

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

***General Policies Concerning the
Allocation of Fiscal Resources
to Accomplish the District's
Functions and Responsibilities***

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

Board of Directors:

George Campbell
Carole Carpenter
Tom Freestone
Fred Koory, Jr.
Ed Pastor

Approved: July 11, 1988

Amended: September 7, 1993

001.104

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

***General Policies Concerning the
Allocation of Fiscal Resources
to Accomplish the District's
Functions and Responsibilities***

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009

Board of Directors:

George Campbell
Carole Carpenter
Tom Freestone
Fred Koory, Jr.
Ed Pastor

Approved: July 11, 1988

Amended: September 7, 1993

Table of Contents

I.	Purpose	1
II.	Operations	1
	A. General	1
	B. Maintenance	1
	C. Planning	2
	1. Comprehensive Plan	2
	2. Budget Plan	2
	3. Areas Stormwater Management Plans	3
	D. Flood Warning	4
	E. Regulatory Functions	5
	1. Floodplain Management	5
	2. Drainage Administration	5
	F. Public Involvement	5
	G. Pollution Elimination	6
III.	Capital Improvements	6
	A. Capital Improvement Program	6
	B. Implementation of Approved ASMPs	7
	C. Acceptance of Facilities Built by Others	9
	D. Groundwater Recharge	9
Appendices		
	A. ARS § 48-3616	A-1
	B. The Area Master Drainage Study Program and Area Stormwater Management Plan Development	B-1
	C. Glossary of Terms	C-1

**General Policies Concerning the Allocation of
Fiscal Resources to Accomplish the District's
Functions and Responsibilities**

September 7, 1993

I. Purpose

This policy statement is designed to describe the functions and responsibilities of the District and to reflect the fiscal policy of the District as it relates to funding and cost sharing with others for the accomplishment of engineering or hydrologic studies, engineering designs, master planning, and construction implementation of the resulting plans.

II. Operations

A. General

The District is organized pursuant to ARS § 48-3601, et seq. The District's functional purpose is to prevent loss of life or injury to residents and the elimination or minimizing of damages to real and personal property from flooding within the geographical limits of Maricopa County. In accomplishing this purpose, the District uses a variety of structural (dams and channels) and nonstructural (managing and regulating) tools. These tools are discussed in subsequent sections. While the District is both reactive and proactive in its work, historically most of its energies have been appropriately directed toward remedial measures rather than anticipating and preventing future problems. **An intent of this policy is to make the District more proactive in the resolution of flooding problems within Maricopa County.**

B. Maintenance

The highest priority for the annual expenditure of District funds shall be for the operations, maintenance, and repair of existing flood control facilities as follows:

- Maintenance and repairs necessary to ensure the safe operations and the structural integrity of facilities, and to assure the operation of facilities in accordance with the design/construction capabilities and local sponsorship agreements between the District and federal agencies, or intergovernmental agreements with municipalities in the county. This funding shall take precedence over other operational or capital improvement projects.

a. The operational budget shall include a detailed description of the expenditures necessary to accomplish the operations and maintenance, regulatory functions (floodplain management and drainage administration), environmental program, public involvement program (information booklets, etc.), and the planning functions of the District. It will include expenditures necessary to accomplish Area Drainage Master Studies (ADMS), Area Stormwater Management Plans (ASMP), Watercourse Master Plans, and pre-design planning studies that are recommended through the *Procedure for Identifying and Prioritizing Potential 5-Year CIP Projects*, or a similar method approved by the Board of Directors.

b. The annual capital improvements budget and 5-year Capital Improvement Program shall include a detailed description of the expenditures necessary to achieve projects, e.g., engineering and hydrologic studies, engineering design, acquisition of rights-of-way, relocations of utilities, construction management, and construction.

