

# Flood Resilience Planning Integration Tool

Supporting Local Governments Incorporate Flood  
Resilience into Local Planning Mechanisms



April 2026

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## **Acronyms and Abbreviations**

CFPF: Community Flood Preparedness Fund

CIP: Capital Improvement Plan

DCR: Virginia Department of Conservation and Recreation

EOP: Emergency Operations Plan

HMP: Hazard Mitigation Plan

ORP: Office of Resilience Planning

## About This Tool

### TOOL PURPOSE

Regional and local resilience plans identify priority actions to reduce risk, strengthen infrastructure, protect natural systems, and improve community well-being, but often lack clear mechanisms for local implementation. Without clear mechanisms for local implementation and integration with other plans, these resilience strategies risk remaining aspirational rather than actionable. The Resilience Plan Alignment Tool provides a standardized, scalable framework for local governments across Virginia to systematically integrate flood resilience projects and priorities into: Hazard Mitigation Plans, Comprehensive Plans, Capital Improvement Plans, Zoning Ordinances, Emergency Operations Plans, Parks and Open Space Plans, and departmental policies and staffing structures.

By shifting resilience from a stand-alone planning effort to a cross-departmental collaborative approach, localities can: improve implementation of local, regional, and state resilience priorities, strengthen funding competitiveness, increase institutional capacity and continuity, and promote equitable and long-term adaptation to flood risk.

### INTENDED AUDIENCE

This tool is designed for local government staff who lead or coordinate planning efforts; typically, a Planning Director, Resilience Coordinator, Emergency Manager, or similar role. As resilience integration spans multiple departments, the process is most effective when led by one point of contact who can convene staff across departments including Community Development, Emergency Management, Public Works, Parks and Recreation, and Budget/Finance.

### WHEN TO USE THIS TOOL

This tool can be used at any time, but the following moments are ideal for completing or revisiting the alignment analysis:

- When a local plan is approaching its scheduled update or amendment cycle
- Following adoption of a new or updated Flood Resilience Plan
- After a significant flood event that has exposed gaps in local planning
- When applying for hazard mitigation or resilience funding, where demonstrated plan alignment can strengthen a competitive grant application

The analysis for every planning mechanism does not need to be completed at once. Starting with one or two plans, such as those due for update soon, is a practical way to begin.

### LEVEL OF EFFORT REQUIRED

The level of effort needed to complete this tool is moderate and can be scaled based on staff capacity and priorities. Initial completion typically requires coordination across departments and a focused review of existing plans, which may take several hours to a few days depending on the planning mechanisms analyzed and familiarity with local documents. However, the tool is designed to be flexible and iterative. Localities can complete the tool one plan at a time, integrate findings into existing update cycles and revisit the analysis as needed. While some upfront coordination is required, the process ultimately streamlines future planning efforts by reducing redundancy, improving alignment across departments, and strengthening readiness for funding opportunities.

## Instructions

### STEP 1: PLAN INVENTORY

- Identify the local plans, ordinances, and budgets adopted by the planning region to guide planning and development. From this list, select which planning mechanism(s) will be reviewed for alignment with the Flood Resilience Plan. The analysis for every planning mechanism does not need to be completed at once. This can be completed incrementally over time.
  - See Figure 1 for a recommended prioritization of planning mechanisms to consider.
- For each selected planning mechanism, record its status, update cycles, responsible department for development, and points of contact in the Tool Template section below (p. 8).
- If there are local planning mechanisms in place that are *not* reviewed, still record them in the inventory and note that they are not applicable for integration at this time.

