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Phoenix, AZ 85009

**Flood Control District
of
Maricopa County**

**Report of the
Flood Damage Reporting
Total Quality Management Team**

Team Members:

**Kofi Awumah
Anne Blech
Maximo Devera
Tom LaMarche
Amir Motamedi
Steven Tucker, P.E.**

May 11, 1994

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Executive Summary

Problem Statement: Flood Damage Recording at the Flood Control District is not always consistent, and may not reflect accurate and complete information that is accessible to all.

Project Statement: Develop a uniform procedure for the accurate recording, storing, retrieval and dissemination of flood damage and mitigation information.

Recommendations: A form has been developed (see attached) which should be used as a stand alone or along with other available forms to record flood damages. The information on this form, combined with other information, should be stored in an electronic database for future reference.

It is also recommended that the Committee re-examine this issue in one year once the forms have been tested in the field. Undoubtedly, some revisions or enhancements will be required at that time.

The only unknown factor remaining is the transfer of the damages into dollar amounts. The committee is not certain who in the District has the expertise to estimate these dollar amounts. It is recommended that the District Management decide on delegating this responsibility.

Responsibilities: The data gathered on regular basis by each division will be entered into the data base using the resources available at that division. The Watershed Management Branch of the Hydrology Division (Database Manager) will be responsible for updating, maintaining, analyzing and reporting of this data.

District Resource Impact Statement: Design and modifications of the database will be completed using the existing staff in the Information Systems Branch of the Administrative Division. Data input for future flood damage recordings, data analysis and reporting can also be done using existing District resources. Input of historic data may require clerical help under database manager's supervision.

1. Introduction

This project was proposed by Joe Tram, Special Projects Branch of the Hydrology Division as a TQM project on March 9, 1993. Following staff volunteered to participate in the TQM Committee:

Steven Tucker, Engineering
Tom LaMarche, Administration
Maximo DeVera, Hydrology
Anne Blech, Planning and Project Management
Kofi Awumah, Engineering (replacing Carol Davis)
Amir Motamedi, Hydrology

During the first meeting, Joe Tram briefed the Committee on the purpose of his request. Essentially, Joe mentioned that the District does not have a central depository for Flood Damage reports or photographs. The information gathered by the staff for each event has either not been filed or is not accessible to all. District's Strategic Plan, Goal 3 of the Objective 4 under the Flood and Stormwater Management Issue (dated March, 1993) also covers the objectives of this report.

Based on the discussions with the requester, the problem statement is as follows (see figure 1):

"Flood damage recording is not always consistent and may not reflect accurate and complete information that is accessible to all."

To remedy this, a central depository must be established to keep the flood damage reports. The depository must meet the following criteria:

1. The data must be accurate and complete. The committee must find a uniform procedure for recording the data in the field.
2. The depository must provide information needed by its users. Therefore the committee must identify users and prepare a needs assessment.
3. The data must be easily disseminated to the users. The data base must be user friendly.

The Project Statement is as follows:

"Develop a uniform procedure for the accurate recording, storing, retrieval and dissemination of flood damage and mitigation information."

Flood Damage Reporting

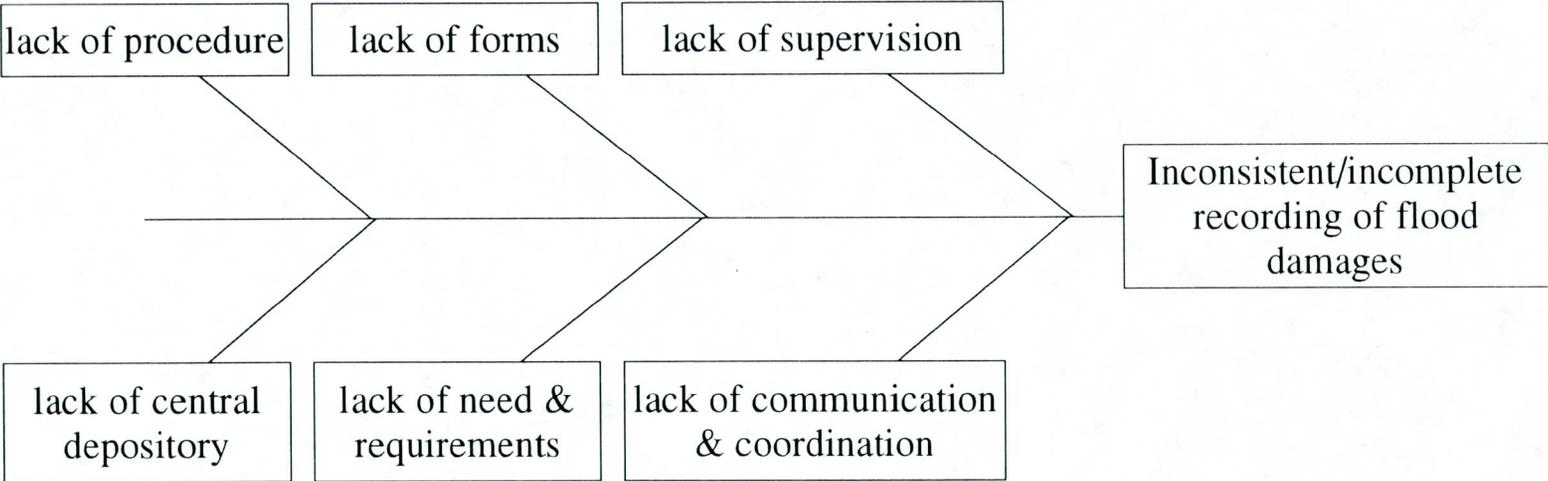


Figure 1: Cause and Effect Diagram

2. Action Plan

The procedure mentioned above is developed in two phases (see figure 2). Phase one includes the data dictionary (what data needs to be stored) and system identification (what computer system should the data be stored in).

Phase two is to develop the software for the computer system in phase one. This task will primarily be completed by the Information Systems Branch with guidance from the Committee.