3. Area Stormwater Management Plans

The purpose and goals of the Area Drainage Master Study (ADMS) program and the methodology for developing an Area Stormwater Master Plan (ASMP) are enumerated in Appendix B. District participation in the implementation of an ASMP is an effort to avoid the flooding problems which would require future remedial measures and is discussed in section IIIB. below. The Flood Control District will fund the initial mapping, hydrologic study, and modeling of the selected area.

a. The Flood Control District will maintain a master map file showing the location of all reconnaissance, feasibility, and ADMSs requested or underway, along with a file of background material for each area to include but not limited to: acreage, approximate population and assessed valuation, history of flood events and damages, and a preliminary staff assessment of the known flooding problems.

b. During the budget preparation cycle beginning in December of each year and with the assistance of the Consulting and Advisory Groups (community representatives and others interested in flood control) to the Flood Control Advisory Board, staff will prepare a recommended priority listing for ADMS accomplishment during the next fiscal year. The recommended priority list will be presented to the Flood Control Advisory Board at its February meeting for approval and inclusion in the budget. The priority list will identify those studies and ADMSs in each phase of accomplishment (e.g. mapping, hydrologic modeling, stormwater management alternative development, implementation) and the expenditures required to complete each remaining phase of each study. Staff will recommend a total budget amount to be allocated for the studies and the ADMS program for the fiscal

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

RESOLUTION FCD 88-8A

AMENDMENT 1 TO THE GENERAL POLICIES CONCERNING
THE ALLOCATION OF FISCAL RESOURCES TO ACCOMPLISH THE DISTRICT'S
FUNCTIONS AND RESPONSIBILITIES

WHEREAS, the Strategic Plan for Maricopa County affirms the County's responsibility to protect our residents' health, safety and welfare and calls for ensuring a capacity and quality of physical infrastructure sufficient to meet the needs of current and future residential, commercial and industrial development; and,

WHEREAS, the 1992 growth forecast by the Maricopa County Department of Planning and Development projects the population of Maricopa County to increase by 1.3 million residents between 1990 and 2010; and,

WHEREAS, the Board of Directors adopted the General Policies Concerning the Allocation of Fiscal Resources to Accomplish the District's Functions and Responsibilities, Resolution FCD 88-8, on July 11, 1988, in order to become more proactive in the resolution of flooding and stormwater management problems within Maricopa County; and,

WHEREAS, in accordance with these policies, Capital Improvement Program (CIP) projects are categorized and prioritized by the following definitions:

- 1) Comprehensive Plan Projects - projects that have a benefit to cost ratio calculated to be greater than one. The District has historically funded these projects one hundred percent (100%). Up to seventy-five percent (75%) of the District's revenues may be budgeted for these projects;
- 2) Area Stormwater Management Plan (ASMP) Projects - projects identified during the conduct of an Area Drainage Master Study (ADMS) that are needed to mitigate flooding damages. Funding by the District is not to exceed fifty percent (50%). Up to ten percent (10%) of the District's revenues may be budgeted for these projects;
- 3) Projects to be Owned by Others - projects costing no more than \$2 million developed by a city, that are not the result of an ADMS, which are part of the city's stormwater management plan. Funding by the District is not to exceed fifty percent (50%). Up to five percent (5%) of the District's revenues may be budgeted for these projects, but no more than thirty percent (30%) of the funds budgeted may be cost shared in one city; and,

WHEREAS, there has been a continued reduction in the availability of Federal funds to plan, design and construct CIP projects that meet the definition of Comprehensive Plan Projects provided above; and,

WHEREAS, the majority of future Flood Control District CIP projects that serve the County's residents will be developed either through the District's ADMS program or through the planning efforts of our agency customers; and,

WHEREAS, the Flood Control District's Strategic Plan calls for the development and implementation of a procedure for identifying and prioritizing flood control and stormwater management CIP projects; and,

WHEREAS, Flood Control District staff have employed Total Quality Management (TQM) techniques to develop the Procedure for Identifying and Prioritizing Potential 5-Year CIP Projects and have incorporated review comments from the cities into the procedure; and,

WHEREAS, based on the aforementioned trend toward locally-sponsored CIP project planning and development, it is appropriate to amend the General Policies Concerning the Allocation of Fiscal Resources to Accomplish the District's Functions and Responsibilities to evaluate, prioritize and fund future CIP projects on the basis of defined project criteria, as recommended through the TQM process.

