A PRESENTATION FOR THE FLOODPLAIN MANAGERS ASSOCIATION, ANNUAL CONFERENCE

FRM-101: THE PROCESS FOR FLOODPLAIN MANAGEMENT PLANS, A SHORT COURSE

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“The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation.”
WE NEED TO BE SURE WE’RE USING ALL THE TOOLS IN THE CORPS’ TOOLBOX.

SENATOR OBERSTAR, 2008

Winter flood, Missouri, 2016. Photo from Governor’s Office, MO.

1000-year “rain bombs” in Louisiana, 2016. Photo from Civil Air Patrol.

Oklahoma flooding, 2015. Photo from Floodlists.com

Millennium Flood Event, South Carolina, 2015. Photo from Sean Rayford.
CONNECTING THE DOTS
CONNECTING THE DOTS
SUCCESS IS WHEN AWARENESS LEADS TO ACTION
1. **Benefits of Implementing a Floodplain Management Plan**
2. **Background**
3. **Floodplain Management Plans**
4. **Coordination and Floodplain Management Planning**
5. **Federal Programs on Floodplain Management**
6. **Essential Elements of a Floodplain Management Plan**
7. **How To Develop a Floodplain Management Plan**
8. **The Menu of Measures for Flood Risk Management**
9. **What a Floodplain Management Plan Looks Like**
10. **Integration and Coordination Across Departments and Communities**
11. **Conclusion**
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11. Conclusion
$1 spent on mitigation yields $4 in future benefits

MAIN BENEFITS

- Elected official ability to justify local funding requests
- A playbook for how to beat flooding
- Integration across departments, communities, borders
- The process avoids pitfalls of flood hazard unawareness
- Thriving community
- Connect the dots
LIFE-CYCLE OF FLOOD RISK MANAGEMENT

“Getting Ready”
Actions taken **BEFORE** the event, including planning, training, and preparations

- Flood Risk Management system assessment / inspections
- Monitoring / forecasting threats
- State and Local Coordination
  - Reservoir operations
  - Flood Fight Preparation

“Driving Down the Risks”
Measures that **PREVENT** a disaster, reduce its chance of happening, or reduce its damaging effects.

- Modify mitigation plans
- Identify future mitigation opportunities
- Develop system improvements

“The Flood Fight”
Actions taken **DURING** the initial impact of a disaster, including those to save lives and prevent further property damage

- Emergency system strengthening
- Monitor and report flood impact
- Monitor system performance
- Support State / Local Flood Fight

“Getting back on our feet”
Actions taken **AFTER** the initial impact, including those directed toward returning to normalcy.

- Repair damaged systems
- Assess and document system performance
- Implement mitigation measures / system improvements
“Driving Down the Risks”

Measures that **PREVENT** a disaster, reduce its chance of happening, or reduce its damaging effects.

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- Identify future mitigation opportunities
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A floodplain management plan (FMP) is a written description of the flood risks and actions a community has taken and will take to address how to mitigate those flood hazards.
USACE uses a figure developed from the ISO Risk Management Model at the left as a main principle of flood mitigation within the Civil Works Program.

When a community applies this as a flood risk management program, that only begins the process of floodplain management planning.
Corps of Engineers’ Feasibility Phase

Step 1 - Specify Problems and Opportunities

Step 2 - Inventory and Forecast Conditions

Step 3 – Formulate Alternative Plans

Step 4 - Evaluate Alternative Plans

Step 5 - Compare Alternative Plans

Step 6 - Select Recommended Plan
FEMA 10-STEP HAZARD MITIGATION PLANNING PROCESS

Planning process
• 1) organize, 2) involve public, 3) coordinate

Risk assessment
• 4) assess hazard, 5) assess the problem

Mitigation strategy
• 6) set goals, 7) review possible measures or activities, 8) draft an action plan

Floodplain Management Plan maintenance
• 9) adopt plan, 10) implement measures, evaluate and revise annually
LOCAL FLOOD MITIGATION PROCESS

Step 1 - Specify Problems and Opportunities

Step 2 - Existing Conditions and Future Without Action

Step 3 – Review All Measures (activities and features)