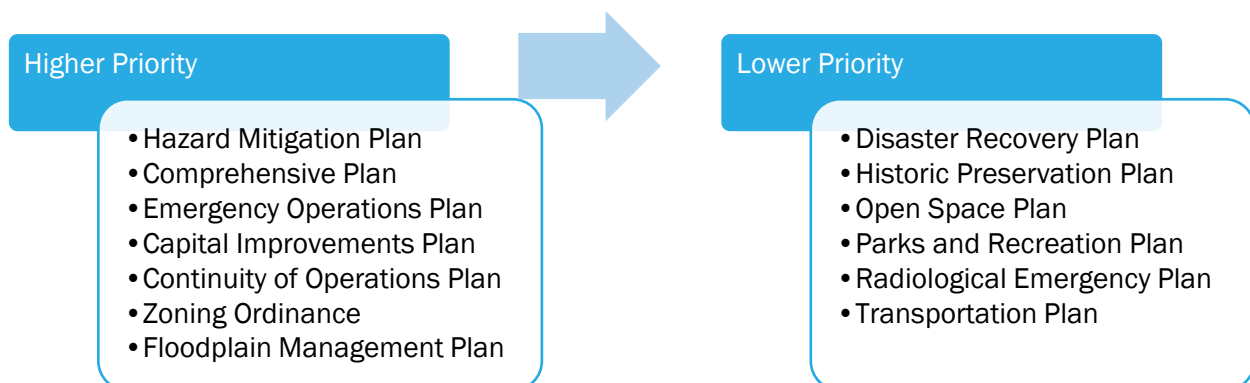


Figure 1. Suggested Local Plan, Ordinances, and Budgets for Review

**STEP 2: RESILIENCE PLAN ANALYSIS**

- Identify which flood resilience projects and/or strategies are assigned to the locality of analysis and record them in the Tool Template (p. 9).
- For each strategy identified in the previous bullet:
  - Assign a theme from the drop-down menu that best represents the project/strategy.
  - Identify the relevant local planning mechanism(s) where that project/strategy can be integrated. If a project or strategy applies to more than one mechanism, create a separate row for each one.

**STEP 3: INTEGRATION OPPORTUNITIES AND ALIGNMENT PLAN**

- Create one table per planning mechanism analyzed. Each table is pre-formatted in the Tool Template section (p. 10-11), copy additional tables as needed.
- List the flood resilience projects and strategies that were identified as relevant to that planning mechanism.
- For each one, document any existing language that is relevant to the flood resilience project/strategy and record whether alignment currently exists; mark aligned, conflicting, or gap.
  - **Aligned:** The planning mechanism already includes a strategy to accomplish the identified flood resilience goal.
  - **Conflicting:** The planning mechanism has a strategy that contradicts or prohibits the identified flood resilience goal from being implemented.
  - **Gap:** The planning mechanism does not include a strategy to accomplish the identified flood resilience goal.
- If the project/strategy is marked as a 'gap':
  - Identify the location in the local planning mechanism(s) the project or strategy can best be integrated, draft suggested language, and assign responsible departments.
- If the project/strategy is marked as 'conflicting':
  - Identify any data/definitions that must be aligned and draft suggested language to mitigate the conflict.
- If the project/strategy is marked as 'aligned', no further action is needed.

### **STEP 4: COORDINATION AND FINALIZATION**

- Share the completed alignment tables from Step 3 with the lead departments identified for each project and strategy. Allow time for them to review and provide feedback before finalizing recommendations.
- Share the draft alignment recommendations with the regional planning district commission and with the DCR Office of Resilience Planning for review and technical assistance.
- Use the Step 4 coordination table in the Tool Template (p. 11) to log which departments received the draft, the date shared, and any follow-up actions needed.
- Once feedback is incorporated, finalize the alignment plan and coordinate with each responsible department to integrate the recommended language at the relevant planning mechanism's next scheduled update or amendment cycle.