3. Solutions: Phase One

3.1. Customer/Clients: All District employees, federal, state and local agencies, as well as private firms and individuals are the users of this database. District employees should have direct access to read the data base, while others should have indirect access through the database manager through a written request.

3.2. Data sources: Many Government agencies provide Flood Damage Reports after each major event. Corps of Engineers, Soil Conservation Service, Bureau of Reclamation and National Weather Service are among many Federal agencies who provide this data. Other local or regional agencies such as the Arizona Department of Water Resources, Arizona Department of Environmental Quality, Arizona Department of Transportation, State Department of Emergency Management, Maricopa County Department of Transportation, Maricopa County Department of Emergency Management, City of Phoenix Streets and Transportation, City of Glendale and City of Scottsdale also gather Flood Damage information.

Insurance Companies may provide valuable information by providing claims filed for flood damages.

The District also gathers Flood Damage information through many of its divisions. The Construction and Operations Division, Engineering Division and the Hydrology Division are the most active.

3.3. Data Users: Essentially every division within the District will use the information in the database. The data can be used for developing the Comprehensive Plan, justifying Capital Improvement Projects, reducing maintenance, calibrating hydrologic and hydraulic models, designing of projects, coordination for cost-shared projects, etc.

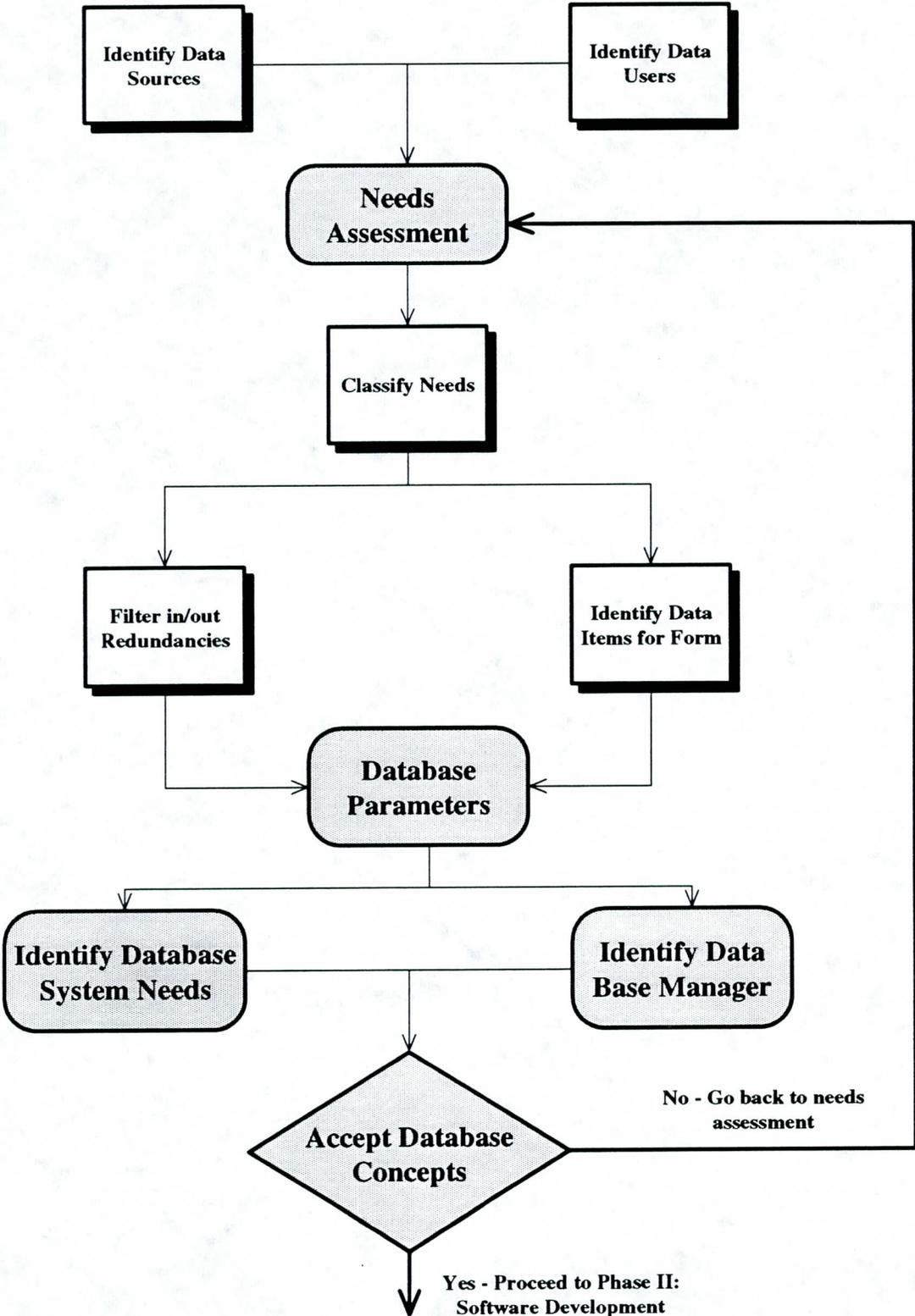
Other government agencies will also be interested in this data for their projects. District's Flood Damage data can supplement reports by other agencies, or be used for their project analysis.

Private consulting firms, law firms or private citizens are interested in this data for research, legal or other purposes.

3.4. Data Dictionary: Based on interviews conducted with key District staff, a list was developed of all the data that could be provided or is needed by each of the Divisions. This list was then supplemented by the information available from outside agencies. Appendix A contains all the information gathered by other agencies.

Figure 2: Action Plan

*Phase I: Data Management Concepts
Flow Chart*



Since one of the criteria set for the database is to make it user friendly, the list was then reduced to dispose of redundancies and information that is not significant. Some information such as water quality or sediment load are very important, however they require special skills or equipment; and require substantial amount of time to complete.