Step 4 - Evaluate All Measures and Record and Share the Story

Step 5 - Compare Measures and Combine Measures When Possible

Step 6 – Prioritize Mitigation Measures as Specific Recommended Actions
LOCAL FLOOD MITIGATION PROCESS

Step 1 - Specify Problems and Opportunities

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Process leading to playbook

THE PLAYBOOK
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USACE REQUIREMENT FOR PARTNERING

Section 402 of WRDA 1986 as amended by Section 202 (c) of WRDA 1996… or Public Law 104-303. Any community signing an agreement for construction of a cost shared project

Goal: Protect the Federal Project!
THE PLAN & CORPS’ PROJECT PHASES

**Planning**
- Feasibility
- Alternative Formulation & Analysis
- Public Review

**Design**
- Detailed land surveys
- Real estate

**Construction**
- Land acquisition
- Placement of features

**O&M Service Life**
- Follow O&M plan
- Protect federal investment

**COLOR MEANINGS**
- USACE
- Joint (USACE & Local)
- Local

**Funding and Permits**
- Feasibility Report
- NEPA documentation
- Chief of Engineers Report
- PED Funding 65% Federal, 35% Non-Federal
- Construction Funding Project Purpose Cost Sharing
- Clean Water Act Permits: 404, 401, 106, etc.
- Plans, Specifications, Design Documentation (as needed)

**Prepare Floodplain Management Plan**
(1 year after signing Project Partnership Agreement)

**Implement Floodplain Management Plan**
(1 year after Construction)
THE PLAN & CORPS’ PROJECT PHASES

Planning
Feasibility
Alternative Formulation & Analysis
Public Review

Design
Detailed land surveys
Real estate

Build
Land acquisition
Placement of features

O&M Service Life
Follow O&M plan
Protect federal investment

Funding 50% Federal, 50% Non-Federal

PED Funding 65% Federal, 35% Non-Federal

Construction Funding Project Purpose Cost Sharing

Process Floodplain Management Plan

Prepare Floodplain Management Plan (1 year after signing Project Partnership Agreement)

Implement Floodplain Management Plan (1 year after Construction)

Feasibility Report
NEPA documentation
Chief of Engineers Report

Clean Water Act Permits: 404, 401, 106, etc.

Engineering Design Report

COLOR MEANINGS
USACE Joint (USACE & Local) Local
FEMA REQUIREMENTS

FEMA Hazard Mitigation
- Stafford Act requires states to have hazard mitigation plan
- All hazards
- Grant programs requiring this (44 CFR 201.6):
  - Hazard Mitigation Grant Program (HMGP)
  - Flood Mitigation Assistance (FMA)
  - Pre-Disaster Mitigation (PDM)

FEMA NFIP Community Rating System
- Incentives doing wise floodplain management
- FMP guidance
- Revised CRS Coordinator’s Manual
Details on FMPS

Multiple plans about actions or risk management measures can be combined into one plan, which can reduce the communities’ frustration, improve efficiency, enhance actions, and improve coordination.

- Capital Improvement Plan
- Master Plans
- Watershed Planning
- Stormwater Management Plan
- Interim Risk Reduction Measures Plan
- System-Wide Improvement Framework Plan
- Flood Risk Management Program Plan
- Local Hazard Mitigation Plan
WHAT THEY ARE...AND AREN’T

Floodplain management plans (FMPs)...
...are not floodplain ordinances,
...are not emergency action plans,
...do not replace all hazard mitigation plans,
...enhanced flood hazard mitigation planning for the local hazard mitigation plan, and
...are not the tool, but rather the toolbox!
A SHARED RESPONSIBILITY

Floodplain management planning, and risk management in general, is a responsibility shared by many entities including federal, state, local, and individuals.
The USACE Flood Risk Management Program is the **umbrella program** for all Corps’ programs related to the hazards of flooding.

