



MWD

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

NOV - 8 1994

[Signature]
EXECUTIVE SECRETARY

November 3, 1994

To: Board of Directors (Engineering and Operations Committee-Information)
From: General Manager
Subject: Assessment of the District's Response to the January 17, 1994, Northridge Earthquake

Background

A preliminary report of the effects of the January 17, 1994, Northridge earthquake on the District's facilities, distribution system, employees, and member agencies was presented to the Board in March 1994. The report advised that staff would hold a series of debriefing sessions with the member agencies. Following those meetings, a detailed assessment of the District's emergency response and recovery efforts would be prepared which would include recommendations for improvement of the District's Emergency Response Plan and related activities, equipment, communication, and coordination with member agencies.

Report

Attached is the final Northridge Earthquake Assessment Report (Report) and the Action Plan for implementing the needed improvements, as identified in the Report.

The intent of the Report was to identify both the positive aspects of Metropolitan's emergency response and those areas requiring improvement. The Report reviews the District's current Emergency Response Program, briefly outlines the emergency response responsibilities of various groups within the District, and describes how Metropolitan responded on January 17 and subsequent days. The Report also examines the District's relationship with member agencies as it relates to emergency response, and compares actual performance with established emergency preparedness/response plans and procedures. Additionally, the Report includes information on costs and damages incurred at major District facilities, and the repair methods used in the recovery process.

To date, the identified damage and hazard mitigation costs total nearly \$11.5 million. Metropolitan has applied to the Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services (OES) for public disaster assistance under the Robert T. Stafford Act and the Hazard Mitigation Grant Program. Under these programs, the District is eligible to apply for up to 97.5 percent reimbursement of earthquake damage repair and mitigation costs. The total award of grants is still being considered by FEMA and OES, and a final amount for reimbursement will be determined after the repair work is completed, and incurred expenses have been verified.

Each Division Manager reviewed the 97 recommendations contained in the Report, and 71 projects were identified for improving Metropolitan's emergency response and its relationship with member agencies. During the review process, multiple recommendations considered to be of a similar nature were combined into one project. A brief description of each project is contained in the attached Action Plan for Emergency Preparedness/Response Projects. Some of the major areas of improvements contained in the Action Plan include:

- Revise and update the Emergency Response Plan, associated programs, and related policies and procedures;
- Expand the Emergency Preparedness/Response Program by having Metropolitan assume a leadership role in emergency preparedness with member agencies, reactivate the MARS Steering Committee, develop mutual-aid agreements, and coordinate emergency drills and exercises among member agencies and utilities;
- Development of a formal Business Resumption Plan for critical office operations;
- Purchase equipment and supplies to facilitate the recovery process.

Where possible the work will be funded under the 1994/95 O&M budget. It is expected that completion of some projects will be delayed since the current budget was prepared prior to the earthquake assessment process. Unless identified as an emergency need, funding will be requested in the 1995/96 budget to complete the

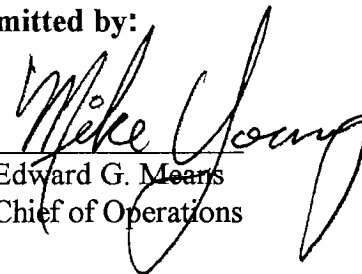
remaining projects. Resources and associated costs for many of the projects are still to be determined pending research, analysis, and evaluation by staff. Reports on the status of the projects will be periodically given to your Board.

Recommendation

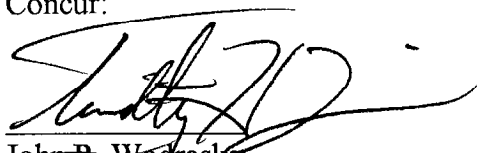
For information only.

John R. Wodraska
General Manager

Submitted by:

By 
for Edward G. Mears
Chief of Operations

Concur:


for John R. Wodraska
General Manager

TJR/jcj
Word(Assess.doc)
Attachments

ACTION PLAN
FOR
EMERGENCY PREPAREDNESS/RESPONSE
PROJECTS

The attached Action Plan (Plan) contains a listing of Emergency Preparedness/Response projects that were identified from recommendations contained in the Northridge Earthquake Assessment Report (NEAR).

The Plan includes a brief description of the scope of work for 71 projects planned to improve Metropolitan's emergency preparedness and response programs. To date, 13 of the projects have been completed. Eleven (11) of these were completed under the 1994-95 O&M budget and two (2) required a purchase of emergency equipment and were funded out-of-budget. Where possible, funding to complete the remaining 58 projects will be covered under the current budget program or funds will be requested in the 1995-96 budget.