The Committee's emphasis has been to keep the paperwork and the duplication of efforts to a minimum. Even though a more efficient way to utilize this system is to have direct access to the database, the computer link is not available from the field. Therefore, a hard copy of the information required is developed into a *Flood Damage Form*, which at a latter time will be entered into the *Flood Damage Database*.

3.5. Flood Damage Form: The form is separated into two sections (see figure 3). The first section, to be filled out by the observer in the field, contains information that is not subjective. This includes time and the date, address (geographic location), narrative of the damage, person to contact, etc.

The second section contains analytical data such as frequency analysis or cost estimates which will be filled by the office staff or the database manager.

This form can also be used in conjunction with or as a part of other forms available at various levels of the District, the only criteria being the data must be complete and consistent. Divisions who are required to use other forms for flood observations (i.e. stage behind our structures) or monitor water quality can easily combine the two forms.

3.6. Flood Damage Database: The completed form in 3.5 must then be entered into the database. The database will have additional information (see table 1) and will be linked into the Hydrologic Information System (HIS) for graphical presentation.

4.0 Solutions: Phase Two

Phase two of the project requires choosing or developing a software for the database. This process is currently underway by the Information Systems Branch. The software is to be compatible with the Districts HIS system. The database should be accessible to all divisions, and preferably PC based.

5.0 Database Capabilities:

The database will be linked with the HIS system for graphic presentation. Some of the flood damages do not correspond to an individual structure (i.e. single residence). These types of flooding, such as ponding areas, may effect large neighborhoods, streets or infra-structures. Graphics by far is the best way to present this information with total damage reported for the said area.

District's HIS software, ARC/INFO, does have a database but it is not readily accessible to all. Therefore, other more accessible databases are being explored for possible use in Phase two.

FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY
Flood Damage Form

Observer: _____ am pm
Name Phone Ext Division Date Time

Location: _____
Street Number (mile post, station, etc.) Street/Route (structure, etc) City

Type of Structure: _____ Ownership: _____
(road, culvert, house,...)

Type of Damage: Inundation Erosion Sedimentation Structural Failure Other _____
(circle one)

Event Date: _____ Time: _____ am pm

Eye Witness: _____ Phone #: _____
(person who observed damage occurring)
Address City

Narrative Description of the Damage/Problem

Sketch of the Area Showing Flow Directions

Referrals/Notification: _____
Ref. : File: _____ Photo: _____ Video: _____ Other: _____

To be filled by Data Base Manager

Date/Duration of Damage: _____

Action Taken/Status: _____

Frequency of the Event: _____

Estimated By: _____

Cost of Damage: _____

Estimated By: _____

Extent of the Damage (area): _____

B.O.D. Dist. #: _____ Jurisdiction: _____ Verif. of Ownership: _____

Date of Report(input): _____ Staff: _____

Accuracy/Reliability of Data (1=not reliable, 2=reliable 3=very reliable): _____ Reason for rating: _____

Source of Data (other than the FCD): _____

Special Notes:

Table I
Flood Damage Reporting: Data Dictionary

#	Field Name	Description	Comments	Type	# Characters	Owner
1	LOCATI	Location/Address	Location by street address or description, must be adequate to allow geographical placement/referencing	Memo	open	Hydro
2	CDAMAGE1	Cause of damage	Logical choice between "Flooding" and "Other"	Logical/	1	Hydro
3	TSTRUCT1	Type of structure	Choose one or more: Residential, Industrial/Manufacturing, Commercial, Agricultural, Flood Control/Drainage Structure, Roads/Bridges, Parks/Recreation	Multiple/ Choice/ Character	1	Hydro
4	TDAMAGE	Type of damage	Choose one or more: inundation, erosion, sedimentation, structural failure, other	Multiple Choice/ Character	1	Hydro
5	DDAMAGE1	Date/duration of damage	Date and hour damage started, and the duration	Date, hour, character	30	Hydro
6	NDAMAGE1	Explanation (narrative of the damage)	Narrative description of the damage	Memo	open	Hydro
7	NOBSERV1	Name of observer	Name of person who observed the damage	Character	30	Hydro
8	DOBSERV1	Date and time of the observation	Date and time the observation was made	Date, hour	12	Hydro

Flood Damage Reporting: Data Dictionary

#	Field Name	Description	Comments	Type	# Characters	Owner
9	OWNER1	Ownership of the structure	The name of the owner of the property that was damaged	Character	30	Hydro
10	EYEWIT1	Name, address and number of eyewitnesses	Name, address and phone numbers of eyewitnesses of the damage	Character	100	Hydro
11	SKETCH1	Sketch of the problem	Reference field - the actual sketch will be on the back of the form or elsewhere. Sketches may be filed in the computer as technology permits	Character	100	Hydro
12	REFER1	Referrals/notifications/co-ordination	Who the information was referred to	Memo	open	Hydro
13	PHOTO1	Photos/video reference	Reference field - the photos and videos will be stored according to each division's preferences	Character	80	Hydro
14	FILENUM1	File number	Each Division's file system, or the central file number	Character	30	Hydro
15	STATUS1	Action taken/status	What measures were taken in reaction to the damage report	Memo	open	Hydro
16	FREQUEN1	Frequency of the event	Explanation of storm frequency (25-yr, 100-yr, etc.)	Character	10	Hydro
17	SDAMAGE1	Cost of the damage	Estimated dollar figures of total damage	Number	15	Hydro
18	XDAMAGE1	Extent of the damage	Area Affected	Memo	open	Hydro

Flood Damage Reporting: Data Dictionary

#	Field Name	Description	Comments	Type	# Characters	Owner
19	DIVISIN1	Board of Director's District - Number	Board of Director's district number	Character	15	Hydro
20	JURIS1	Jurisdiction the event occurred within	Administrative agency, Municipality	Character	30	Hydro
21	VEROWN1	Verification of ownership	Who owns the structure	Character	100	Hydro
22	DINPUT	Date of the report (input)	Date and time the report was written	Date/Time	15	Hydro
23	INPUT1	Person inputting the data	Who is inputting data	Character	30	Hydro
24	ACURACY1	Accuracy/reliability of data	How reliable is the data	Character	100	Hydro
25	SOURCE1	Source of data	Where the data is from	Character	100	Hydro
26	RECNUM1	Record number (computer file)	Number generated automatically by the computer	Number (Calculated field)	10	Hydro

Other fields that may be included: Township, Section Range; and Division and Branch.