Silver Jackets  
Flood Plain Management Services  
Planning Assistance to States  
Emergency Response  
P.L. 84-99 Levee Program  
Dam & Levee Safety  
FRM Business Line  

Interagency Levee Task Forces  
(on Missouri and Mississippi Rivers)  
Coastal Storm Damage Reduction  
Public Affairs Office  
Planning, Regulatory, Environmental  
FRM Planning Center of Expertise  
Federal Task Force, E011988, Unified National Plan  
R&D, Critical Infrastructure, CERB, IWR International  
Interagency Flood Risk Management Committee
AGENCIES AND COMMUNITIES AND TRIBES NEED THIS FLOOD RISK MANAGEMENT UMBRELLA

The levee sponsor, communities, counties and tribes also need a 

umbrella program

for all community's programs related to the hazards of flooding.

Building Codes
Emergency Management
Fire Department
Public Outreach

Planning Department
Department of Engineering
Department of Public Works
Levee and Drainage Districts
Within a community, multiple departments have a role in risk management, especially those in public works and emergency management, and the departments can more effectively reduce flood risks when working together when these roles are documented.
### ROLES AND RESPONSIBILITIES

#### COMMUNITY

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#### Role Definitions

- **Responsible**
- **Accountable**
- **Consult**
- **Inform**

![Roles & Responsibility Icon]
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FEDERAL ASSISTANCE WITH FLOOD RISK MANAGEMENT

Some federal programs can address mitigation and do it through the processes defined for FMPs.

FEMA has assistance in several forms.
- FEMA provides annual grants to state hazard mitigation teams.
- FEMA assistance encourages local hazard mitigation plans that include flood hazards.
- FEMA regions have hazard mitigation planners on staff to provide guidance.

USACE provides technical assistance in many ways.
- USACE expertise is not limited to doing risk assessments, such as hydraulic modeling to determine flood risks, but also can be used to develop and do planning work about flood risk management measures.
- USACE has emergency management expertise can aid communities in mitigating flood risks.
- USACE planners can help communities develop FMPs through studies and design work, including public involvement efforts.
CORPS OF ENGINEERS HELP

Flood Risk Management (FRM)

Silver Jackets Program, Interagency Program Guide

National Nonstructural / Flood Proofing Committee

FloodPlain Management Services Program, FPMS Factsheet

Planning Assistance to States, PAS Factsheet

Continuing Authorities Program, FRM FAQ and CAP details
OTHER FEDERAL PARTNERS’ PROGRAMS

DOT Emergency Relief

EPA Water Infrastructure and Finance Innovation Act Program
  – https://www.epa.gov/wifia/learn-about-wifia-program

EPA Green Infrastructure Program
  – https://www.epa.gov/green-infrastructure

EPA Clean Water Act Section 319 Grants

FEMA National Flood Insurance Program
  – https://www.fema.gov/national-flood-insurance-program

FEMA NFIP, the Community Rating System
OTHER FEDERAL PARTNERS’ PROGRAMS

FEMA Flood Mitigation Assistance Grant Program
   – https://www.fema.gov/flood-mitigation-assistance-grant-program

FEMA Hazard Mitigation Grant Program
   – https://www.fema.gov/hazard-mitigation-grant-program

FEMA Public Assistance Grants

HUD Community Development Block Grants
   – https://www.hudexchange.info/programs/cdbg-dr/

NOAA Storm Surge and Coastal Inundation Modeling, Forecasting, and Prediction
   – http://www.stormsurge.noaa.gov/models_obs_modeling.html

NRCS Agricultural Conservation Easement Program

NRCS Emergency Watershed Protection Program

NRCS Watershed and Flood Prevention Operations Program
OTHER FEDERAL PARTNERS’ PROGRAMS

NWS Advanced Hydrologic Prediction Services and River and Flood Forecasts
   – http://water.weather.gov/ahps2/

SBA Disaster Loan Program

USGS National Streamflow Information Program
   – http://water.usgs.gov/nsip/

USGS Assessing Societal Vulnerability to Natural Hazards Program helps identify members of community particularly vulnerable to the impacts of flooding.
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FOLLOW THESE STEPS AND MAKE YOUR PLAYBOOK

A good floodplain management plan is a product of an interactive **process** with the stakeholders, the public, and the community elected officials or decision makers.

