

CHAPTER 7. INSTITUTIONAL AND LEGAL ASPECTS

7.1 Functional Responsibility for Urban Drainage Works

The functional responsibility for urban drainage works may be broadly categorized under:

1. Policy and Programme
2. Types of the objective drainage facility

Explanation :

The functional responsibilities for urban drainage may be categorized under the following policy and programme as well as the types of the drainage facilities:

(1) Drainage Policy and Programme

The principal agencies responsible for policy and programme functions of urban drainage is as described below (refer to Table 7.1):

(a) Drainage policy

A coherent policy on urban drainage will require the support of both Federal and State Governments. This is principally so as drainage is on the Concurrent List which empowers competence of both the Federal and State Authorities. Currently policies emanate from several sources such as the Cabinet, DID, MHLG, EPU, SA and LA. At the Federal Level it is recommended that urban drainage policy should be initiated by both DID and MHLG (Local Government). Urban drainage cannot be detached from the constituent components such as rivers, watercourses, riparian rights and local authorities, all of which come under the State list of the Federal Constitution. As such it is necessary that an Interagency Federal- State council is instituted to formulate uniform policies in all states. The most appropriate platform to undertake this task is the proposed National Rivers Council. At the State Level, policy recommendations which emanate from DID and the LA could be streamlined and coordinated by the proposed State Waters Management Authority on policy matters pertaining to catchment management plans and the State Planning Committee on matters pertaining to landuse development.

(b) Drainage Programme

: Current request for federal funding could originate from three principals sources i.e. Local Authority, the State Authority and the Federal DID. These requests are coordinated by EPU and the Treasury, prioritised through a bidding process and incorporated into the 5 year Malaysia Plans. As mentioned in the main report other sources of funding are the State Government or the Local Authority using their own resources. There is an obvious need to coordinate these programmes in tandem with the preparation of Local Plans, prioritise them before allocating funds. It is recommended that the proposed National Rivers Council may again be a suitable forum to address this before it is submitted to EPU and Treasury for funding approval.

(c) Regulations

Standards and Guidelines: While the preparation of standards and guidelines are usually done by the Technical Departments. It is important to note that rules and

regulations have to be empowered by an enabling Act or Enactment. In this respect the principal Act on urban drainage is the SDBA. Any bylaws on urban drainage should be adopted by the respective SA after it is deliberated and endorsed by the NCLG. At the moment there are no regulations on urban drainage unlike the Earthworks Bylaws and the UBBL. However there are several guidelines including the current Urban Storm Water Management Manual undertaken by DID. There are also several other guidelines prepared by MHLG and the Town Planning Department that relate to urban drainage facilities that is invariably incorporated at the layout planning stage of the land development process. Regulations on the quality of storm water runoff should also be promulgated under the Environmental Quality Act.

(d) Drainage Master Plans

Traditionally drainage masterplans for local authority areas were undertaken by Federal DID. To date, Drainage masterplans have been carried out for up to 22 towns and cites in the country. However the emphasis of the earlier plans was on river and drainage channel improvements. The new approach is toward integrated storm water management with emphasis on source control. It is also important that these plans are coordinated with the Local Plans of the area concerned. These masterplans could be prepared by DID or the LA. Once the budget is made available, private consultants are usually engaged to prepare the plans.

(e) Research and Development

Research and development on new concepts on storm water management should be spearheaded by NAHRIM, Federal DID, MHLG and the Universities.

Table 7.1 Drainage Policy and Programme

Policy/Programme	Agency
Drainage Policy	National River Council, DID, MHLG (Local Government Department), SWMA, State DID, SPC
Drainage Development Programme	EPU, Treasury, National River Council, DID, MHLG (Local Govt. Dept.)
Regulation / Guidelines	NCLG, DID, MHLG (Local Govt. Depart.), SA, DOE, SWMA
Drainage Master Plan	DID, LA
Research and Development	NAHRIM, University, DID, MHLG (Local Govt. Dept.)

(2) Types of Drainage Facility

The proposed functional responsibility on the planning, design, construction and maintenance of drainage facilities is shown in Table 7.2. The functional demarcation is guided by the Ministerial Functions Act 1969 and the Cabinet Directive of June 1996. It is recommended that DID be responsible for all drainage facilities that is connected to the proper management of the drainage basin while facilities necessary at the sub-basin level be the responsibility of the Local Authority. The catchment area criteria could also be used as an additional criteria to assign the responsibility. Generally, facilities having a catchment area of more than 2km² and major drainage facilities directly connected with flood mitigation such as river channel improvement, flood retardation basins, weirs and gates, trunk drains and community detention facilities will be the responsibility of DID. The

maintenance of these facilities will also be DID except for community detention pond facilities, that is normally incorporated with recreational facilities. As these facilities meet the community recreational needs, they should preferably be maintained by the LA. Drainage facilities constructed at the sub basin level should be managed and maintained by the LA. This will include drainage facilities within the housing development site which is usually built by the Developer to the appropriate technical specifications and eventually surrendered to the LA as a public facility.