6.0 Responsibilities/Resource Utilization:

As mentioned previously, many divisions within FCD are major source of information for the database. It is recommended that each division assign an individual (Division Coordinator) to be responsible for the forms filled within that division. The Division Coordinator is responsible to make sure that the form is filled completely, assign a file number and get the final approval of the database manager before entering the data into the database. Division Coordinator will also be responsible for filing the photographs, videos or other attachments.

This sharing of the responsibilities is preferred, since it utilizes all district resources in a consistent manner while preserving division individuality and preferences.

The Watershed Management Branch of the Hydrology Division is recommended to be the Database Manager. The database manager will be responsible for the following:

1. Overall coordination and maintenance of the database within the District.
2. Periodic update of the data dictionary to assure the needs of the clients are met.
3. Annual report summarizing past years damages.
4. Coordination with outside agencies to assure all available information is entered into the database.

The HIS section of the Information Systems Branch will assist the database manager oversee the digital information and relate it to the HIS. Digitizing new as well as historical data for the HIS is time consuming and to an untrained individual, complicated. Utilizing the expertise of the HIS section is an essential part of the overall project.

One of the most useful parameters in the database is the cost (dollar amount) of the damages. The unknown factor remaining at this point is locating the expertise within the District to transfer the damages recorded into dollar amounts. Possible candidates for this responsibility are the O&M Branch or the Planning Branch.

7.0 Recommendation:

It is recommended that the District staff recording flood damages in the field be required to use the form on figure 3. The Database Manager is responsible for the overall coordination as well as a summary report at the end of each reporting year. Each Division will be required to assign a Coordinator to collect, examine and file the forms filled for that division.

It is also recommended that this Committee re-examine the recommendations of this report in one year and make enhancements where necessary.

The Committee recommends that the District Management decide who should be responsible for estimating the cost of the damages recorded in the database.

APPENDIX

TQM

Objective 4

By July 1, 1993, develop and implement a procedure for identifying and recording flood damages (dollar cost and quantitative description) and mitigation actions taken on an annual basis.

Objective Leader: Joe Tram, Special Projects Branch Manager
Hydrology Division

Action Plan: Flood damages occur annually in Maricopa County. In an effort to provide direction and prioritization of efforts it is necessary to know where and why the flooding is occurring, what the damages were, and what mitigation actions have been taken. This information is not currently available at any one single source.

Flood and Stormwater Management

Goal 3

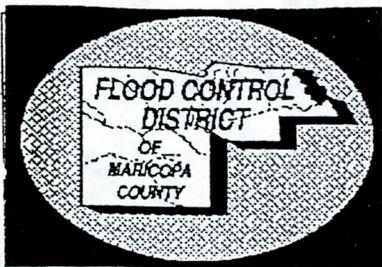
Strategy 4A: By April 1, 1992, identify and target all known agencies that record and mitigate damages noting their activation levels.

Strategy 4B: By April 1, 1992, establish a procedure with those targeted agencies so that during and after every storm event, documentation of damages and mitigation efforts will be made in a consistent and accurate fashion.

Strategy 4C: By July 1, 1993, use HIS to document damages and mitigation efforts for all flood events.

Strategy 4D: By July 1, 1993, investigate whether there are damages that are not currently recorded and develop a method for identifying and recording those damages.

Strategy 4E: By ~~December 31, 1992~~ February 28, 1993, produce a calendar year report for 1992 that identifies flood damages in Maricopa County and mitigation actions impacting Maricopa County. This report will be produced annually thereafter.



TQM Project Proposal Action Form

Project Title: Flood Damages
 Team Contact: A. Motamedi, S. Tucker, T. La Marche, C Davis, M. Devera
 Project Proposer: Joe Tram
 Date: 3/9/93

Status of Project Proposal:

Approved as stated in proposal. Please arrange a meeting with all team members.

Approved with the following changes or additions:

Action Pending, please provide the following information:

Denied District time or resources for the following reason(s):

TQM Steering Committee Chair: Charles Ferguson Date: 3/10/93

For Steering Committee use only:

Advertisement of Project and Team Members:

- | | |
|--|-----------------------|
| <input type="checkbox"/> Open Channel | Date Completed: _____ |
| <input type="checkbox"/> Bulletin Board. OPS | Date Completed: _____ |
| <input type="checkbox"/> Computer Mail, | Date Completed: _____ |

Division(s) Impacted:

- Administration
- C&O
- Engineering
- Hydrology
- Lands
- P&PM

Notification of Project by E-Mail / Date

AMM

CITY OF SCOTTSDALE
DRAINAGE COMPLAINT FORM

COMPLAINANT AND LOCATOR DATA

COMPLAINT NO. _____

NAME: _____ ADDRESS: _____
 SUBDIVISION: _____ PHONE: _____ DATE OF COMPLAINT: _____
 QTR. SEC.: _____ MASTER PLAN AREA/WTSD.: _____
 CITY RESPONDENT: _____ DATE: _____

NARRATIVE DESCRIPTION:

DESCRIPTIVE LOCATION: _____

COMPLAINT OR REQUESTED ACTION: _____

RECOMMENDED SOLUTION, RESPONSE OR ACTION TAKEN: _____

CURRENT STATUS: _____

CURRENT CITY CONTACT: _____ DATE: _____

Sketch

FLOOD COMPLAINT CALLS

DATE: _____

NAME OF COMPLAINANT: _____

ADDRESS: _____

CITY, STATE: _____

TYPE OF COMPLAINT: Structure ___ Property ___ Nuisance ___

PROBLEM: _____

SOLUTION: _____

COMPLETED? ___ DATE COMPLETED: _____

Date: 3/07/89
 Name: JUSTIN SMITH
 Address: 16209 N 67 AVE
 City: GLENDALE, AZ
 Type: PROPERTY
 Problem:

Flood Date: 3/07/89

Council District: CHOLLA
 Home Phone: 974-9870
 Bus. Phone:

Completed: Y Date Closed: 4/30/89

NO CURB & GUTTER ALONG EAST SIDE OF 67 AVE NORTH OF PARADISE LANE. PROPERTY AT NE CORNER OF 67 & PARADISE LANE FLOODS DURING HEAVY RAINS. SWALE AND CULVERTS ALONG EAST SIDE OF ROAD HAVE BEEN DESTROYED AND WROSENED FLOW RESTRICTIONS.