Costs shown are estimates only, and on many of the projects the necessary resources and related costs are still being determined by staff (these costs are shown as TBD). Project status reports will be presented periodically to your Board.

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

COMMUNICATIONS	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Install a dedicated "800" telephone number to provide toll-free calling for employees requiring information and or assistance following a disaster.	Operations	Low	0%	3/95	\$300 annually + usage	O&M
During a major disaster, the District could lose communications with banks and other investment agents and be unable to direct the reinvestment of funds. A program/procedure will be developed to provide for the automatic reinvestment of District funds, in the event the treasurer is unable to communicate investment instructions due to loss of communications.	Finance	High	20%	2/95	TBD	O&M
The boil water advisory issued by the Department of Water and Power did not clearly identify the affected areas following the Northridge earthquake. Establish a program which will offer assistance to the agency issuing the order, to better define boundaries of the boil water advisory.	Public Affairs	High	10%	11/94	None	N/A
In order to provide immediate, accurate information on water quality conditions, a toll-free 800 number will be installed and the number will be listed in appropriate publications. This telephone line will be used to provide recorded water quality information to member agencies, sub-member agencies and other entities as needed.	Water Quality	High	25%	11/94	\$300 annually + usage	O&M
Due to commercial telephone service interruptions, key personnel were unable to contact the Gene Headquarters Emergency Call Center for reporting instructions. In order to correct this problem, an evaluation of alternative methods for emergency response personnel to receive reporting instructions will be conducted.	Information Systems	Medium	20%	6/95	TBD	O&M
The two-way radio system link to the repeater site on Mt. Lukens was inoperative due to interruption of service on commercial telephone lines. Additionally, the Jensen on-site radio base station is effective for short distances only. Installation of a digital microwave system will provide reliable alternative communications to all major District facilities.	Information Systems	High	15%	12/96	\$2,000,000	Capital
Commercial telephone lines were blocked and/or out of service following the earthquake. Action has been initiated, through legal counsel, to have the District's essential service lines designated as a Health and Safety priority.	Information Systems	High	20%	3/95	TBD	O&M
Evaluate portable communication requirements for DATS and other emergency response personnel.	Engineering/Operations	Medium	25%	9/95	TBD	O&M
To facilitate communication during an emergency, a procedure will be established for designation of radio channels for specific functions.	Operations	High	50%	2/95	\$300	O&M
The number of existing telephone outlets installed at the District Field Command Centers will not meet the expected demand during emergency situations. Additional telephone outlets and telephones will be installed to accommodate emergency response personnel.	Operations/Information Systems	High	25%	6/95	\$1,000	O&M

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

DAMAGE ASSESSMENT TEAMS (DAT)	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Because some members of the Valley Area DAT were unable to immediately report to their assigned areas, a review of the procedures for DAT reporting will be conducted. This review will allow for alternates to be assigned, should a DAT member not be able to report to his/her site. Verification that all alternate DAT members live outside of the service area they are responsible for will also be included in the review. DAT members will be required to report to the designated Field Incident Command Center, upon arrival at their assigned location.	Engineering	High	50%	12/95	\$3,000	O&M
In order to improve emergency response coordination between Engineering DATs and field management, regular meetings and training exercises will be scheduled with the DATs and the Area Superintendent at each site.	Engineering	High	Ongoing	N/A	\$25,000	O&M
Purchase disposable cameras (time stamped for replacement) and distribute ten (10) to each facility. The cameras will be used by DAT members to record observed damage following a disaster. The photographs will also be used to help substantiate claims for disaster assistance filed with FEMA and OES.	Administrative Services	High	0%	12/94	\$1,200	O&M
DISASTER ASSISTANCE						
Establish a policy for the collection, storage, and distribution of food, clothing, and supplies donated for MWD emergency victims.	Administrative Services	Medium	0%	3/95	TBD	O&M
Issues arose concerning leaves of absence following the earthquake. A policy will be developed to define emergency leave.	Human Resources	Medium	5%	TBD	TBD	O&M
Information will be sent to employees on an annual basis regarding services available through the District's Employee Assistance Program.	Human Resources	Medium	20%	12/94	TBD	O&M
There are no current policies to deal with emergency cash donations. A formal policy will be established for the acceptance and distribution, or assignment, of cash donations offered for employee assistance and repairs.	Finance	Low	0%	6/95	None	N/A