Storage tanks in new development should be constructed by the developer and maintained by the landowner whereas storage tanks in existing built up areas will be the responsibility of the landowner. Prospects of providing a subsidy for encouraging this facility in existing built up areas should also be explored.

Table 7.2 Functional Responsibility for Drainage Facility

Drainage and Basic Facility	Catchment Area	Planning	Division	Construction	Maintenance
1) River Channel Improvement	> 4km ²	DID	DID	DID	DID
2) Flood Retardation Basin	> 4km ²	DID	DID	DID	DID
3) Weirs / Gates	> 4km ²	DID	DID	DID	DID
4) Trunk Drain	< 4km ²	DID	DID	DID	DID
5) Community Retention Facilities (incorporated with multipurpose use)	-	DID	DID	DID	DID
6) Infrastructure Drain/Secondary Drain	< 4km ²	D/LA	D/LA	D/LA	D/LA
7) Road side drain (State/Federal Roads)	-	JKR	JKR	JKR	JKR
8) Road side drain (Municipal Roads)	-	D	D	D	LO
9) Perimeter / Tertiary Drain	< 2km ²	D	D	D	LA
10) Flood Detention Ponds	-	D	D	D	LA
11) Other on site detention facilities	-	D	D	D	LA
12) Rehabilitation of existing detention ponds	-	LA	LA	LA	LA
13) Construction of Storage facility in open space	-	LA	LA	LA	LA
14) Storage tanks in new development	-	D	D	D	LO
15) Storage tanks in existing built up area	-	LO	LO	LO	LO

Notes :

D : Developer
 LO : Landowner
 LA : Local Authority

7.2 Funding and Cost Recovery Measures

The purpose of this section is to establish possible sources of funding and cost recovery measures allowed under the law.

Explanation :

The construction of drainage infrastructure requires large investment costs. In the past most of the investment cost for river improvement and construction of drainage channels were allocated from Federal or State Development Grants. Most drainage facilities were implemented by DID, the private developer or the LA. In addition to investment cost there is also a need to set aside allocations for maintenance of the facilities. Development budgets allocated for DID are also utilised for maintenance work. Unlike the state road grant which is an annual grant given by the Federal to State Governments, there is no specific annual grants for maintenance of rivers and drainage channels. State road grants are also utilised to maintain roadside drains and culverts. Hence it is imperative that 5 years development programme on urban drainage is established and annual budgets disbursed according to the programme. The proposed sources of the funding and the cost recovery measures are shown in Table 7.3.

Table 7.3 Sources of Funding and Cost Recovery Measures

	Implementing Agency	Maintenance Agency	Source of Funding	Cost Recovery Measures
Drainage Policy and Programme				
1. Drainage Master Plan	DID, LA	-	Federal/State Govt./Local Authority/International Grants	
2. Non-Structural / Measures / Public Education / Public awareness	DID, LA	-	Local Authority Fund/DID	
3. Research and Development	NAHRIM, DID, MHLG	-	Research Grants (MOSTE), International Grants	
4. ERM	LA	-	Local Authority Funds	
Basin Wide Drainage Facility				
1. River Channel Improvement	DID	DID	Federal/State Grant	Drainage Contribution (National Land Code)
2. Flood Retardation Basin	DID	DID	- do -	
3. Weirs / Gate	DID	DID	- do -	
4. Trunk Drains (>2km ²)	DID	DID	- do -	
5. Community Detention Pond	DID	LA	- do -	
Sub-Basin Drainage Facility				
1. Infrastructure Drain / Secondary Drain	Developers/ LA	LA	Developer/ Local Authority Funding	Drainage Improvement Charge s51 SDBA
2. Perimeter / Tertiary Basin	Developer	LA	Developer	-
3. Flood Detention Ponds	Developer	LA	Developer	-
4. Roadside Drain (Fed/State Roads)	JKR	JKR	Road Development Grant	State Road Grant
5. Other Municipal road side drains	LA / Developer	LA	- do -	- do -
6. Other on site detention facilities	Developer	LA	Developer	Drainage Rate
7. Rehabilitation of Existing detention ponds	LA	LA	Local Authority Fund	- do -
8. Construction of storage facilities in open space	LA	LA	- do -	Drainage Rate
9. Storage tanks in new development	Developer	Land Owners	Developer	-
10. Storage tank in house	LO	LO	Land Owner	Subsidy

The funding for Drainage masterplans will continue to be secured from Federal and State development grants. Other potential options are International funding in the form of development grants/loans (JICA/Danced), which can be secured bilaterally. Funds should also be set aside for promoting non-structural measures, public education and awareness. In this respect the two key agencies i.e. DID and the LA should set aside funds to undertake regular campaigns to educate the public on storm water management. Similarly Local Authorities should set aside allocations from the Local Authority fund for Emergency Response Measures (ERM).