- Understand of the flood **risk**

- Document the process’ **decision history**

- Get **public participation**, list the **goals**, workout the best measures

- **Evaluate** every single measure

- List your **actions** about the right measures
  - What will be done
  - When
  - Who will be doing it

Use the plan to define your communities communication processes, including roles & responsibilities and a charter of commitment.
FLOOD RISKS DEFINED

Flood hazards that need to be discussed in your floodplain management plan:

- Inundation and Depth
- Velocity
- Proximity of the Population / Consequences
- Rate of Rise

Consider amount of warning time.

Know where critical structures are and what your critical infrastructure is.
GOALS – THE DESTINATION

Agreement is needed on the general goal or goals.

Is the goal to…

- Prevent loss of life?
- Reduce flood damage?
- Restore environmental areas?
- Preserve cultural resources?

These are some possible examples, but they do not include specifics, which would help.
EVALUATING MEASURES

Each measure needs a community-level decision and evaluated with public input. One of these four terms should be tagged to each measure in order to adequately complete an FMP and effectively include the public in the risk informed decision making process:

“Not Recommended”

“Further Evaluation Needed”

“Recommended”

“Effective”

All these terms are needed, as their definitions helped the community to identify the action items in their hazard mitigation efforts.
“Not Recommended” The tool was evaluated and not found to be appropriate for the community.

A feature like Dams may simply not be possible due to lack of real estate.

An activity like Building Codes may not be useful in entirely undeveloped farm land.

“Further Evaluation Needed” The tool is appropriate, but funds needed to study more.

Freeboard Ordinance might need to be compared to potential Zoning.

Channel Widening may need further hydraulic study to address bridges.
“Recommended” The tool has been studied and is known to work in the community, although has yet to be done.

An activity like a land regulation needs time to develop before adoption

A feature like a Levee awaiting construction funds, design, real estate

“Effective” (or “Highly Effective”) These are the tools that have been chosen and implemented, and have proven reduced flood risk.

Channel Deepening feature still requires maintenance and scour repair

A Stream Setback Distance that has proven to prevent flood damage
ACTION PLAN

- This is the most important essential element of the FMP.
- The list of actions depends on the decisions about the measures.
- These actions will be prioritized.
- The action list is the basis for the next steps
ACTIONS - PRIORITY

The FMP becomes a playbook as the terms help the leader that is champion for the FMP translates each measure’s evaluation into an action. The final step will be prioritizing the actions.

- This is informed by the risk portfolio that comes from the risk assessment.
- Identified actions that will get first budget priority.
- Dates should be generally expressed, where at least short-term and long-term items are defined.
ACTIONS - ROLES

The **actions** are a key part of hazard mitigation, and to be successful, each action needs:

- a **role** of who tackles it,
- a date for when it will be done, and
- A list of those that should be consulted and informed along the way.

Some would be actions that can be achieved in a year, but many would likely be identified for the long-term.

FEMA CRS ISO auditors check each annual revision, and a higher point total is given for documentation showing completed work. Clever floodplain leaders know how to select actions achievable in each year.
PITFALLS

Pitfalls regarding these Essential Elements:

- A detailed risk assessment can unnecessarily delay an FMP. A detailed risk assessment can be a future action item.
- Not including the public will significantly undermine the success of an FMP, because they need to be aware of the risks and involved in narrowing the list of measures.
- Decisions made without integrated process across departments can waste funding or miss opportunities.
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DEVELOPMENT PROCESS

- Identify a planner that will have **responsibility** for the long-term stewardship of the FMP.
- Organize **public involvement**, including between technical experts and then at the level for those unfamiliar with solutions to flood hazards.
  - Gain **public** understanding of the flood risks including a risk assessment that identifies and analyzes the risks.
  - Have the **public** involved in the **goals** for addressing the floodplain management planning effort, because floodplains can be used many ways and the goals will determine how each measure is evaluated.
  - Get **public engagement** in reviewing measures to increase agreement about the needed actions and document these meetings, including the stakeholders’ views on whether each and every measure is evaluated as Not Recommended, Further Evaluation Needed, Recommended, or Effective.
- Once developed, the lead planner pursue each action
- Revise the FMP periodically, re-evaluate the measures, adopt new priorities
- Be mindful that one community’s developed FMP will be unique and that no standard FMP exists.
GOOD FLOODPLAIN MANAGEMENT PLANS ARE A VEHICLE FOR THE PUBLIC SUCCESS