Solution:

CONTACTED LARRY VASSEL ON 3/9/89. SOLUTION IS TO RE-GRADE SHOULDER TO ALLOW FOR POSITIVE DRAINAGE TO AN EXISTING HEADWALL AND REMOVE DEBRIS TO ELIMINATE OBSTRUCTIONS. RELYED SOLUTION TO MR. SMITH ON 4/3/89. GRADING WORK COMPLETED

Viewing Floodc table with form F1: Record 21 of 262

Main 8

Date: 1/03/90
 Name: ROSEANNA LOCKHART
 Address: 8618 N. 56TH DRIVE
 City:
 Type: PROPERTY/NUISANCE
 Problem:

Flood Date: 1/03/90

Council District: BARREL
 Home Phone: 435-3282
 Bus. Phone:

Completed: Date Closed:

WATER BUILDS UP IN STREET FROM RUNOFF ON 55 & 59 AVES. GOING INTO BUTLER PARK AND OVERFLOWING RET. BASIN. PROBLEM OCCURS 2-3 X'S A YR. WATER DRAINS OUT IN 2-3 HRS. DUE TO NEW DRYWELLS BUILT IN BUTLER PARK. PROBLEM FROM CARS DRIVING BY CREATE WASH WHI

Solution:

CH GETS INTO HOUSES. OWNERS WOULD LIKE TO BLOCK STREET DURING HIGH WATER. SOLUTION: PROBLEMS APPEARS TO BE WATER VOLUME IS TOO LARGE TO FIT THROUGH THE ENTRANCE INTO THE CONCRETE CHANNEL. DAVE KOHNERT IS TO GET AS-BUILT SURVEY TO CHECK ON PROBLEM.

7/P

LOCAL FLOODING MITIGATION PROGRAM
STREET TRANSPORTATION DEPARTMENT
CITY OF PHOENIX

PROJECT NAME: 7th Street and Siesta Drive

PROJECT NUMBER: 02/28-1

DESCRIPTION: Storm water from undeveloped land to the south sheet flows north and west to Siesta Drive. It overtops the curb and floods Bush School retention areas flooding homes along Euclid Avenue. To the west of the school a small ditch is all that protects 12 homes. All homes are at or below alley grade. Homes flood west of Central Avenue also.

ESTIMATED NUMBER OF STRUCTURES SUBJECT TO FLOODING: 100

SUGGESTED SOLUTION: Construct flood wall along north side of alley (south of Euclid) from 7th Street to Central Avenue. Construct 20 acre detention basin west of school. A regional drain is needed in this area.

PRELIMINARY COST ESTIMATE THIS SOLUTION: \$3,000,000

FEASIBILITY STUDY COST BY ENGINEERING CONSULTANT: \$50,000

COST PER STRUCTURE TO REDUCE FLOODING: \$30,000

FIELD INSPECTION DATE: 4/1/91/PK

LOCATIONS OF KNOWN FLOODING:

314, 311, 323, 329, 415, 421 East Euclid Avenue
301, 309 East Desert Drive

CONTRIBUTING FACTORS:

Constructed prior to Development Standards
Floors too low
Failure to continue existing street pattern
Failure to allow drainage through new projects
Major storm run-off exceeds street capacity



MARICOPA COUNTY DEPARTMENT OF TRANSPORTATION (MCDOT)

Problem Location: _____ Date: _____
(Street Name)

(N) (S) (E) (W) OF _____
(Street or Structure)

Request From: _____

Address: _____ Phone: _____

DEADLINE DATE (Use Only if Necessary): _____ 199__

Forward To: _____ Department: _____

Referred to (Area Foreman): _____

Location: _____ Date: _____

DAMAGED ROAD/STRUCTURE	OBSTRUCTION/DEBRIS	MAINTENANCE/IMPROVEMENT
<input type="checkbox"/> Pothole / Cracks	<input type="checkbox"/> Debris in Road	<input type="checkbox"/> Courtesy Grade
<input type="checkbox"/> Erosion	<input type="checkbox"/> Debris in Right-of Way	<input type="checkbox"/> Sweeper Required
<input type="checkbox"/> Fench Post Damage	<input type="checkbox"/> Debris in Wash	<input type="checkbox"/> Backhoe Required
<input type="checkbox"/> Headwall Repair	<input type="checkbox"/> Debris on Bridge	<input type="checkbox"/> Crane Required
<input type="checkbox"/> Culvert	<input type="checkbox"/> Debris in Ditch	<input type="checkbox"/> Gradall Required
<input type="checkbox"/> Cattleguard Damage	<input type="checkbox"/> Sweeper Required	<input type="checkbox"/> Watertruck Required
<input type="checkbox"/> Bridge Repair	<input type="checkbox"/> Intersection View Obstructed	<input type="checkbox"/> Blade (Wash / Dips)
<input type="checkbox"/> Pipe Repair	<input type="checkbox"/> Blocked Drainage Pipe	<input type="checkbox"/> Blade (Shoulder)
<input type="checkbox"/> Powerline Down	<input type="checkbox"/> Standing Water	<input type="checkbox"/> Surface Treatment
<input type="checkbox"/> Waterline Broken	<input type="checkbox"/> Thick Mud	<input type="checkbox"/> Cattleguard (Install)
<input type="checkbox"/> Curb or Gutter	<input type="checkbox"/> Road Washed Out	<input type="checkbox"/> Guardrail (Install)
<input type="checkbox"/> Median	<input type="checkbox"/> Weed Control	<input type="checkbox"/> Pipe Installation
<input type="checkbox"/> Catch Basin	<input type="checkbox"/> Other (Specify Below)	<input type="checkbox"/> Other (Specify Below)
<input type="checkbox"/> Ditch	_____	_____
<input type="checkbox"/> Other (Specify Below)	_____	_____

