sewerage system be constructed to safeguard the health of residents and ensure the water environment and the urban amenity.

The project will cover the following areas divided into three Divisions in the urban center of City:

- Southern Division: In the south, the Division covers some 12,900 ha areas with total 260,000 people in 2016 in Toril District and portions of Tugbok and Calinan Districts,
- Central Division : Along the Talomo river, the Division covers some 12,900 ha areas with total 370,000 people in 2016 in Talomo District, and
- Northern Division: Along the Davao river, the District covers some 9,400 ha areas with total 700,000 people in Poblacion District, Agdao District and portions of Buhangin and Bunawan Districts.

In respective Divisions, densely populated areas are served by a piped sewerage system and sparsely populated areas by an individual advanced septic system. Each Division has a complete set of wastewater treatment plant with total capacity of some 290,000 m³/day in 2016 and treated sewage discharged into the Davao Gulf through the rivers nearby.

The project will be started with a master planning study including a feasibility study for priority schemes, the implementation of the first stage zones to serve as pilot works, and the subsequent expansion in steps toward 2016.

Project No. IN-26

1. PROJECT TITLE : Water Conservation and Recycling Program
2. LOCATION : Davao City
3. IMPLEMENTING AGENCIES : Davao City and DCWD
4. OBJECTIVES
 - (1) To carry out the education and information dissemination for water saving awareness and techniques; and
 - (2) To construct sewage reclamation facilities, and provided a reclaimed water supply.
5. EXPECTED EFFECTS : Attainment of water, energy and natural resources saving.
6. PROJECT COSTS : ₱
7. IMPLEMENTATION SCHEDULE :
 - Phase I : Master plan study including feasibility study
 - Phase II : Implementation
8. PROJECT DESCRIPTION :

The water balance analysis has identified that massive water demand for households, industries, etc. would cause significant tight relation between groundwater potential and demand toward 2016 in certain centers of the DIDP Area such as urbanized areas of Davao City, Panabo, Tagum, Digos and Sta. Cruz. Among them, the urban center of Davao City may experience impending situation in the near future with drying up of groundwater, ground subsiding and sea water intrusion. Therefore, it will become crucial to convert water sources from groundwater to surface water in the urban center of Davao City. Besides this, water resources saving scheme is to be introduced.

For the purpose of water saving, the reclamation and recycling of wastewater from households, commercial entities and industries are proposed as long-term measures. Together, a series of IEC activities should be undertaken to enhance water users' awareness for water saving in both domestic water and industrial water.

The program will encompass the following wide-ranging components:

- Dissemination and instruction of techniques and technology for water saving. This will take place for all kinds of water consumers such as households, institutional and business entities, and industries. The involvement of communities and NGOs is an important prerequisite for this portion of the programs,
- Construction of sewage reclamation facilities. The reclamation plant will be installed in one of the three Davao sewage treatment sites proposed. This will be designed to produce some 10,000 m³/day reclaimed water at the beginning, using treated urban sewage. The facilities will consist of rapid settling, rapid sand filtration, disinfection, transfer system and other appurtenances, and
- Introduction of user changes. The reclamation facilities will produce reclaimed water to be used for industrial factories and buildings as low-grade water, green-keeping water, etc. The cost for construction and operation of the facilities will be covered by the water charge from reclaimed water consumers.

The installation of sewerage system in Davao City is the precondition of the program. The program will start by a master planning study including a feasibility study, followed by implementation.

Project No. IN-27

1. PROJECT TITLE : PAIC Support Infrastructure Program
2. LOCATION : Baganga, Mati, Nabuntural, Tagum, Panabo, Sta. Cruz, Malita, Malalag
3. IMPLEMENTING AGENCIES : LGUs – municipalities alliances
4. OBJECTIVES :
 - (1) To develop PAICs as focal points of the DIDP agri-industrialization drive; and
 - (2) To improve living conditions of PAIC urban areas and their rural hinterlands
5. EXPECTED EFFECTS : Higher income and better living conditions due to viable economic activities and improved infrastructure facilities
6. PROJECT COSTS : ₱ 2,010 million
7. IMPLEMENTATION SCHEDULE : Continuous implementation through 1994 - 2016
8. PROJECT DESCRIPTION :

Provincial agri-industrial centers (PAICs) represent the local initiative to establish viable economic activities by utilizing indigenous resources. The PAIC initiative is considered instrumental in developing the DIDP Area as a whole under the agri-industrialization strategy. PAICs are expected to develop in a mutually complementary manner, each having characteristic activities based on indigenous resources.

