Floodplain Management Plans:
Not-So-New Requirement for Federally Funded Projects

Arcadia, WI, case study

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Floodplain Management Plans

• Why have a plan?
• What goes in a plan?
• How is a plan developed?
• How does the plan get used?
Why have a floodplain management plan?

You might need a floodplain management plan if:

• you have frequent flooding problems
• there is not an easy fix for reducing your communities flood risk
• you are eligible for a federally funded flood risk reduction project
What goes in a floodplain management plan?

- Flooding History
- Goals & Objectives
- Strategies & Tools
City of Arcadia, Wisconsin
downtown area is in the floodplain
flooding history

Discharge Frequency FIS
10% 8,000 cfs
2% 12,000 cfs
1% 14,000 cfs
0.2% 18,000 cfs

* Flow measured at the Dodge stream gage downstream of Arcadia
USACE has studied flood risk reduction options for Arcadia in the past

- 1956 O&M for Levee Repair and 1957 Preliminary Report
- 1960 Study (Draft) B/C 3.5
- 1965 Study
- 1988 Study (Draft)

Current USACE Feasibility Study

- Section 205 projects
- up to $10M federal cost limit
- minimum local cost share of 35%
- requires a floodplain management plan
What goes in a floodplain management plan?

- Flooding History
- Goals & Objectives
- Strategies & Tools

Action Plan
goals & objectives

Develop a collaborative multi-jurisdictional approach to floodplain management.

Reduce flood risk and mitigate the impact of flooding to community.

Improve public understanding of flood risks.

Balance development goals with ecological and hydrologic functions of the rivers and streams.

Protect and preserve the natural environment and provide compatible recreation opportunities.
strategies

- Modify human susceptibility to flood hazards
- Modify the impact of flooding
- Preserve and restoring the environmental quality of the floodplains
- Modify floodwaters (structural)
Which tools are best suited for your community?

**STRATEGY 1: Modify Human Susceptibility**
- Development Policies and Land Use Regulations
- Flood Warning Systems
- Emergency Operation Plans
- Elevation of Buildings
- Relocation of Buildings
- Wet Floodproofing
- Dry Floodproofing
- Berms and Floodwalls for Buildings
- Fill or Conversion of a Basement for Buildings
- Acquisition of Buildings

**STRATEGY 2: Modify Impacts**
- Information and Education
- Flood Insurance
- Community Rating System
- Tax Adjustments and Rebates or Grants
- Emergency Relief
- Post-Flood Recovery Processes

**STRATEGY 3: Preserve Environment**
- Wetland Protection and Restoration
- Erosion and Sediment Control
- Water Quality Enhancement
- Enhancement of Recreation and Educational Opportunities
- Preservation of Cultural Resources

**STRATEGY 4: Modify Floodwaters**
- Dams and Reservoirs
- Stormwater Detention Basins
- Levees and Floodwalls
- Landforms
- Bridge Modifications
- Channel Alterations, Diversions, and Bypasses
- Pump Stations
Action Plan brings all the pieces together

**Action Plan**
- community priorities
- associated goals
- timeline to complete
- annual review

**Flooding History**
- Trempealeau River
- Turton Creek
- Myers Valley Creek
- interior areas

**Goals & Objectives**
- collaborative approach
- reduce flood risk to life and property
- understand flood risk
- balance competing priorities
- preserve and protect environment and recreation

**Strategies & Tools**
- modify human susceptibility
- modify flood impacts
- preserve/protect environment
- modify floodwaters
action plan categories

emergency operations
- update emergency operation plans
- develop early warning system
- flood risk mapping

mitigation
- USACE feasibility study
- evaluate repetitive loss structures

policy
- adopt the floodplain management plan
- join the community rating system
- update zoning ordinance
- Create downtown business and resident registry
Mitigation Actions

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<th>Actions</th>
<th>Goal 1</th>
<th>Goal 2</th>
<th>Goal 3</th>
<th>Goal 4</th>
<th>Goal 5</th>
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<td>4. Evaluation impact of dam removal south of Orion Lane</td>
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<td>5. Transformer by the main waste water lift station</td>
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Goals

1. Collaborative multi-jurisdictional approach
2. Reduce flood risk and mitigate impacts
3. Public education – Improve Understanding of Flood Risk
4. Balance development goals with floodplain ecology
5. Protect and preserve the natural floodplain
How is a floodplain management plan developed?

Community Workshop
- identify problems
- brainstorm potential solutions

Planning Committee
- flood history
- goals & objectives
- strategies and tools
- action plan

Community Adoption
- understand the risk
- recognize the tools
- affirm shared goals
- commit to action
What is it?
- 1997 memorandum

Why was it written?
- WRDA 1996

What’s inside?
- local sponsor develops plan
- implementation of plan should reduce community’s flood risk and protect federal investment
- guidance for plan development process and contents
512 Elements

a. **Floodplain management planning (FMP):** 382 points for a community-wide floodplain management plan that follows a 10-step planning process:
   - Step 1. Organize
   - Step 2. Involve the public
   - Step 3. Coordinate
   - Step 4. Assess the hazard
   - Step 5. Assess the problem
   - Step 6. Set goals
   - Step 7. Review possible activities
   - Step 8. Draft an action plan
   - Step 9. Adopt the plan
   - Step 10. Implement, evaluate, revise.

b. **Repetitive loss area analysis (RLAA):** 140 points for a detailed mitigation plan for a repetitive loss area.

c. **Natural floodplain functions plan (NFP):** 100 points for adopting plans that protect one or more natural functions within the community’s Special Flood Hazard Area.
How does a floodplain management plan get used?

A Floodplain Management Plan is a living document.

- **Annual Update**: select / prioritize / schedule actions
- **Implement Actions**
- **Monitor Progress**
- **Document Completion**
- **Assess Effectiveness**
references

- Big Blue and Kansas River Floodplain Management Plan https://cityofmhk.com/2798/Big-Blue-River-Floodplain-Management-Pla
- Trempealeau County, Wisconsin, FIS, FEMA, April 2011