Sketch / Drawing (use back side)

Comments: _____

Action Taken: _____

Foreman: _____
Date: _____
Supervisor: _____
Date: _____

ARIZONA DEPARTMENT OF TRANSPORTATION

MAINTENANCE SECTION

DAMAGE TO STATE HIGHWAY REPAIR REPORT

DISTRICT _____ PROJECT NO. _____

LOCATION: Highway Route No. _____

Distance _____ Direction _____ M.P. No. _____

ACCIDENT INFORMATION

Date _____ Name of Driver _____

Address _____

Description of Damage _____

REPAIR INFORMATION (From Maintenance Crew Work Report)

Date _____ Time Out _____ Time In _____

LABOR

#	CLASS CODE TITLE	EMPLOYEE NO.	RATE	HRS	COST

TOTAL LABOR COST: \$ _____

EQUIPMENT

#	UNITS	CLASS CODE DESCRIPTION	RATE	HRS / MILE	COST

TOTAL EQUIPMENT COST: \$ _____

MATERIALS

AMOUNT	CLASS CODE DESCRIPTION	UNIT COST	COST

Distribution: Adjustments & Claims - Original, Pink & Green
District - Goldonrod

TOTAL MATERIAL COST: \$ _____

This is a Spent NCR Form

P

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

HAZARDOUS WASTE COMPLAINTS, INCIDENTS, REFERRALS FILE NUMBER 93-

DATE / / TIME .M. RECEIVED BY INITIALED

NAME OF SITE/OPERATOR

EPA ID NUMBER/GENERATOR STATUS

ADDRESS CITY PHONE

X-STREETS

INFORMER'S NAME

ADDRESS CITY PHONE

REFERRED BY AGENCY PHONE

COMPLAINT

[Multiple blank lines for complaint details]

DISPOSITION/OTHER

COPY TO/DATE

REFERRED TO/DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

Illicit Discharge Reporting Form

Please report any illicit discharges on this form. Answer this questions on this form as completely as possible.

Incident Location:

Structure	
Location (outfall)	

Time of incident discovery

Date	
Time	

Weather Conditions (circle all that apply)

Sunny	Cloudy	Rain	Humid	Dry	Hot
Cold	Warm	Cool	Clear		

Description of Discharge

<p>Describe the Discharge in terms of odor, color, and frequency if known.</p> <p>(e.g. clear, dirty, musty, rotten egg)</p>	
--	--

FPM

When recorded return to:
Flood Control District
3335 W. Durango St.
Phoenix, AZ. 85009
Attn: Ron Nevitt



OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL

Recording Number
92-0116571

03/06/92 10:11

1 of 35

BECKY

FLOOD CONTROL DISTRICT
OF
MARICOPA COUNTY

NOTICE OF FLOOD HAZARD DETERMINATION

Date of Notice: Mar. 2, 1992 Assessor Book Number: 162-27-035

Property Address: 529 W. Missouri City: Phoenix

Legal Description: _____ Section 17 Township 2N Range 3E

The Control District has determined that this property is located within one of the following flood hazards:

Flood Insurance Rate Map:

Community FIRM No. 040051 Panel No. 1665E FIRM Zone AE Firm Date 9-4-91

Permit No. _____ Elevation Certification on File: / / Yes No

Floodplain Management Map:

Panel No. _____ Hazard Designation: _____ Map Date _____

This property has been removed from the Flood Hazard Zone.

Flood Map From Which Property Has Been Removed:

Community No. _____ Management Map _____ Panel No. _____ Map Date _____

Properties shown as being within a Flood Hazard Zone may require a permit for any development or improvements. Flood insurance may be required for buildings secured by a federally insured loan.

For those properties removed from within a Flood Hazard Zone, Flood Insurance which may have been required may no longer be mandatory. However, continuing coverage or continuing Flood Insurance at a greatly reduced rate may be advisable.

Questions concerning this notice should be directed to the Flood Control District, Floodplain Management Branch.

Ron Nevitt
For The Flood Control District

March 2, 1992
Date

FPM

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

2801 W. Durango Street, Phoenix, Arizona 85009
Telephone (602) 506-1501 ; Fax (602) 506-4601

FLOOD HAZARD DETERMINATION

Property Address: 5818 N. 45TH STREET

City: PHOENIX State: AZ Zip: _____ Parcel No.: 171-16-074

Requested By: DR. WERNICK/PAUL KIENOW Phone: _____

Mailing Address: same as above

The following determination is based upon the above information:

FIRM Community Number: 040051 Map Number: 04013C1690D

Panel Number: 1690 Suffix: D Effective Date: APRIL 15, 1988

Based upon the above information, a determination of the property's exact location cannot be made on the FIRM.

The property is located in Flood Insurance Rate Map (FIRM) Zone _____. Zone B, C or X are outside the delineated 100 year floodplain. Flood insurance is available, but not required by the Federal Insurance Administration, for buildings concerned with a federally insured loan. Flood insurance is optional at the discretion of the owner or lending institution.

The property is located in Flood Insurance Rate Map (FIRM) Zone _____. Zone D is an area in which flood hazards are undetermined. Flood insurance is available, but not required by the Federal Insurance Administration, for buildings concerned with a federally insured loan. Flood insurance is optional at the discretion of the owner or lending institution.