Informing and listening to the public

Engage in problem solving

Develop agreements on actions needed

Good floodplain management planning helps us move from…
PUBLIC INVOLVEMENT

Orbits of Participation

- **Technical Advisory Group (Co-Decision Makers)**, they explain technical details for outer orbits.
- **Public Awareness Workgroup (Active Participants)**
- **Public stakeholders** in project area (Technical Reviewers)
- **Other public participants** that engage (Commenters)
- **General public** (Observers)
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The Menu of Measures may be put in two sets. Many of these items are activities, while some are features that can be built.

**Floodplains**
- Nonstructural flood proofing measures include:
  - Elevation
  - Relocation
  - Buyout / Acquisition
  - Dry Flood Proofing
  - Wet Flood Proofing
- Nonphysical nonstructural measures include:
  - Flood Warning Systems
  - Flood Insurance
  - Floodplain Mapping
  - Flood Emergency Preparedness Plans
  - Land Use Regulation
  - Zoning
  - Evacuation Plans
  - Risk Communication

**Floodwaters**
- Physical or structural measures include constructible features such as:
  - Detention Basins
  - Dams
  - Floodwalls
  - Levees and Berms
  - Channel
    - Straightening
    - Widening
    - Deepening
    - Diversions
  - Bridge Enlargements
  - Conveyance Modifications
- And these activities:
  - Clearing and Snagging Debris
  - Pumping
  - Land Treatment And Infiltration
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The typical FMP includes:

- a simple picture of the risks,
- the list of solutions, and
- prioritized next steps,

This is like a playbook that says who does what and when they will do it.
What It Looks Like
**GOALS AND OBJECTIVES**

**Goal:** Manage flood risk along Brush Creek and its tributaries.

- Compile known flood risks in the watershed from local stakeholders and characterize the flood risks in terms of public safety (depth, velocity, population-at-risk, warning time and rate-of-rise).
- Evaluate and improve existing flood warning systems and response plans.
- Use a multipurpose stream corridor approach to manage flood risks (floodproofing, building elevation, buyouts, etc.).
- Evaluate basin-wide greenworks (BMPs, LID, native species, rain gardens, etc.) with specific focus on 20%-chance to 50%-chance flood events.
- Develop and implement land use planning tools (i.e. green solutions, buffer zones, buyouts) focused on flood risk management.
- Assess the performance of the basin’s combined stormwater infrastructure as a system (specifically detention basins and design standards).
- Establish a process for consistent and transparent technical review of no-rise certifications and watershed impact issues for stronger watershed management (and develop required organizational structure).
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8.0 APPENDICES
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APPENDIX 2: FORT RILEY MEMO
APPENDIX 3: HOLEMAN MEMO
APPENDIX 4: CITY ORDINANCE
TABLE 9. ACTION ITEMS, GOALS, AND RECOMMENDATIONS.