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

EMERGENCY PREPAREDNESS	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Incorporate the requirements of the Standardized Emergency Management System (SEMS), as required by Senate Bill 1841, into the District's emergency response/preparedness plans and programs. Compliance is required by December, 1996.	Operations	Medium	0%	12/96	TBD	O&M
Some emergency response personnel did not have knowledge of alternate routes to all critical District facilities. Provide maps identifying the locations of all District facilities, including alternate routes, and distribute to all emergency response personnel.	Operations	Medium	90%	1/95	\$1,000	O&M
Review, revise, and maintain the Emergency Response Plan and emergency preparedness programs incorporating additional personnel from Purchasing, Water Quality and other groups to facilitate improved response during emergency situations. Regularly review and revise the plan to insure that emergency call lists and emergency response staff are current. Establish procedures to provide relief shifts for emergency response staff.	Operations	High	75%	Ongoing	\$75,000 annually	O&M
EMERGENCY OPERATIONS CENTER						
The Sunset facility EOC is in a structure which is not sufficiently resistant to seismic motion. The EOC will be relocated to the Eagle Rock control center, the construction of a new Control Center is scheduled to be completed in January 1996. The EOC will temporarily be located at the Weymouth Filtration Plant's Incident Command Center, when the Sunset facility is vacated.	Operations	High	Design is 90% complete	3/96	Eagle Rock Control Center Project	Capital
Facilities at the filtration plants are not equipped to serve as field incident command centers. Establish Field Incident Command Centers, at major District facilities, equipped appropriately to facilitate local or regional emergency response activities.	Operations	Medium	50%	3/95	\$150,000	O&M
Establish EOC procedures to advise member agencies and emergency response agencies when EOC operations have been suspended or transferred to a local field office Incident Command Center.	Operations	High	20%	3/96	\$1,000	O&M

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

EQUIPMENT/MATERIAL/SUPPLIES	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Provision the EOC with the necessary supplies and equipment needed for extended operations.	Operations	Low	50%	3/96	\$4,000	O&M
No lodging or food services were available for emergency response personnel. Establish contracts with local vendors to provide lodging and food service for employees responding to emergencies.	Operations	Low	10%	3/95	Actual usage only	O&M
Metropolitan's ability to mobilize emergency personnel, materials, and supplies, following the earthquake, was impacted by damage to streets, freeways and bridges. The Cessna 210 airplane will be replaced in fiscal year 95/96 and staff is evaluating the benefit of replacing the Cessna with a helicopter which could be used to improve emergency response and facilitate daily District operations.	Operations	Medium	0%	1/95	TBD	O&M
Purchase a larger wheel type back hoe to facilitate emergency excavations.	Operations	Medium	0%	9/95	\$110,000	O&M
Provide pipeline repair crews with required monitoring, ventilation, and communication equipment.	Operations	High	40%	3/95	TBD	O&M
To facilitate the timely distribution of written notifications to appropriate agencies, install a FAX machine and personal computer with word processing software in the EOC.	Operations	Medium	0%	3/95	\$5000	O&M
Establish an agreement with local car rental agencies for vehicle availability following a major disaster. This agreement would insure the District "first right of refusal" in the event of a major disaster that renders the District's vehicle fleet inoperable or inaccessible.	Administrative Services	High	0%	1/95	Actual usage only	O&M
Install seismic restraints for desktop computer equipment at all District facilities.	Administrative Services	High	10%	6/95	\$100,000	O&M
The District's check-writing system was recently converted to an electronic laser printer system and the stock of blank checks was eliminated. To allow checks to be prepared manually should the laser-printer check system suffer an outage during an earthquake, blank checks will be stored off-site.	Finance	Medium	0%	3/95	TBD	O&M