The program is to improve various infrastructure facilities for seven PAICs and the Malita Special Economic Zone to support their developments. Specific support infrastructure for each PAIC or SEZ would be different such as port, farm-to-market roads, water supply, solid waste management and electricity. Some infrastructure may be improved under different programs. In particular, the following projects may be implemented:

- (1) PAIC – related Port Development Project for Mati, Baganga, Maco, Malalag and Sta. Cruz, and
- (2) PAIC – related Farm-to-Market Roads Project, and
- (3) PAIC Urban Center Drainage Improvement Project.

Most existing farm to market roads without pavement and road-side ditch have being suffered to deteriorate the road condition due to lack of maintenance and rehabilitation. The farm-to-market road shall include rehabilitation and routine maintenance activities together with new road construction. Some those activities will be completed by local populace as self-help work.

Project No. IN-27a

1. PROJECT TITLE : PAIC-related Port Development Project
2. LOCATION : Malalag, Sta. Cruz (Davao del Sur), Mati, Baganga (Davao Oriental), Maco (Compostela Valley), Hijo (Davao del Norte)
3. IMPLEMENTING AGENCY : PPA, relevant municipalities, PAIC, the private sector
4. OBJECTIVES :
 - (1) To improve or construct feeder ports of Davao Port;
 - (2) To establish coastal shipping routes as alternative means of good transport within the DIDP Area; and
 - (3) To promote PAIC development.
5. EXPECTED EFFECTS : Promotion of potential for economic activities, especially in commodity movement
6. PROJECT COSTS : ₱ 350 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 2
8. PROJECT DESCRIPTION :

The project intends to improve or construct a number of ports located at major coastal municipalities designated as the PAIC center or special economic zone. Facilities of berths, cargo handling equipment and yard areas should improved to accommodate increasing agricultural products and general cargoes in the Area. The upgraded ports are expected to play the role of feeder function of Davao Port as well as to promote the establishment of coastal shipping route network in the DIDP Area. Further, maritime navigation aids and communication facilities should be modernized.

The feeder ports should be open to all public use and all types of commercial cargoes could be accommodated. Port management should be organized by municipality in cooperation with the PAIC to promote coastal shipping service to consignors, consignees and forwarders.

The location of feeder ports was tentatively identified as below.

- 1) Mati, Davao Oriental (existing PPA terminal port)
- 2) Malalag, Davao del Sur (existing municipal port)
- 3) Baganga, Davao Oriental (existing commercial ports of Norcamco wharf if possible)
- 4) Sta. Cruz, Davao del Sur (new construction)
- 5) Maco, Compostela Valley (new construction)
- 6) Hijo, Davao del Norte (upgrading and expansion)

Project No. IN-27b

1. PROJECT TITLE : Tagum City Outermost Circumferential Farm-to-Market Road Project
2. LOCATION : Tagum City, Davao del Norte
3. IMPLEMENTING AGENCY : City government of Tagum
4. OBJECTIVES :
 - (1) To open outermost circumferential farm-to-market road which will lead to Tagum Public Market and Tagum PAIC main site at Madaum, Tagum City otherwise known as the Apo Estates Agro-Industrial Project;
 - (2) To ease traffic congestion within the primary thoroughfares; and
 - (3) To provide alternative road network to commuters and the general public.
5. EXPECTED EFFECTS :

Farmers will be encouraged to produce more crops as well as high valued fruits

Provide convenience to the farmers in bringing their produce to the market outlet and in the processing area

Expand economic activities
6. PROJECT COSTS : ₱ 150 million
7. IMPLEMENTATION SCHEDULE : 1999 - 2003
9. PROJECT DESCRIPTION :

The lack of infrastructure has become one of the perennial problems not only by the farmers but also by the would be investors and the general public. The City government of Tagum has proposed in its land use plan an outermost circumferential farm-to-market road with a total length of more or less 25 km primarily to ease traffic congestion in the existing main road artery as well as to provide alternative road for farmers in bringing their produce to the Tagum Public Market, Livestock Auction Center and in the processing center at Madaum, Tagum City which is the main Tagum PAIC site.

With the continuing growing population of Tagum City and the expected economic boom specially so once the major Tagum PAIC site at Madaum (Apo Estates Agro-Industrial Project) will be in its full blast operation, there is a need therefore, to develop more farm to market road that will serve efficient movement of people and products in the area.