NOW, THEREFORE, BE IT RESOLVED that the Board of Directors of the Flood Control District of Maricopa County hereby amends the General Policies Concerning the Allocation of Fiscal Resources to Accomplish the District's Functions and Responsibilities, as adopted in Resolution FCD 88-8, for the purpose of allowing the Chief Engineer and General Manager and the Flood Control Advisory Board to evaluate, prioritize and recommend funding for future Capital Improvement Program projects on the basis of defined project criteria, rather than by project type; and,

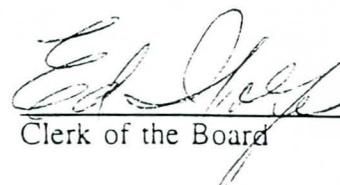
BE IT FURTHER RESOLVED that the Flood Control District shall utilize the Procedure for Identifying and Prioritizing Potential 5-Year CIP Projects, or a comparable method, for evaluating and prioritizing future CIP projects that are to be funded either partially or wholly by the District. The criteria and methodology to be used in this process shall be reviewed and updated, as necessary, by District staff at a minimum of every two years.

Dated this 7 day of September, 1993.



Chairman, Board of Directors

ATTEST:



Clerk of the Board

DEPUTY CLERK

E. Regulatory Functions

1. Floodplain Management

The District shall maintain the County's good status in the Federal Flood Insurance Program through the administration and enforcement of the *Floodplain Regulation for Maricopa County*. Pursuant to ARS § 48-3609, the District shall exercise floodplain management jurisdiction throughout Maricopa County including all incorporated communities unless the community has assumed the powers and duties for floodplain management pursuant to ARS § 48-3610.

In accordance with the survey report of flood control problems and the Comprehensive Plan, the District shall budget a portion of its tax revenues on an annual basis, including personnel and overhead, toward the nonstructural solutions to floodplain management. The District shall cost share with the Federal Emergency Management Agency (FEMA), in order to entice FEMA into a higher priority for the accomplishment of new or revised floodplain delineations of natural rivers, streams, and washes within its jurisdiction by providing the necessary aerial mapping and topography to the federal government. The District may accomplish new or revised floodplain delineations without FEMA participation when approved by the FCAB and the Board of Directors. The District may assist local jurisdictions by cost sharing for not more than 50 percent of the cost for aerial mapping and topography provided that the resulting floodplain delineation is an integral part of and/or ties into a floodplain within the District's management jurisdiction.

2. Drainage Administration

Pursuant to an agreement with the County, the District exercises drainage administration jurisdiction throughout the unincorporated areas of Maricopa County. Drainage administration shall be in accordance with the *Uniform Drainage Policies and Standards for Maricopa County* and the *Drainage Regulation for Maricopa County*. The District may perform the function of drainage administration for an incorporated community, including review of drainage plans for development within the community's jurisdiction, under the authority of an IGA, provided the community will pay the hourly wage and benefits for the review time, and the submitter will pay review fees to the District.

F. Public Involvement

A public involvement program using the public meeting and hearing format to inform the citizens to be impacted shall be provided for all District-managed capital flood control projects, Area Drainage Master Studies, Watercourse Master Plans, and flood insurance studies. The public will be informed of the nature of

to receive public input concerning the design parameters to be used as they affect aesthetics and multipurpose uses of the project.

Multipurpose uses of flood control projects will be encouraged to the extent that the other uses do not interfere with the operation of the flood control facility and do not significantly increase the maintenance requirements of the facility. Flood control funds shall not be expended for project elements or items designed to exclusively serve purposes other than flood control; however, flood control funds may be expended to upgrade elements required for flood control purposes if such upgrade will make the element suitable for multipurpose uses, e.g., meandering maintenance access roads for hiking and bicycling trail use. Funding for upgrades shall be budgeted in the Capital Improvement Program.

Capital improvement projects shall adhere to the following general criteria, unless otherwise recommended by the Flood Control Advisory Board and approved by the Board of Directors:

- Flood retarding structures or dams constructed under this program shall be designed in accordance with Corps of Engineers or Soil Conservation Service design criteria.
- Flood control channels will be designed to contain the selected design flow plus an appropriate amount of freeboard.
- Flood control levees will be designed in accordance with Corps of Engineers design criteria to contain the Standard Project Flood (SPF) or to withstand overtopping without catastrophic failure, except in that case where downstream conditions would be significantly worsened or where an existing downstream flood control structure would be endangered or rendered ineffective, and excepting the case where the area protected by the levee remains in the floodplain under the jurisdiction of the District. The exceptions will be evaluated and criteria established on an individual basis.
- Funding priorities for capital improvement projects will be determined on the basis of the *Procedure for Identifying and Prioritizing Potential 5-Year CIP Projects*, or a similar method approved by the Board of Directors. Funds will be budgeted for implementation of projects on the basis of priorities except as recommended by the Flood Control Advisory Board and approved by the Board of Directors. The annual level of budgeting and priority for each project will be determined based upon the District's ability to achieve the work within the budget year, e.g., accomplish the engineering design, acquire land rights, and initiate construction contracts.