<table>
<thead>
<tr>
<th>Action Item</th>
<th>Goal: Collaborative Approach</th>
<th>Goal: Manage &amp; Reduce Flood Risks</th>
<th>Goal: Preserve Riparian Corridor</th>
<th>Goal: Development &amp; Floodplain Functions</th>
<th>Goal: Improve Public Understanding of Flood Risks</th>
<th>City</th>
<th>County</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adopt the Wildcat Creek Floodplain Management Plan (FMP)</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>3 months</td>
</tr>
<tr>
<td>Create a City/County Development Coordination Process</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>3 months</td>
</tr>
<tr>
<td>Amend the Multi-Jurisdictional Hazard Mitigation Plan to include the FMP</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>6 - 12 months</td>
</tr>
<tr>
<td>Research and, if acceptable, form a Wildcat Creek Watershed District</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>2+ years</td>
</tr>
<tr>
<td>Develop a comprehensive flood hazard mitigation plan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>2+ years</td>
</tr>
<tr>
<td>Adopt Future Conditions model and Flood Insurance Rate Maps</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1 year</td>
</tr>
<tr>
<td>Research and adopt higher standard flood plain regulations</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>1 year</td>
</tr>
<tr>
<td>Develop a Wildcat Creek recreation plan</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>12 - 18 months</td>
</tr>
<tr>
<td>Develop a comprehensive public outreach plan</td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>12 months</td>
</tr>
<tr>
<td>Research and update, where needed development policies and regulations</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>12 months</td>
</tr>
<tr>
<td>Adopt stormwater detention/retention policies</td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td>12 - 18 months</td>
</tr>
<tr>
<td>Join the Community Rating System</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>12 - 18 months</td>
</tr>
<tr>
<td>Maintain and expand the existing flood warning systems</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>On-going</td>
</tr>
</tbody>
</table>
1. Benefits of Implementing a Floodplain Management Plan
2. Background
3. Floodplain Management Plans
4. Coordination and Floodplain Management Planning
5. Federal Programs on Floodplain Management
6. Essential Elements of a Floodplain Management Plan
   How To Develop a Floodplain Management Plan
7. The Menu of Measures for Flood Risk Management
8. What a Floodplain Management Plan Looks Like
9. Integration and Coordination Across Departments and Communities
10. Conclusion
The reality is mitigation efforts overlap with other activities in the flood risk management life-cycle, and when departments or various disciplines do not coordinate, we frequently miss opportunities.

People in specific roles and departments are proponents for various measures.
Sound floodplain management planning depends on communities coordinating across multiple entities (cities, counties, levee sponsors, drainage districts) and can clarify overlapping responsibilities to more effectively manage risks.
COORDINATING - EXTERNALLY

Should there be one way communication?

Should there be two way communications in some cases?
MODULE CONTENTS

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Return to Menu
HOW CAN WE IMPROVE RESILIENCE?

Stuck in the build-disaster-rebuild cycle

No Action
To Reduce Risk

Initial Level
Study and / or Implement a Flood Risk Management Measure

Breaking the cycle…Improved level of resiliency
Incomplete features, like flood walls do not improve resilience. Unadopted activities, like a land regulation, do not improve resilience either.
Assess Flood Risks and Communicate

Natural Features, Buyouts, Natural Storage, Infrastructure Zoning, Building Codes, Flood Proofing, Insurance, Contingency Plans, Elevating Structures, Risk Communication

Flood Fight, System Maintenance, Evacuation, Floodplain Management Planning and Actions, Risk Awareness and Communication

Know Your Risk

Take Action To Reduce Risk

Manage and Reduce Risk

Objective Level of Resilience

Initial Level

ACTIONS THAT MAY BE DONE OVER TIME.

(Placed In Three Categories)

KNOW YOUR ROLE

- Federal / State / Local
- Local
- Individual Property Owner
- ALL
Improved Level of Resilience Using a Variety of Tools

Combined Effect To Level of Resilience with Various Actions

Combined Actions That May Be Done Over Time
To achieve the highest level of resilience requires collaboration. We’re better together. That’s how you achieve lower risk and a resilient state.
Newly elected local official

Awareness of community’s flood risk

Decision to address missing flood resiliency

Interactive problem solving

Local Champion
PERIODIC DIALOGUE ACROSS DEPARTMENTS, ROLES, AND WITH ALL THE STAKEHOLDERS WILL RESULT IN SHARED RESPONSIBILITY AND MOVE THE ENTIRE COMMUNITY TOWARD RESILIENCY

Values of ecosystems, recreation, aesthetics...

Raise awareness so local official knows risks

Common goals for hazard mitigation

End the reliance on one measure

Create momentum toward flood resilience

Like the thread in a patch-work quilt, a Floodplain Management Plan weaves it all together.
THANKS FOR YOUR TIME!
A floodplain management plan is a playbook for managing flood risks. These plans typically have the following main elements:

- Risk Assessment - Understand the flood risk
- Evaluation of All Measures - Document the decision history about the full menu of flood risk management measures (physical and nonphysical) (features and activities)
- Risk Informed Decision Making - Get public participation
- List - Prioritize the community’s risk management actions (measures)
  - What will be done
  - Who will be doing it
  - When

Funding Justification - Use the plan to help local elected officials understand the prioritized actions, as well as communication processes, roles & responsibilities, and flood story