Project No. IN-27c

1. PROJECT TITLE : Tagum City Comprehensive Drainage System Project
2. LOCATION : Tagum City, Davao del Norte
3. IMPLEMENTING AGENCY : City government of Tagum
4. OBJECTIVES :
 - (1) To upgrade the drainage system within the urban center and the main Tagum PAIC site at Madaum, Tagum City; and
 - (2) To minimize water-borne diseases.
5. EXPECTED EFFECTS :

Resolve perennial flooding problem within the urban center

Improve drainage system within the LGU

Improve health and sanitation
6. PROJECT COSTS : ₱ 80 million
7. IMPLEMENTATION SCHEDULE : Phase 1 – Phase 2
10. PROJECT DESCRIPTION :

Tagum City was recently converted from a first class municipality into a component city by virtue of RA 8472 which was ratified by its constituents last March 7, 1998. Attributed mainly to its limited resources, the perennial problem of flooding specially within the urban center is still the headache of the local officials.

The proposed project therefore, aims to resolve the perennial problem of flooding by having a comprehensive drainage system not only within the urban center of Tagum City but also in the "off-site" drainage system of the main Tagum PAIC site at Madaum where the Apo Estates Agro-Industrial Project will soon be established.

Project No. JN-28

1. PROJECT TITLE : Service Urban Centers Strengthening Project
2. LOCATION : Compostela, Monkayo, Kapalang, Maco, Calinan, Bansalan, Jose Abad Santos, Manay, Cateel
3. IMPLEMENTING AGENCY : LGUs
4. OBJECTIVES :
 - (1) To improve the delivery of social and other services to remote rural areas by strengthening service urban centers; and
 - (2) To vitalize socio-economies of service urban centers and their hinterland rural areas and integrate them into the DIDP socio-economy.
5. EXPECTED EFFECTS : Complete satisfaction of MBNs even in remote rural areas
6. PROJECT COSTS : ₱ 105 million
7. IMPLEMENTATION SCHEDULE : Start implementation in Phase 1 from service urban centers in farthest areas
8. PROJECT DESCRIPTION :

The DIDP Area, due to its topographic conditions and enclave type rural economies, has many rural areas difficult to reach and thus deprived of basic services. Given resource constraints, service delivery to these remote rural areas may be improved most effectively by strengthening service urban centers at a lower tier of the DIDP urban hierarchy.

The project will improve urban facilities and services in service urban centers to facilitate service delivery for respective rural hinterlands. A set of facilities and services to be improved may be different depending on particular urban centers and their hinterlands. Two common components are (1) citizens' hall complex including multi-purpose hall, accommodations, broadcasting studio, recreation facilities, and some social facilities such as day care/day center, and (2) multi-purpose information network to transmit a variety of information on health, education and training opportunities, community activities, and marketing. The citizens' hall complex may be annexed to existing municipal hall or built separately.

Project No. JN-29

1. PROJECT TITLE : Comprehensive Housing Program
2. LOCATION : Davao City and other major urban centers in the DIDP Area
3. IMPLEMENTING AGENCIES : DIDP PMO, National Housing Authority (NHA) and the private sector
4. OBJECTIVES :
 - (1) To provide adequate and affordable housing units for all;
 - (2) To minimize squatter areas through slum upgrading and sites and services; and
 - (3) To initiate a housing financial entity and a public rental housing project.
5. EXPECTED EFFECTS :

Sustainable housing development

Improved housing delivery system for the low to middle income class families

Rationalization of land use and town planning

Integration of environmental concern in planning and development.
6. PROJECT COSTS : ₱ 2,300 million
7. IMPLEMENTATION SCHEDULE :

| | | |
|-------------------|---|---|
| Phase I (-2000) | : | Implementation of feasibility study and institutional development |
| Phase II (2001-) | : | Project implementation in Davao City and Tagum City |
| Phase III (2004-) | : | Project implementation in other major urban centers |
8. PROJECT DESCRIPTION :

Shelter planning had primarily been the responsibility of national government agencies until the passage of the Local Government Code of 1991 (R.A. 7160) and the Urban Development and Housing Act (R.A. 7279). These laws transferred to LGUs more responsibilities pertaining to land use, housing and infrastructure development in their respective localities. LGUs have become the principal implementing bodies with regard to shelter needs together with NHA.