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

POLICY AND PROCEDURES	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Update and maintain a list of emergency response personnel's pager, cellular telephone, and radio call numbers and place the lists in the appropriate facilities.	Operations	High	95%	1/95	\$1,000	O&M
Establish procedures requiring patrollers to use earthquake inspection forms in order to improve the documentation process.	Operations	Medium	0%	3/95	\$2,000	O&M
Emergency reporting areas were not clearly identified, and work assignments for some emergency response personnel were not well coordinated. Incorporate the Incident Command System procedures in accordance with SEMS. Establish a procedure requiring the Incident Command (Area Superintendent) to designate a back-up to remain in the field Incident Command Center at all times to direct inspection and repair operations and maintain a clear chain of command.	Operations	Medium	20%	8/95	\$4,000	O&M
Coordinate work schedule emergency response tasks with the Incident Commander, to ensure related hazards and health/safety issues are identified and addressed up front.	Operations/ Environmental Compliance	High	Ongoing	Check List Completed	None	N/A
Complete procedure to ensure that all incidents, where safety procedures were not followed, are investigated and documented to prevent potential future incidents, and train personnel on the new procedure.	Environmental Compliance	Medium	50%	8/95	\$5,000	O&M
Establish a procedure requiring employees to notify Human Resources when they change their address and/or telephone number. Human Resources will check annually to determine that employee information is current.	Human Resources	High	70%	11/94	\$5,000	O&M
Employee information, such as home telephone numbers and addresses are confidential. Establish a policy to permit designated personnel access to specific employee information during emergency situations.	Human Resources	Medium	10%	12/94	\$1,000	O&M
Due to the fact that the District's draft system is limited to issuance of drafts not exceeding \$500.00, an emergency draft procedure will be developed. The new procedure will allow authorized employees to issue drafts (during a declared emergency only) in excess of the current \$500.00 limit, if necessary for District requirements.	Finance	Medium	0%	3/95	TBD	O&M
A major disaster could cause an outage of the District's payroll system. Establish emergency payroll procedures to insure that employees can be paid if the payroll system suffers an outage.	Finance	Medium	0%	3/95	None	N/A

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

TRAINING	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Provide training on applicable safety practices and procedures for managers, supervisors, and non-field employees who are not assigned to a field facility, but may report to field facilities following an emergency.	Environmental Compliance	High	10%	5/95	TBD	O&M
Some emergency response personnel do not have an understanding of emergency reporting instructions and their assigned duties. The specific duties and responsibilities of all designated emergency response staff will be clarified and training provided, as needed, to the appropriate personnel.	Operations	High	10%	3/95	\$2,000	O&M
Clarify the purpose of the Gene Headquarters Emergency Call Center and distribute information to all employees and post the procedures in the EOC, Operations Control Center and field Incident Command Centers.	Operations	Low	50%	1/95	\$1,000	O&M
MEMBER AGENCIES						
Member and sub-agencies did not have sufficient resources to determine water quality conditions within their systems. Evaluate the feasibility of establishing a "mutual aid type" program to provide water quality assistance to areas impacted by the earthquake.	Water Quality	Medium	0%	10/95	TBD	O&M
Information regarding interconnections between agencies is limited. Evaluate the interconnections between agencies to determine the capability of "Whocling" water during and emergency situation.	Operations	Medium	25%	TBD	TBD	O&M
Review the EOC activation policy and Member Agency Response System (MARS) 2-way radio broadcasting procedures. Revise the procedures to facilitate the needs of Metropolitan, member agencies and other emergency response organizations, including, State Office of Emergency Service, County EOC's and other entities as needed. Schedule tests and training to familiarize other agencies with new procedures.	Operations	High	50%	6/95	TBD	O&M
MWD will assist Member Agencies to develop a generic emergency response plan that conforms to the standardized Emergency Management System (SEMS) as required by Senate Bill 1841.	Operations	Medium	0%	12/96	TBD	O&M
Expand the Emergency Preparedness program to include: Reactivation of the MARS Steering Committee; Metropolitan to assume a leadership role in coordinating emergency response activities between the District and its Member Agencies; and establish a program to annually coordinate and conduct drills and emergency exercises for emergency response personnel and Member Agencies.	Operations	High	10%	TBD	\$100,000	O&M
Two Member Agencies are not signatories to the MARS agreement. District representatives will meet with agencies to discuss signing the MARS agreement.	Operations	Medium	10%	3/95	\$2,000	O&M

