

Milwaukee County

Pre-Disaster Mitigation Plan

**MILWAUKEE COUNTY WISCONSIN
PRE-DISASTER MITIGATION PLAN**

Milwaukee County Emergency Management
9225 S. 68th Street
Franklin, WI 53132

September 2011

TABLE OF CONTENTS

1.0 INTRODUCTION	1
1.1 AUTHORITY	1
1.2 ACKNOWLEDGEMENTS.....	2
1.3 PROJECT AREA LOCATION	3
1.4 REGIONAL ECONOMY.....	3
1.5 SCOPE AND PLAN ORGANIZATION.....	4
2.0 PLANNING PROCESS	6
2.1 PLANING PROCESS 2004	6
CONTACT LIST.....	6
STAKEHOLDER INTERVIEWS AND MEETINGS	6
FORMAL PUBLIC MEETINGS	6
PLAN REVIEW	7
2.2 UPDATE PLANNING PROCESS 2010.....	7
SUMMARY OF UPDATE PLAN CHANGES 2010.....	9
3.0 HAZARD EVALUATION AND RISK ASSESSMENT	12
3.1 HISTORICAL HAZARDS.....	12
3.1.1 Floods	13
3.1.2 Winter Storms	25
3.1.3 Severe Thunderstorms.....	29
3.1.4 Drought.....	34
FREQUENCY OF OCCURRENCE.....	35
3.1.5 Earthquakes	37
3.1.6 Heat Waves	38
3.1.7 Coastal Erosion	39
3.2 HAZARD PRIORITIZATION.....	40
3.3 ASSESSING VULNERABILITY: IDENTIFYING ASSETS & VULNERABLE POPULATIONS	422
3.3.1 Building Values.....	43
3.3.2 Critical Facilities and Infrastructure.....	433
3.3.3 Future Growth and Land Use Trends.....	433
3.3.4 Vulnerable Populations	455
3.4 HAZARD PROFILES	466
3.4.1 Hazard Frequency	466
3.4.2 Hazard Impact Areas	477
3.5 ASSESSING VULNERABILITY: ESTIMATING POTENTIAL LOSSES	511
3.5.1 Hazard Magnitudes.....	511
3.5.2 RISK CALCULATIONS.....	511
4.0 MITIGATION STRATEGY	65
4.1 LOCAL HAZARD MITIGATION GOALS	65
4.2 MITIGATION OBJECTIVES AND ACTIONS	65
4.3 PROJECT RANKING AND PRIORITIZATION.....	67
4.4 PROJECT IMPLEMENTATION AND LEGAL FRAMEWORK	67
5.0 PLAN MAINTENANCE PROCEDURES	83
5.1 MONITORING, EVALUATING AND UPDATING THE PLAN.....	83
5.2 IMPLEMENTATION THROUGH EXISTING PROGRAMS	84
5.3 CONTINUED PUBLIC INVOLVEMENT	84
6.0 REFERENCES	85

7.0 RECORD OF ANNUAL REVIEW.....87

LIST OF TABLES

Table 1.1 Pre-Disaster Mitigation Plan Participating Municipalities1
 Table 3-1 Historic Hazards, Declared Disasters, and Weather-Related Fatalities in Milwaukee County.....21
 Table 3-2 Public Property Damage from Milwaukee County Floods.....24
 Table 3-3 Hazards Evaluated During PDM Plan Development.....41
 Table 3-3a Top Hazards Identified by Municipality.....41
 Table 3-4 Milwaukee County Hazard Frequencies.....47
 Table 3-5 Milwaukee County Hazard Vulnerability Assessments52
 Table 4-1 Cost-Benefit Scoring Matrix.....62
 Table 4-2 Milwaukee County Cost/Benefit Ranking of Hazard Mitigation Projects64
 Table 4-3 Milwaukee County High Priority Hazard Mitigation Projects73

LIST OF MAPS

Map 1-1 Location Map5
 Map 3-1 Building Stock Values by Census Block53
 Map 3-2 Total Societal Vulnerability by Census Tract.....60
 Map 3-3 Flooding Hazard by Census Block56

LIST OF APPENDICES

Appendix A Letters and Resolutions88
 Appendix B Planning Documentation89
 Appendix C Relevant Plans and Documents135
 Appendix D Critical Facilities143
 Appendix E Mitigation Strategies and Project Lists144