There are 89 squatter colonies inhabited by 31,853 in 1992 along the shorelines, river banks, road right-of-way, government lands and private lands in Davao City with unacceptable housing units, made of light materials such as barong-barong. The number of sub-standard units including double-up households are estimated at 35,289 units as backlog. The total housing demand of Tagum City is estimated at 10,100 units including substandard units, unacceptable units and double-up households. Other major towns in the DIDP Area have more or less the same situation. Especially, more serious problems occur to marginal income families and the urban poor in urbanized barangays.

In accordance with recent increase in urban population due to immigration in Davao City and other major towns, the above trend is accelerating in urban areas. However the clear rationalized land use and town planning and the shelter development policy have not been formulated yet.

The program is to analyze present housing conditions, formulate development policy, strategy and plan, conduct economic and financial analyses, prepare implementation plans, and implement proposed programs. For the sustainable housing development, housing cooperatives and finance entity shall be examined including public rental housing programs.

Project No. IN-30

1. PROJECT TITLE : Samal Island Integrated Area Development Project
2. LOCATION : Island Garden City of Samal, Davao del Norte
3. IMPLEMENTING AGENCY : Island Garden City of Samal, Davao del Sur Province, DOT
4. OBJECTIVES :
 - (1) To prepare an integrated area development plan for Island Garden City of Samal to clarify functional division with other parts of the DIDP Area;
 - (2) To allocate key facilities, and prepare a land use plan especially for tourism development; and
 - (3) To strengthen law enforcement on the tourism and urban development in the city.
5. EXPECTED EFFECTS :

Promoting tourism development expanding eco-tourism zone

Protection of environmentally sensitive areas

Generating employment opportunities
6. PROJECT COSTS : ₱ 112 million
7. IMPLEMENTATION SCHEDULE : 1999 - 2000
8. PROJECT DESCRIPTION :

The study aims to prepare a comprehensive development plan for newly established Island Garden City of Samal with special emphasis on the tourism sector. The Samal island is designated by DOT as the only one national priority development area in Mindanao.

The study should cover a land use plan including new zoning ordinances, multi-transport development plan, social development, basic infrastructure development and environmental management and institutional arrangements.

The project comprises the following:

- to analyze present conditions on land use, housing, urban infrastructure and social services,
- to identify present problems/development issues,
- to formulate development scenario and strategy especially for tourism development,
- to formulate district plans,
- to formulate a multi-modal transport network, and
- to establish new zoning ordinances.

Project No. IN-31

1. PROJECT TITLE : Sta. Ana, Bolton and Davao River Waterfront Development Project
2. LOCATION : Sta. Ana wharf area, barangay Bolton and left bank of Davao river, Davao City
3. IMPLEMENTING AGENCIES : Davao City and the private sector
4. OBJECTIVES :
 - (1) To create comfortable waterfront areas, the first of the kind in Davao City, with commercial, tourism and cultural facilities;
 - (2) To strengthen port functions through the development of port and commercial facilities complex; and
 - (3) To induce urban renewal of densely populated areas.
5. EXPECTED EFFECTS :

Upgraded image of Davao City as an international tourism gateway

High grade urban amenity for residents and visitors

More orderly and human-oriented urbanization
6. PROJECT COSTS : ₱ 11,990 million
7. IMPLEMENTATION SCHEDULE :

| | | |
|----------------------|---|---|
| Phase I (~2000) | : | Feasibility study for phased development with preliminary engineering and marketing |
| Phase II (2000-2004) | : | First stage development with urban renewal and socialized housing |
| Phase III (2005~) | : | Subsequent development |
8. PROJECT DESCRIPTION :

The project consists of two components: (1) Bolton and Davao River Waterfront Development (Project No. IN-31a), and (2) Sta. Ana Wharf Area Development (Project No. IN-31b). Both components will be implemented in stages over some 10 year period. A prerequisite for the first component is urban renewal of densely populated areas with squatters. Socialized housing may be required to relocate squatters and make rooms for the waterfront development. Limited reclamation may be undertaken to increase development area. The proposed coastal road will expand opportunities for further urban renewal and additional land reclamation.