B. Implementation Of Approved ASMPs

Implementation of the Area Stormwater Management Plan will primarily be the responsibility of the local jurisdiction through the planning, zoning, and devel-

C. Acceptance Of Facilities Built By Others

In accordance with its statutory authority, the District may acquire existing flood control or drainage facilities, or acquire and convert existing irrigation facilities with the mutual agreement of the owners, for the benefit of the district. The acquisition of facilities shall be approved by the Flood Control Advisory Board and the Board of Directors. Normally, acquisition will include fee title to the underlying lands and be permanent in nature. In some special cases, such as common detention basins constructed as part of the drainage system for development in the unincorporated areas of the county, acceptance of maintenance and operations responsibility may be only for the time period until the development is annexed into a municipality.

The criteria and standards for the acceptance of facilities and flood control structures constructed by others in order that the ownership and operation and maintenance responsibilities may be transferred to the District are contained in other documents approved by the Board of Directors for those purposes.

D. Groundwater Recharge

The District's authorizing legislation allows the District to construct, operate and maintain artificial groundwater recharge facilities if they have flood control benefits, and contract and join with other governmental units for the purpose of constructing, operating, and maintaining groundwater recharge or underground storage and recovery projects, except that District tax revenues may not be expended for any project that does not have flood control benefits.

No District expenditures for groundwater recharge or underground storage and recovery facilities will be allowed, unless it is determined by the Flood Control Advisory Board and the Board of Directors that a flood control project is warranted and that including groundwater recharge provides a cost-effective alternative. The use and/or lease of District facilities by other governmental units seeking to develop groundwater recharge projects will be allowed after the Flood Control Advisory Board and the Board of Directors determine that no negative impacts to flood control functions or increased environmental liability will occur and the requested use is approved.

Appendix A

ARS § 48-3616. Survey and report of flood control problems and facilities; comprehensive program; adoption by board; hearing

- A. After a flood control district has been established in a county having a population of over three hundred thousand persons according to the latest federal decennial census, the board shall cause the chief engineer to make or have made by the flood control engineer or by qualified private engineers a survey of the flood control problems of the district and to prepare a report describing existing flood control facilities in the area, recommendations as to cooperation between the district and the owner or owners of existing facilities, recommendations and a preliminary plan for the construction of or other acquisition of facilities to carry out the purchase of the district, a description of the property proposed to be acquired or damaged in performing the work, a program for carrying out the regulatory functions, a map showing the district, boundaries and location of the work proposed to be done and property taken or damaged, an estimate of the cost of the proposed work and such other things as the board of directors may request. Before submission to the board of directors, the report shall be submitted to the citizens' advisory board if one is established for its review and recommendations. The report shall be prepared at least every five years beginning in 1985 and shall indicate the past efforts of the district in eliminating or minimizing flood control problems and state the planned future work of the district to eliminate or minimize flood control problems.
- B. The chief engineer and his staff shall then prepare a comprehensive program of flood hazard mitigation, taking into consideration the recommendations submitted in the report. When a comprehensive program satisfactory to the board is available, the board shall tentatively adopt and schedule a public hearing on the program and the performance of the proposed work. The comprehensive program shall be reviewed and modified as necessary to reflect the past and future planned flood control works of the district. Notice of the hearing shall be given by publication once a week for two consecutive weeks in a newspaper of general circulation in the area of jurisdictions, the first of which shall be at least ten days before the date fixed for the hearing.
- C. The chief engineer and his staff shall prepare and submit to the board a five year capital improvement program in a form approved by the board three months before the final date for submission of the annual budget. The program shall separately identify capital improvements for engineering, rights-of-way and land acquisition and construction with such supporting explanations, cost estimates and completion schedules as the board may require. The program shall be

Appendix B

The Area Master Drainage Study Program and Area Stormwater Management Plan Development

