



Loss Avoidance Study

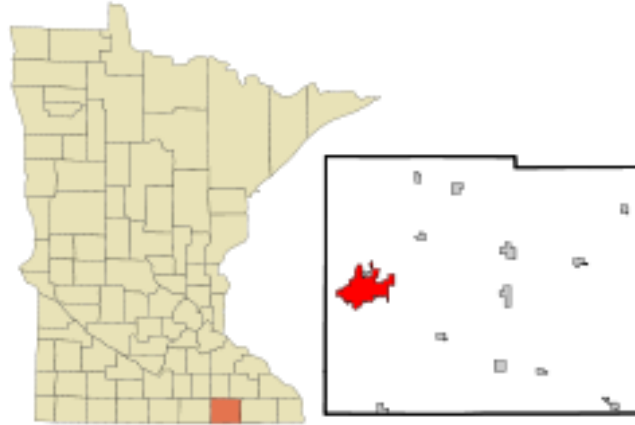
Austin, Minnesota, 163 Building Acquisitions
Update of March 2001 Study
October 2013



FEMA

Federal Emergency Management Agency
U.S. Department of Homeland Security
500 C Street, Southwest
Washington, DC 20472

October 11, 2013



City of Austin, Mower County, MN

Acknowledgements

Federal Emergency Management Agency:

Morgan Holloway, (FEMA Region V), Mitigation Specialist
William Heyse, P.E. (FEMA Region V), Risk Analysis Branch
Vaught “Peery” Ferguson (FEMA Reservist, JFO, DR-4131-MN) HPA Specialist
Allen Graybill (FEMA Reservist, JFO, DR-4131-MN) HM Group Supervisor
Donna Glover (FEMA Reservist, JFO, DR-4116-IL) GIMG
Amanda Dampitz (FEMA Local Hire, DR-4116-IL) GIS Specialist

State of Minnesota - MN Homeland Security and Emergency Management (HSEM):

Jennifer Nelson, State Hazard Mitigation Officer (SHMO)
James McClosky, HM Planner

State of Minnesota – MN Department of Natural Resources (DNR):

Pat Lynch, Flood Damage Reduction Program Manager
Mary Presnail: Floodplain Hydrologist

Mower County:

Wayne O. Madson, Emergency Management Director
Angela Knish, Environmental Services Supervisor, Mower County Public Works
Department

City of Austin:

Steven Lang, P.E., City Engineer, Director of Public Works

(Cover Photograph – Aerial view of July-2004 flooding in Austin, MN.)

(Courtesy: Star Tribune)

TABLE OF CONTENTS

Introduction	1
Background	1
History	2
History of Post 2000 Flood Events	5
A. 2001: DR-1370-MN	
B. 2004: DR-1569-MN	
C. 2008: DR-1772-MN	
D. 2010: DR-1941-MN	
History of Acquisition Projects	8
Methodology	11
A. Phase I: Initial Project Selection	
B. Phase II: Project Effectiveness Analysis	
C. Phase III: Loss Estimation Analysis	
Results	13
Conclusion	14
Limitations	14
References and Resources	16

Appendix Section

Appendix A – Flood depth-damage function table	
Appendix B – Tabulation of losses avoided due to acquisitions - 1993 floods	
Appendix C – Tabulation of losses avoided due to acquisitions - 1988 flood	
Appendix D – Tabulation of losses avoided due to acquisitions - 1978 flood	
Appendix E – Property Acquisition Map 1978	
Appendix F – Property Acquisition Map 1988	
Appendix G – Property Acquisition Map 1993	
Appendix H – Glossary of Terms	

List of Figures and Tables

Figure 1 – Map of Austin, MN with flood zones.....	3
Figure 2 – Open green space, Central Park, Austin, MN.....	4
Figure 3 – Rainfall Totals impacting Southeastern MN September 14 & 15, 2004.....	6
Figure 4 – Highest Yearly Crests for Cedar River Gauge from 2001 – 2012.....	8
Figure 5 – Bought Out and Relocated Home.....	9
Figure 5 - Green space by Wolf Creek in Todd Park, Austin, MN.....	10
Figure 6 – City of Austin Comprehensive Plan trails and open space.....	10
Table 1 – Major MN flood events 2001 – 2013.....	5
Table 2 – Formulas for determination of total acquisition costs.....	12
Table 3 – Formula for determination of losses avoided.....	12
Table 4 – Summary of losses avoided due to acquisitions.....	13
Table 5 – Disaster related repetitive costs not reflected in LAS.....	15