The property is wholly or partially within a Special Flood Hazard Area, FIRM Zone A-5. Federal law requires flood insurance as a condition of a federally insured mortgage or loan secured by buildings within a Special Flood Hazard Zone.

Base Flood Elevation, (AO Zone, use depth), if shown is 1697.5 feet, NGVD.

NOTE: The above flood hazard determination is based on the information furnished to us and the current Flood Insurance Rate Map for the area, and shall not create liability on the part of the District, the County or any officer or employee thereof, for any expense, losses or damage that may result from reliance on this information.

Ron Nevitt
Floodplain Representative

APRIL 13, 1993
Date

Citizen Inquiry

AMM

Sequence Number 92-2	Location Code A121	Structure Name EMF	Date 11/19/92	Time 1515
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Citizen Name: Robert L. Smith Address: 20401 East Germann Road

City: Queen Creek Zip Code: _____ (Telephone) Day: _____ Home: 987-3412

Phone Call Received By: Front Desk Referred To: Michael A. Meng

Type of Complaint:

<input type="checkbox"/> Construction	<input type="checkbox"/> Debris	<input type="checkbox"/> Drainage	<input type="checkbox"/> Dust	<input type="checkbox"/> Erosion	<input type="checkbox"/> Fencing & Gates
<input type="checkbox"/> Personnel	<input type="checkbox"/> Safety	<input type="checkbox"/> Vandalism	<input type="checkbox"/> Vector Control	<input checked="" type="checkbox"/> Weeds	<input type="checkbox"/> Other

Description (Part 1):
Individual called Roy Pederson complaining about weeds growing on County property that is adjacent to his. Mr. Pederson referred him to the District. I informed Mr. Smith that I would meet with him at 1000 hrs on 11/23 to discuss his concerns.

Description (Part 2):
On 11/23 Ernie Hamer and myself meet with Mr. Smith and informed him that County Highway is the agency that was responsible for maintaining the area in question. I told Mr. Smith that I would contact Jim Brundage with Highway and relay his concern

Action Taken: In-House Outside Agency

J. Brundage was notified of Mr. Smith's concerns and stated that he would take care of the problem. On 11/24 Mr. hamer and myself were informed that Smith was not satisfied with the work performed by Highway and helped mediate an agreement.

Work Order #: _____ Date Assigned: _____

Assigned To: Maricopa Highway Date Completed: _____

DAMAGE SURVEY REPORT

01. APPLICANT (State Agency, County, City, etc.): Town of Marana		P.A. NUMBER:		02. DECLARATION NUMBER: EUZ-1AU	
03. INSPECTION DATE: 9-1-91		04. WORK ACCOMPLISHED BY: <input type="checkbox"/> Contract <input checked="" type="checkbox"/> Force Account		05. PERCENTAGE OF WORK COMPLETED TO DATE: 25	
06. WORK CATEGORY ("V" Applicable Box): <input checked="" type="checkbox"/> Emergency <input checked="" type="checkbox"/> Permanent <input checked="" type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D <input checked="" type="checkbox"/> E <input type="checkbox"/> F <input type="checkbox"/> G				DSR NUMBER: 032	
07. DAMAGED FACILITIES (Location, Identification and Description): Marana High School, Az Highway 86				DAMAGE LOCATED IN THE FLOODPLAIN OR WETLANDS: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
08. DESCRIPTION OF DAMAGE: Water damage to north wall and lower level classrooms. 0.6 miles of Highway 86 washed out.					
09. SCOPE OF PROPOSED WORK: Remove & dispose of debris, rebuild north wall, replace desks, carpet and repaint. Clear and rebuild highway.					
10. ESTIMATED COST OF PROPOSED WORK					
QUANTITY (a)	UNIT (b)	MATERIAL AND/OR DESCRIPTION (c)	UNIT PRICE (d)	COST (e)	
200	Tons	debris removal	10.50	2,100 ⁻	
200	Tons	debris removed	6.50	1,300 ⁻	
900	Sq. Yds.	carpet	23.00	20,700 ⁻	
365	units	Student desks	91.00	33,215 ⁻	
1	1 ST floor	repaint	4750.00	4,750 ⁻	
1	north wall	rebuild	11,000.00	11,000 ⁻	
0.6	miles	rebuild road	1,300,000.00	780,000 ⁻	
11. EXISTING INSURANCE (Type): Wind		AMOUNT: 100,000.00		TOTAL: \$ 853,065.00	
12. RECOMMENDATION BY STATE INSPECTOR (Signature, Agency, Date): J. Faust - Az Division Eng Mgr 9-3-91				ELIGIBLE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
13. CONCURRENCE IN REPORT BY LOCAL INSPECTOR (Signature, Agency, Date): [Signature] Town Manager 9-3-91				ELIGIBLE: <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO	
				ATTACHMENTS: Yes	
				ATTACHMENTS: —	