1. Purposes of the Program

- a. For the Flood Control District of Maricopa County at the urging of the incorporated communities of the County, to assume a leadership role in developing a uniform, comprehensive inventory and model of the natural and man-made features that influence rainfall-runoff in the study area (hydrologic study and model).
- b. For the Flood Control District, in cooperation with local jurisdictions, to develop an acceptable skeleton stormwater management alternative for a given watershed or portion thereof. By definition, an acceptable stormwater management alternative must satisfy the prerequisites of maintaining the integrity of existing flood control facilities at design capacities and maintaining the continuity of drainage across political boundaries.
- c. For the Flood Control District, with the approval of the Board of Directors, to provide financial assistance to local jurisdictions for the implementation of facilities which are part of an approved stormwater management plan jointly developed as a part of the ADMS program.
- d. For the Flood Control District to assume a leadership role in the development and production of *Uniform Policies and Standards for Drainage* and a *Stormwater Drainage Design Manual*, and in the research and in-depth analysis and evaluation of regional rainfall data for development and production of *Design Precipitation Guidelines and Isohyetal Maps* for Maricopa County.

2. Goals of the Program

- a. To create a flexible, state of the art, hydrologic computer model based on the collective knowledge and agreement of the hydrology experts from the staff of all government agencies having regulatory review or project jurisdiction within the study area.
- b. To provide the regulating jurisdiction with a performance oriented hydrological resource model and consulting service for verification of adequacy, and compatibility prior to implementation of developer proposed improvements.

the staff of all the government agencies involved in the study and development of the plan. The model will use the 100-year storm duration and placement which will generate the greatest runoff under existing natural and man-made conditions.

The first iteration of the model will compute flow rates at identified points of runoff concentration, known points of physical constraint (bridge or culvert openings, etc.), and points of known flood damages.

Critical control points will be established at points of known hydraulic constraint. Control points will also be established at known points of flood damages in existing developed areas and an acceptable level of flood damages determined in order to establish the maximum allowable flow rate at each point.

Analyze the maximum allowable flow rate established on the basis of minimizing flood damages at each critical control point to determine if it is feasible/economical to achieved. If not, adjust flow rate upward.

NOTE: The flow rate at a critical control point (point of flood damages) will not be established at a rate higher than the pre-project worst case 100-year runoff flow rate.

Make assumptions as to how the area will develop and, on the basis of 80 acre cells, establish the next level of critical control points and determine allowable flow rates.

Subsequent iterations of the model will be required for adjustments necessary to establish maximum allowable flow rates for the 100-year recurrence interval event causing the greatest peak runoff, at all critical control points.

Publish and distribute the model to all jurisdictions.

Update the model to incorporate man-made features approved by the regulatory agency or installed by governmental agencies.

Publish and distribute the revised model to all jurisdictions.

NOTE: Maintenance of the computer model to represent current conditions on the watershed will require a continuing effort, and the District will request input from the local jurisdiction on a quarterly basis for updating the model. Revised model data and stormwater management plan maps will be provided to the local jurisdiction after each update.

4. Acceptable Level of Damages

Critical to the development of the hydrologic model is the concept of identifying an acceptable level of damages at any point in the watershed. This is an area requiring subjective judgements on the part of the engineer/hydrologist doing the study. Among the factors considered in this determination are:

Appendix C

Glossary of Terms

ADMS: Area Drainage Master Study

ARS: Arizona Revised Statutes

ASMP: Area Stormwater Management Plan

CIP: Capital Improvement Program

EPA: Environmental Protection Agency

FCAB: Flood Control Advisory Board

FEMA: Federal Emergency Management Agency

IGA: Intergovernmental Agreement

Level of Protection: The recurrence frequency of the rainfall runoff event that the project is design to handle, e.g., SCS flood control dams normally are designed to provide 100-year protect, or store the total runoff volume from a rainfall event occurring once each 100 years.

Major Drain: A natural or man-made channel, conduit, or wash serving a watershed of from 160 acres to 10 square miles.

MCDEM: Maricopa County Department of Emergency Management

MCDOT: Maricopa County Department of Transportation

NPDES: National Pollutant Discharge Elimination System

Positive Outfall: The point of discharge from a natural or man-made channel, conduit, or wash into a natural or man-made channel, conduit, or wash of sufficient hydraulic capacity to handle the discharge without creating a backwater or damages.

Project Life: The design life of a flood control project based on the useful life expectancy of the materials used in construction of the project. For economic analysis purposes, the project life is normally assumed to be equal to the level of protection provided.

Regional Drain: A natural or man-made channel, conduit, river, or wash serving a watershed area greater than 10 square miles.