Project No. IN-31a

1. PROJECT TITLE : Bolton and Davao River Waterfront Development Project
2. LOCATION : Barangay Bolton and left bank of Davao river, Davao City
3. IMPLEMENTING AGENCIES : Davao City and the private sector
4. OBJECTIVES :
 - (1) To create modernized urban area accommodating shopping center, conference facility, and high-rise hotels;
 - (2) To provide recreational facilities such as fisherman's wharf, park amusement park, museum, aquarium and swimming pool; and
 - (3) To formulate green network from Magsaysay park to Davao City hall/San Pedro Cathedral.
5. EXPECTED EFFECTS :

Proceeding green network formulation in the urban areas of the DIDP area as a show case

Creating urban amenity and improvement urban environment
6. PROJECT COSTS : ₱ 7,340 million
7. IMPLEMENTATION SCHEDULE :
- 8 PROJECT DESCRIPTION :

As a predominant destination of international tourism and direct investment in the BIMP-EAGA cooperation and an international gateway serving regional hub in the Mindanao, the amenity core shall be created in the water-front area of Bolton in Davao City. An area of about 150 ha may be developed for conference facilities, hotels, shopping center, fishermen's wharves, commercial buildings, amusement facilities and parks. A left river-bank of the Davao river from the mouth to the Davao bridge will be converted to green area including commercial building, restaurants and hotel. The coastal road and a few north-south access roads will be connected with the reclamation area.

The project composed of the following:

- to investigate and analyze present condition of the ashore area and the coastal area;
- to conduct marketing study;
- to propose development plan;
- to conduct economic and financial analysis;
- to make implementation plan;
- to implement reclamation work; and
- to construct proposed facilities.

Project No. IN-31b

1. PROJECT TITLE : Sta. Ana Wharf Area Development Project
2. LOCATION : Sta. Ana Wharf, Davao City
3. IMPLEMENTING AGENCIES : Davao City, Department of Tourism (DOT) and Philippine Ports Authority (PPA)
4. OBJECTIVES :
 - (1) To improve port facilities;
 - (2) To develop marina; and
 - (3) To develop commercial building and seafront restaurants.
5. EXPECTED EFFECTS :

Promoting development of tourism resort in Samal

Enhancement of the competitiveness of Davao City as a leading MICE (meeting, incentive, convention and event) destination in the BIMP-EAGA

Improvement of commuter passengers to Davao City

Creating modernized urban amenity.
6. PROJECT COSTS : ₱ 4,650 million
7. IMPLEMENTATION SCHEDULE :

Phase 1 (-1999) : Engineering study and marketing study

Phase 2 (2000-2004) : Implementation

8. PROJECT DESCRIPTION :

The Sta. Ana wharf plays an important role as a gateway to Samal island. The wharf has been handling almost constant volume of cargoes, and the number of the passengers also stayed at about 200,000 per annum during 1990 to 1995. A survey result by PPA indicates that most passengers were residents in the Samal island and only 10% of the passenger were for tourism purposes.

The Samal island and Mt. Apo are identified as primary tourism destinations in the National Tourism Master Plan. According to the plan, the annual growth rate of tourist arrivals to the Samal island is projected at 8% per annum. In this context, the Sta. Ana wharf should be improved into more attractive facilities including marina, commercial building and fisherman's wharf developments.

The project composes of the following:

- to survey/investigate to existing facilities and the project area
- to review the future demand;
- to analyze marketing study of commercial developments;
- to make detailed development plan;
- to analyze economic and financial evaluation;
- to make implementing plan; and
- to implement the projects.

Project No. IN- 32

1. PROJECT TITLE : New Towns Development Project
2. LOCATION : Sta. Cruz, Panabo, Davao City
3. IMPLEMENTING AGENCIES : Davao del Sur province, Sta. Cruz municipality, Davao City, Davao del Norte province, Panabo municipality, DPWH, NHA, DOTC, DTI
4. OBJECTIVES :
 - (1) To guide the urbanization centering around Davao City and realize more orderly urbanization patterns; and
 - (2) To generate sizeable employment opportunities close to residential areas but outside the existing urbanized areas.
5. EXPECTED EFFECTS :

More orderly urbanization with better provision of urban facilities

More comfortable urban life
6. PROJECT COSTS : ₱ 354 million for the master planning
7. IMPLEMENTATION SCHEDULE :

| | | |
|-----------------------|---|--|
| Phase I (-2000) | : | Preparation of Master Plan with staged development schemes |
| Phase II (2000-2004): | : | Land preparation for first stage development |
| Phase III (2005-): | : | Implementation of first stage development |
| Phase IV (2011-): | : | Further development |

8. PROJECT DESCRIPTION :

Davao City had urban population of 772,000 in 1995, accounting for 57% of the total DIDP urban population, 1,361,500 in 1995. The urban population in the DIDP Area is projected to increase at an average rate of 3.64% per annum to reach 2,883,000 by 2016. The existing urbanized areas of Davao City are already densely built up. While the density can be further increased by urban renewal, unorderly urbanization will continue to sprawl into neighbouring areas without intervention. New towns development could be an effective means to guide the future urbanization to realize more orderly urban land use.