SAMPLE

PRELIMINARY DAMAGE ASSESSMENT SUMMARY

APPLICANT: Willcox TYPE OF DISASTER: Flood DATE(S) OCCURRED: May 1, 1991

MAJOR AREA	SUB AREAS	NUMBER	AMOUNT
CASUALTIES:	Fatalities	<u>3</u>	
	Injuries	<u>37</u>	
BUILDINGS:	Residential Homes	<u>17</u>	\$ <u>1,700,000</u>
	Mobile Homes	<u>21</u>	\$ <u>79,800</u>
	Public Buildings	<u>4</u>	\$ <u>5,200,000</u>
	School Buildings:		
	- Public	<u>2</u>	\$ <u>3,200,000</u>
	- Private	<u>-</u>	\$ <u>-</u>
	Medical Facilities	<u>-</u>	\$ <u>-</u>
	Custodial Care	<u>1</u>	\$ <u>170,000</u>
	Business	<u>-</u>	\$ <u>-</u>
	Other	<u>-</u>	\$ <u>-</u>
UTILITIES:	Publicly Owned	<u>1</u>	\$ <u>-</u>
	Private	<u>1</u>	\$ <u>8,000,000</u>
ROADS/STREETS/HIGHWAYS:	Miles Damaged/Destroyed	<u>3.6</u>	\$ <u>850,000</u>
BRIDGES:	Damaged/Destroyed	<u>2</u>	\$ <u>4,000,000</u>
RECOVERY COSTS:	A. Debris Clearance		\$ <u>1,400,000</u>
	B. Protective Measures		\$ <u>-</u>
	C. Road Systems		\$ <u>8,500,000</u>
	D. Water Control Facilities		\$ <u>2,350,000</u>
	E. Public Buildings & Facilities		\$ <u>6,400,000</u>
	F. Public Utility Systems		\$ <u>-</u>
	G. Other		\$ <u>8,000,000</u>
SUMMARY COST:	Agriculture		\$ <u>-</u>
	Public		\$ <u>32,000,000</u>
	Private		\$ <u>2,500,000</u>
TOTAL			\$ <u>34,500,000</u>

SAMPLE

FLOOD DAMAGE REPORT - COMMERCIAL & INDUSTRIAL				REPORT NO.	
FLOOD DATE:		RIVER BASIN:		COUNTY:	
CITY:		OWNER'S NAME:		ADDRESS:	
TRIBUTARY, CREEK, RIVER:		PERSON INTERVIEWED:		DATE:	
POSITION:		BUSINESS OPERATING NAME:		BUSINESS ACTIVITY (ACTIVITIES) & % EACH:	
LOCATION OF PROPERTY FLOODED (STREET NO. SEC. T.R. OR OTHER)			STRUCTURE DATA		
			WOOD FRAME	MASONRY BLOCK	
STEEL FRAME	SIZE:	AGE:	COND:		
SIDING & %:	WOOD:	BRICK:		ALUMINUM:	STUCCO:
LOT SIZE:			ALUMINUM SHEET (BUTLER TYPE):		
OFF STREET PARKING: NONE <input type="checkbox"/> DIRT <input type="checkbox"/> PAVED <input type="checkbox"/>			BASEMENT DATA & USAGE		
DURATION OF FLOODING:			SIZE:	CONSTRUCTION:	DIRT <input type="checkbox"/> CONCRETE <input type="checkbox"/>
WATER DEPTH: LOT: BASEMENT:			USE: STORAGE <input type="checkbox"/>	WORK AREA <input type="checkbox"/>	HEATING SYS. <input type="checkbox"/>
WATER DEPTH RELATIVE TO FIRST FLOOR:			ESTIMATED STRUCTURE VALUE: ESTIMATED CONTENT VALUE:		
PHYSICAL DAMAGE					
STRUCTURE DAMAGE		COMMENT			AMOUNT
FLOORS:					
WALLS:					
FOUNDATION:					
HEATING/COOLING SYS.:					
LANDSCAPING:					
EQUIP. & TOOLS		(NOTE ITEM EVACUATED)			
INVENTORY		VALUE BEFORE FLOODING	SALVAGE/RESALE VALUE	NET LOSS	
BASEMENT:					
MAIN FLOOR:					
MISCELLANEOUS COSTS		COMMENT		TOTAL INVENTORY LOSS	
EVACUATION & REOCCUPATION					
PREPARATION & FLOOD FLIGHT					
CLEAN UP COSTS					
EMPLOYMENT AND EARNINGS					
NO. OF HIRED EMPLOYEES:		SALARIES LOST AND NOT MADE UP:			
LOST TIME DUE TO FLOODING BUSINESS:					
BUSINESS LOSSES					
ESTIMATED DOLLAR VOLUME OF LOST SALES					
ESTIMATED DOLLAR VOLUME OF POSTPONED SALES (SUBTRACT)					
NET LOSS OF BUSINESS:					
APPRAISER:		RECAP NUMBER:		TOTAL FLOOD DAMAGE:	

FLOOD DAMAGE REPORT - RESIDENTIAL		REPORT NUMBER:				
FLOOD DATE:		RIVER BASIN:	CITY:	COUNTY:	STATE:	
TRIBUTARY, CREEK, RIVER:		DATE:				
LOCATION OF PROPERTY (STREET NO., SEC. T.R. OR OTHER)		STRUCTURE TYPE				
		WOOD FRAME _____		CONCRETE BLOCK _____		
		SIZE SQ. FT.:		AGE:	COND:	
		SIDING & %		WOOD:	BRICK:	
				STUCCO:	ALUMINUM:	
LOT SIZE:		ACREAGE:	NO. STORIES:		LEVELS (IF SPLIT LEVEL):	
WATER DEPTH - YARD:		BASEMENT:	BASEMENT: YES _____		NO _____	
WATER DEPTH ^{ABOVE} FIRST FLOOR:		SIZE:		% FINISHED:		
DURATION OF FLOODING:		BEDROOMS _____		REC. ROOM _____	UTILITIES _____	
GARAGE: YES _____		NO _____	STORAGE _____		WORK SHOP _____	HEATING SYS. _____
TYPE: SINGLE _____		DOUBLE _____	WATER HEATER _____			
ATTACHED _____		SEPARATE _____	STRUCTURE VALUE:			
		FURNISHINGS VALUE:				
PHYSICAL DAMAGE		COMMENT		AMOUNT		
1	FLOORS:					
	WALLS:					
	FOUNDATION:					
	HEATING/COOLING SYSTEM:					
	LANDSCAPING:					
2	APPLIANCES:	NOTE IF EVACUATED				
	FURNISHINGS:					
	CLOTHES AND SUPPLIES:					
3	EVACUATION AND REOCCUPATION:					
	EXTRA HOUSING COSTS & NO. DAYS:					
	PREPARATION & FLOOD FIGHT:					
	LOST INCOME:					
	COST OF CLEANUP:					
	VEHICLE:					
APPRaiser:		RECAP NO:	TOTAL:			