Functionally it is suggested that the responsibility for basin wide drainage facilities should be that of DID. This will include river channel improvement, flood retardation basins, weirs and gates, trunk drains (>2km² catchment) and Community detention ponds. All these are large investment facilities that would require Federal or State Grants. Procurement of Soft Loan facilities could also be explored.

Some measures of cost recovery for the provision and maintenance of these facilities is through the imposition of Drainage Contribution by the State Authority for landuse conversion. It should be noted that the drainage contributions collected are insufficient to meet the huge investment cost necessary. Again instead of calling it drainage contribution, perhaps a river conservancy charge may be more appropriate as most final discharge is to the river. This will also help differentiate the charges imposed by the LA under the SDBA. Except for the city councils and the Municipality of Penang it is also suggested that the charges be standardized for Municipal areas and another for District Council areas in line with the recommendations of MHLG.

The management of Drainage Facility at the subbasin level is usually the responsibility of the LA. Most of the infrastructure however is built by the developer and surrendered to the Local authority as public facility. The LA under s51 SDBA are empowered to impose a Drainage Improvement Charge on developers. This is a potential cost recovery measure for the local authority and the fund could be consolidated into the Improvement Services Fund or the Local Authority Fund. These funds could be used to rehabilitate existing detention ponds and construct new storage facilities in open spaces. Under the Act, specific drainage improvement charges may also be imposed on frontagers to recover investment cost including land acquisition cost for the provision of any drainage infrastructure.

Local Authorities (LA) should also consider imposing a Drainage Rate (s132 LGA) to provide a source of revenue to undertake maintenance of drainage infrastructure and facilities. While in the past most drainage facilities were roadside drains, the maintenance of drainage facilities in the future is expected to be more onerous. This will include facilities such as storage facilities in open space, detention ponds, constructed wetlands etc. There is also a duty on the LA to set aside a budget for maintenance of drainage facilities in its area plus undertake maintenance work in compliance with MHLG guidelines. As for storage tanks in newly built houses, these will be constructed by developers according to the Guidelines of MHLG. However in existing built up areas, the prospects of providing a subsidy could be investigated.

7.3 Enforcement Capacity

The purpose of this section is to identify the enforcement responsibility and capacities as provided under the law of the various agencies responsible for urban drainage

Explanation :

On the whole enforcement capacities of agencies responsible for the provision of urban drainage facilities and the management of the quality of storm water is generally lacking. There are several agencies responsible for different aspects of offences and violations. The principal laws

relating to town planning (TCPA), urban drainage (SDBA) and the control of litter and garbage disposal (LGA) are all within the enforcement capacity of local authorities. As such it is recommended that LA play a custodian role on all waterways including drainage facilities in its area of jurisdiction. It should be noted that the LA is also the first line of communication between the public and the other Government Agency.

As such the enforcement capacity of local authority should be enhanced. In situations where the law does not provide direct enforcement powers to the Local Authority, such as erosion of hillland (Land Conservation Act 1960), Damage to river banks (Waters Act), Sand mining operations (NLC), mining operations (Mining Enactment) and enforcement of river reserves (NLC), the local authority should exercise supervisory functions to complement the enforcement capacity of the agency prescribed under the Act or enactment. Similarly on matters pertaining to the quality of storm water runoff, enforcement capacity basically lies with the DOE. In the long run there is a need to establish quality standards for storm water runoff similar to the Environmental Quality (Sewerage and Industrial effluents) regulations 1979. The quality of storm water runoff should also be monitored at periodic intervals to ensure that standards are not breached. A summary of the various violations, the enabling laws and the relevant enforcement agency is shown in Table 7.4.

Table 7.4 Enabling Law and Relevant Enforcement Agency

Violation/Offenses/Enforcement	Enabling Law	Enforcement Agency
Overall custodian role on all waterways	-	LA
Land use violation	NLC, TCPA	Land Administrator, Local Planning Authority
Litter and unauthorized garbage disposal	LGA	LA
Erosion of Hillland	Land Conservation Act 1960	District Land Administrator
Control of Earthworks	Earthwork by laws, ESCP (Erosion and Sediment Control Plan)	LA DOE
Diversion and abstraction of water and damage to river banks	Water Act SWMAE	District Office, SWMA
Sand Mining operation	NLC, SWMAE	Director of Land and Mines (DLM), Inspector of Mines, SWMAE
Discharge of waster water	EQA, SWMAE	DOE, SWMA, LA
Unlicensed blockage and diversion	SDBA, WA, SWMAE	LA, SWMA District Office
Indiscriminate Development in Catchment Area	SWMAE, NFA	SWMA, Forestry Department
Enforcement of river and drain reserve	NLC, SWMAE	DID, SWMA, DLM
Enforcement of Detention Pond Facilities in Residential Development	TCPA	LA
Enforcement of Community Detention Pond Facilities	TCPA	LA