Two new towns are proposed to be developed: one in Sta. Cruz and the other in the border area between Davao City and Panabo. Both towns have residential area, industrial area and some specialized areas. The Sta. Cruz new town will have a large area for tourism development. The Davao City-Panabo new town may accommodate an integrated institutional area. A proposed light rail transport (LRT) system will serve the two new towns.

Project No. IN-32a

1. PROJECT TITLE : Sta. Cruz Newtown Development Project
2. LOCATION : Sta. Cruz, Davao del Sur
3. IMPLEMENTING AGENCIES : Davao del Sur province, Sta. Cruz municipality, DPWH, NHA, and DTI
4. OBJECTIVES :
 - (1) To develop residential area, industrial area, and tourism area with LRT introduction to the newtown in order to absorb population pressure; and
 - (2) To support agri-industry and general industry development as a leading area in the DIDP Area.
5. EXPECTED EFFECTS : Promoting PAIC scheme and general industry as a leading industrial center
Formulation of commuters' town of Davao City
Mitigation of road traffic congestion by means of LRT introduction
6. PROJECT COSTS : ₱ 161 million for the master planning
7. IMPLEMENTATION SCHEDULE :
 - Phase I (-2000) : Preparation of Masterplan
 - Phase II (2000-2004): Land preparation for first stage development
 - Phase III (2005-) : Implementation of first stage development
 - Phase IV (2011-) : Land preparation and implementation of the second stage development
8. PROJECT DESCRIPTION :

About 1,200 ha of the total area will be developed consisting of 500 ha for residential area, 300 ha for industrial estate, 200 ha for the tourism development area like beach resort, golf course, etc. and 200 ha for park, greenbelt, and commercial areas, amusement park and reserved areas. The newtown will be connected to Davao City proper by LRT. The residential area will be composed of high density residential (low cost housing) for middle to low income families and low density residential areas. The industrial area will be used for non-polluting light industry and high-tech industry.

Project No. IN-32b

1. PROJECT TITLE : Davao City – Panabo Newtown Development Project
2. LOCATION : Davao City and Panabo, Davao del Norte
3. IMPLEMENTING AGENCIES : Davao City, Davao del Norte province, Panabo municipality, DPWH, NHA, DOTC and DTI
4. OBJECTIVES :
 - (1) To develop residential area, industrial area and integrated institutional area with LRT introduction to the newtown in order to absorb population pressure;
 - (2) To support agri-industry and general industry development as a leading area in the DIDP Area; and
 - (3) To establish an integrated institutional area.
5. EXPECTED EFFECTS :

Formulation of commuters' town of Davao City

Promoting PAIC scheme and general industry as a leading industrial center

Integration of the regional line agencies' office

Mitigation of road traffic congestion
6. PROJECT COSTS : ₱ 193 million for the master planning
7. IMPLEMENTATION SCHEDULE :

Phase I (-2000) : Preparation of Masterplan

Phase II (2000-2004): Land preparation for first stage development

Phase III (2005-) : Implementation of first stage development

Phase IV (2011-) : Land preparation and implementation of the second stage development
8. PROJECT DESCRIPTION :

About 1,500 ha of the total area will be developed consisting of 500 ha for residential area, 300 ha for industrial estate, 100 ha for the regional government complex, and 600 ha for park, greenbelt, commercial areas, amusement park and reserved areas. The newtown will be connected to Davao City proper by LRT and to Calinan and Panabo by highways.

The residential area will be composed of high density residential areas. The industrial area will be used for un-polluting light industry and high-tech industry. The regional government complex will play an important role in socio-economic development of the DIDP Area.

Project No. IN-33

1. PROJECT TITLE : Davao City Greenery Development Project
2. LOCATION : Davao City
3. IMPLEMENTING AGENCY : Davao City government
4. OBJECTIVES :
 - (1) To create an urban park system for Davao City with plenty of greenery; and
 - (2) To contribute to attracting visitors and investors by offering more pleasant living environment.
5. EXPECTED EFFECTS :
Clean and green Davao City
More pleasant living environment
6. PROJECT COSTS : ₱ 8 million for the master planning
7. IMPLEMENTATION SCHEDULE : Phase I : Formulation of greenery development plan; subsequent implementation according to the plan
8. PROJECT DESCRIPTION :

The project aims to create pleasant and comfortable living environment in Davao City through the planned development of an urban park system with plenty of greenery. It may consist of a network of artery road with vegetative separation strips and tree planted sidewalks, urban parks and recreation facilities in greenery, and conservation of river banks and other environmentally critical or vulnerable areas.