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

GENERAL	Responsible Division	Priority Level	% of Implementation	Completion Due Date	Estimated Cost	Funding
Drawings of local facilities are not up-to-date and are not available in the field. Establish a procedure to update and distribute drawings of all facilities throughout the District so that damage can be accurately evaluated and recommendations for repair be made.	Engineering	Medium	0%	TBD	\$250,000	O&M
Access to District facilities was difficult due to public safety closures of streets and highways, and MWD emergency identification cards were not accepted by some law enforcement agencies. To correct this problem, the District will issue Identification Cards that will be accepted by Public Safety agencies for access to District Facilities during emergency situations. Additionally magnetic placards will be available for District vehicles denoting them as "emergency response" vehicles. Dash-board placards will be provided to personnel not assigned District vehicles, identifying them as authorized emergency responders.	Operations	Medium	25%	12/95	\$20,000	O&M
The District's Telecommuting Program will be expanded and modified to include: a personal computer "loaner pool" for home based work; in-house training for managers and staff; policies and procedures for telecommuting following a disaster; and new marketing strategies.	Administrative Services	High	20%	2/95	\$100,000	O&M
Following a disaster, key Finance personnel may be unable to travel to the Headquarters building to conduct financial operations. Key financial personnel will be added to the Emergency Response Plan. The emergency response teams members will report to alternate locations to insure continuity of the District's critical financial operations.	Finance	Medium	0%	3/95	None	N/A
Changes in Los Angeles building requirements have prevented the use of the emergency generator which supports the District's communications systems at Cal Plaza. Administrative Services will oversee the resolution of outstanding issues and work with the Mayor's office to expedite a final inspection by the City's Building Inspector.	Administrative Services	High	95%	1/95	N/A	N/A
Not all District employees participate in the automatic payroll deposit program. In order to help facilitate the payment of employee payroll during an outage of the automatic payroll system, a program will be initiated to increase employee participation in the automatic payroll deposit program.	Finance	Medium	0%	3/95	None	N/A
A formal Business Resumption Plan is being developed for critical office operations. The plan will ensure that each division establishes non-conflicting business resumption procedures and identifies the resources necessary to support critical business activities following a disaster.	Operations	High	5%	6/95	\$250,000	O&M
Expand the District's GIS system to provide information to aid in the recovery and /or assistance process. Additional network programs will include: reference maps and drawings; geographic; transportation; and employee information. This project will include an evaluation of Divisional needs for network access and a cost benefit analysis.	Planning	Medium	5%	TBD	TBD	O&M

ACTION PLAN FOR EMERGENCY PREPAREDNESS/RESPONSE PROJECTS

COMPLETED PROJECTS	Responsible Division	Cost	Funding
The Member Agency emergency call lists need to be updated more frequently. A procedure was established to update the listing on a periodic basis.	Operations	Negligible	O&M
A fuel/lube truck was purchased in order to maintain equipment and vehicle operations during emergency situations. The fuel vehicle will provide fuel for emergency repair equipment at various District facilities.	Operations	\$108,923	Emergency Out-of-Budget
There was difficulty in mobilizing weld trucks in time to install new pipe sections. An 8-pack inverted type welding machine powered by District portable generators was purchased to facilitate improved emergency response.	Operations	\$32,226	Emergency Out-of-Budget
Access bridges to piping headers on chlorine railcars fell. In order to correct this, written guidelines, insuring that bridge assemblies remain in the up position except when access to manway (chlorine piping headers) is necessary.	Operations	None	N/A
Chlorine railcars were not secured, and moved 1-2 feet on the tracks. In order to correct this problem railcar wheel chocks were purchased and will be used when the railcars are in a stationary position.	Operations	Negligible	O&M
Because power at the Jensen on-site radio base station was inadvertently disconnected, a permanent power cable was installed. This installation will insure the base station cannot be disconnected from its power source.	Information Systems	\$200	O&M
The Telecommunications emergency call roster was not up to date. The call-out roster was updated and distributed to the EOC and other appropriate emergency response personnel. A procedure was established to update the telecommunications emergency call-out roster.	Information Systems	\$500	O&M
The EOC emergency response personnel reported difficulty using the emergency telephones in the EOC. The telephone system was reconfigured so that EOC staff would have access to ROLM phones. The emergency back-up system will be utilized only if the primary telephone system fails.	Information Systems	\$1,000	O&M
Additional communication technicians were designated to report to the EOC following emergency situations.	Information Systems	None	N/A
A procedure was established requiring communication technicians to regularly inspect and test the EOC telephone systems.	Information Systems	None	O&M
A kit was prepared for designated Public Affairs personnel which contains a directory of media numbers, Member Agency FAX numbers, Director's FAX numbers and other important information.	Public Affairs	\$500	O&M
The mobile communications trailer is currently the only alternative to the Sunset EOC. A back-up EOC has been established at the Weymouth Filtration Plant.	Operations	\$25,000	O&M
Standard limits for petty cash are insufficient following a disaster. A procedure was established to increase petty cash limits at facilities impacted by an emergency while in the recovery phase.	Finance	None	N/A

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