The project will contribute not only to attracting visitors and investors but also to protecting watershed areas of the City's future water sources and safeguarding citizens from possible flooding and other natural disasters as well as fires. As a first step, a greenery development plan will be prepared for the entire City jurisdiction. Establishment of greenery systems and water systems is the basic concept to guide the planning.

Project No. IN-33a

1. PROJECT TITLE : Davao City Arterial Roads Beautification Project
2. LOCATION : Quezon Boulevard, Roxas Avenue and Magallanes St., Davao City
3. IMPLEMENTING AGENCY : Davao City government
4. OBJECTIVES :
 - (1) To formulate green network;
 - (2) To provide a drainage network in accordance with the city drainage network plan; and
 - (3) To maintain clean road environment as a show case.
5. EXPECTED EFFECTS : Urban amenity with the green network
Improved human movements
6. PROJECT COSTS : ₱ 6 million
7. IMPLEMENTATION SCHEDULE :

| | | |
|-----------------|---|---------------------------------------|
| Phase I (1999) | : | Site investigation and implementation |
| Phase II (2000) | : | Implementation of the project |
8. PROJECT DESCRIPTION :

As a first step to create comfortable urban amenity gradually in Davao City as the international gateway and regional center, a road beautification project shall be undertaken to provide separation strips and sidewalks with tree planting, and roadside ditches in the arterial roads as a pilot project for the urban areas in the DIDP Area.

At present, most urban roads have inadequate sidewalk and no separation strips. Quezon Boulevard could play an important role as a main corridor operated with Light Railway Transit (LRT) with east-west axis in the future, and Roxas Avenue and Magallanes St. could be main access roads to the Central Business District (CBD) connected with Quezon Boulevard. Besides sidewalk and separation strips, closed road side ditches shall be installed in these roads according to the city drainage development project to improve poor drainage conditions in the urban area. The project shall serve as a show case for the urban areas in the DIDP Area.

Project No. IN-34

1. PROJECT TITLE : Davao Metropolitan Area Integrated Urban Development Study
2. LOCATION : Davao City, Panabo in Davao del Norte and Sta. Cruz in Davao del Sur
3. IMPLEMENTING AGENCIES : Davao City, Panabo municipality in Davao del Norte and Sta. Cruz in Davao del Sur, DPWH, DTI and DOT
4. OBJECTIVES :
 - (1) To conduct a comprehensive planning study to clarify functional division among the member city and municipalities, allocate key facilities and prepare an effective land use plan;
 - (2) To formulate integrated multi-modal transport development;
 - (3) To strengthen law enforcement on the urban development in the metropolitan area; and
 - (4) To establish a data bank for urban economic and social conditions and facilities, housing units and other conditions.
5. EXPECTED EFFECTS :

Avoidance of excessive concentration of urban and industrial activities in Davao City

Mitigation of traffic congestion

Promotion of intensified land use according to new zoning ordinances

Establishment of information system for urban planning
6. PROJECT COSTS : ₱ 120 million
7. IMPLEMENTATION SCHEDULE : 1999 - 2000
8. PROJECT DESCRIPTION :

The study will prepare a land use plan for intensive urban land use to avoid suburbanization, in line with the future introduction of railway transport, integrated transport development plan, new zoning ordinances to be adopted for new urban area development and social and economic infrastructure development. The study shall analyze possibilities of major options including LRT development, new international airport development, newtown development in Davao City, Panabo and Sta. Cruz, and a bridge connection with the Samal island.

The project comprises the following:

- to establish a data bank system,
- to analyze present conditions on landuse, housing, urban infrastructure and social services,
- to identify present problems/development issues,
- to review the existing land use plan,
- to formulate district plans,
- to formulate multi-modal transport network, and
- to establish new zoning ordinances.

Project No. GQ-1

1. PROJECT TITLE : MBN-based Bottom-up Planning System Establishment Project
2. LOCATION : Throughout the DIDP Area
3. IMPLEMENTING AGENCIES : Municipal Planning Development Offices, Barangay Development Councils, local communities in cooperation with NGOs/POs
4. OBJECTIVES :
 - (1) To empower communities to be actively involved in formulating local development plans; and
 - (2) To satisfy minimum basic needs cost-effectively.
5. EXPECTED EFFECTS :

Completion of the MBN survey

Better local development plans reflecting MBN

Community-based implementation and monitoring of multi-sector programs
6. PROJECT COSTS : ₱ 50 million
7. IMPLEMENTATION SCHEDULE :

| | | |
|-----------------------|---|---|
| Phase 1 (~ 2004) | : | Completion of the MBN survey |
| Phase 2 (2005 – 2010) | : | Institutionalization of the MBN-based bottom-up planning system |
8. PROJECT DESCRIPTION :

The Minimum Basic Needs (MBN) approach has been adopted as a means to attain the vision and goals of the Improved Quality of Life of Filipino Families of the Philippine 2000 and the Social Reform Agenda of the National Government. The first step is to complete the MBN survey for all the 1,152 barangays. In the DIDP Area, only 26% of the barangays in Davao Oriental and Davao del Sur have completed the survey and established a Community Based Information System as of December 1997. The coverage is much smaller in Davao Province and Davao City, less than 5% of the barangays.

The project will expedite the completion of the MBN survey through training local government personnel providing logistic supports such as a survey form for each family, and tapping experiences of NGOs. The project will provide training also on how to incorporate the survey results in local development planning. A community databoard will be installed to facilitate the monitoring of effects of programs to be implemented responding to predominant unmet needs. Such programs will be multi-sectoral like an integrated nutrition program for pregnant mothers involving health, education and agricultural sectors.

The bottom-up planning by the MBN approach should be institutionalized in steps. Capacities of local government personnel will be enhanced initially through the conduct of the MBN survey and local development planning based on it, and further through the implementation of programs responding to identified needs. Effects of programs will be monitored by using the community databoard, and results will be fed back to the planning process.

Project No. GO-2

1. PROJECT TITLE : Institute for Local Government Administration (ILGA) Strengthening Project
2. LOCATION : Davao City
3. IMPLEMENTING AGENCIES : DILG
4. OBJECTIVES :
 - (1) To enhance the capability of ILGA to perform its training mandate; and
 - (2) To expand the ILGA concept to include other frontline workers in the government, such as health, social and environment workers.
5. EXPECTED EFFECTS :

More effective and efficient delivery system of capability training services to LGUs

Empowered LGUs and government workers
6. PROJECT COSTS : ₱ 20 million
7. IMPLEMENTATION SCHEDULE :
 - 1999 - designing of Training Complex and fund sourcing
 - 1999 - onward conduct of trainings
 - 2001 - construction of buildings and other structures
 - 2002 - transfer of seat of trainings to new structure
8. PROJECT DESCRIPTION :

The project will serve as a training center for LGUs and government workers in the civil service. It will be equipped with state-of-the-art facilities for training, offices and a dormitory. To strengthen the training function, it will have a unit for periodic training needs assessment (TNA) and the production of training materials/modules. A pool of experts will be composed of qualified people from the academe, DILG and other line agencies of the government. To sustain the project, LGUs and agencies will be required to pay training fees.

Project No. GO-3

1. PROJECT TITLE : More with Less Program
2. LOCATION : DIDP Area
3. IMPLEMENTING AGENCIES : Association of Regional Executives of National Agencies (ARENA), DILG, and Regional Council for Research and Development (RECORD) Foundation, Inc.
4. OBJECTIVES :
 - (1) To install and institutionalize a scheme of transparency in all government transactions; and
 - (2) To improve performance and accountability of LGUs.
5. EXPECTED EFFECTS :
Reduced graft and corruption
Better performance with smaller budget
More services to the people
More concerned citizens
6. PROJECT COSTS : ₱ 30 million
7. IMPLEMENTATION SCHEDULE : Immediate implementation to continue as long as necessary
8. PROJECT DESCRIPTION :

The problems related to the financial crises in the Government such a huge public debt of about P400 billion and a budget deficit of about P100 billion by the end of the year urgently need to be addressed. To address the problems, President J. Estrada among other measures, urged government officials to have more with less. It may be achieved by revitalizing public accountability through inter-agency management evaluation such as a scheme of inter-agency management audit every six months. The elements that may be included in management evaluation are: transparency of transactions, targets with corresponding budgets, actual accomplishments, evidence of participatory planning/budgeting, etc. The program should include recognition and awards to agencies on top of each category by province, agency, etc.