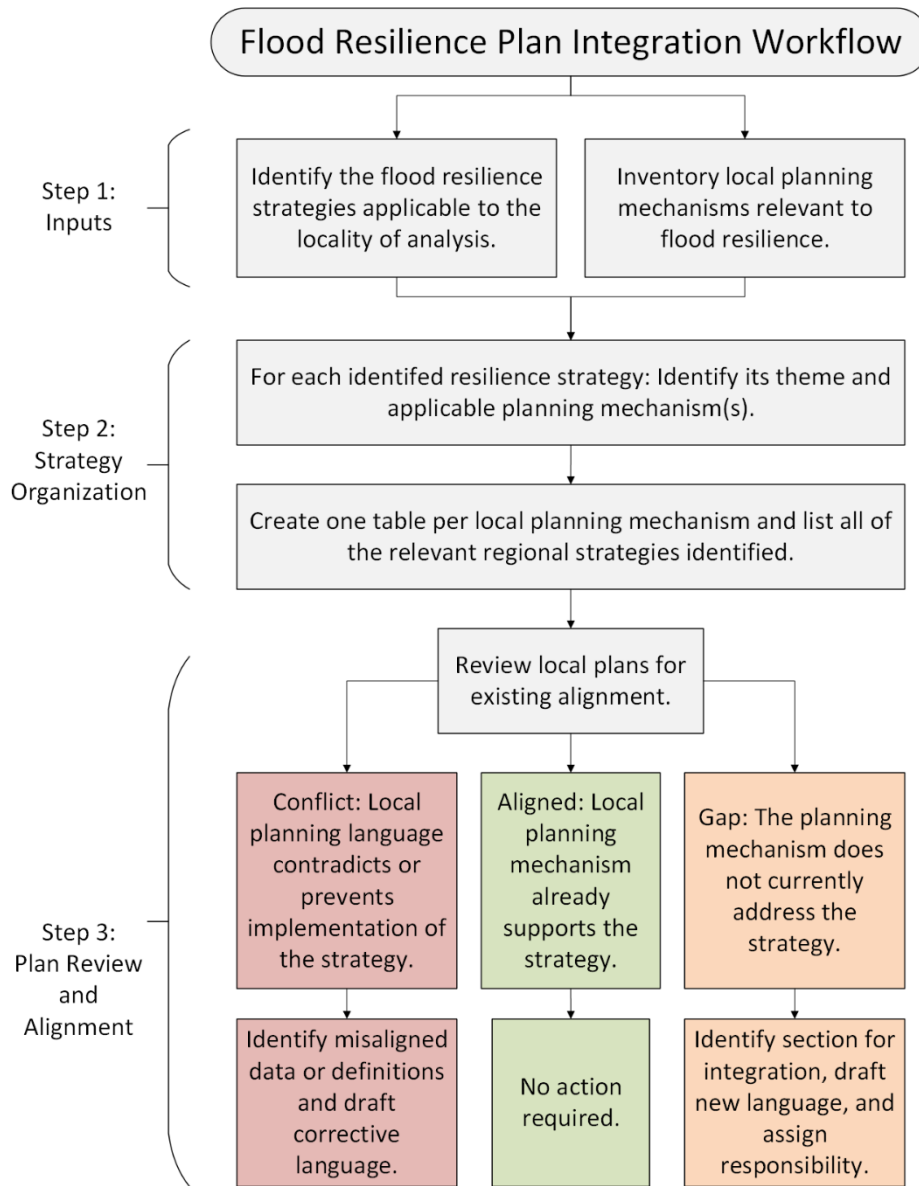


Figure 2. Plan Integration Tool Workflow

## Tool Template

This section provides a template to use when completing each of the steps described in the instructions.

### LOCALITY IDENTIFICATION

The following analysis is being conducted for \_\_\_\_ **County/Town** located in the \_\_\_\_ Planning Region.

### STEP 1: PLAN INVENTORY

List all relevant local plans, budgets, ordinances, and other planning mechanisms used in the county or town of analysis that may intersect with flood resilience. Include lead department responsible for development, and its update cycle. While the analysis for every planning mechanism does not need to be completed all at once, it will be helpful to have a list of all that are intended to be analyzed.

This information can often be found in the Capability Assessment of the Regional Hazard Mitigation Plan.

Planning Mechanism Name	Lead Department	Last Updated	Planning Cycle	Next Update	Plan Location



**STEP 3: INTEGRATION OPPORTUNITIES AND ALIGNMENT PLAN**

Identify how the projects and strategies identified in Step 2 can be integrated into local planning mechanisms. Create a separate table for each local planning mechanism. Using the column labeled “Relevant Local Planning Mechanism” from Step 2, separate the resilience projects and strategies by relevant local planning mechanism. For each one, check whether it is already integrated into the mechanism being analyzing. If it is already aligned, use the dropdown menu to mark it as such and move to the next project/strategy. If it is not, suggest language, a section, and a lead department for integration. This can be done for one plan at a time, the full analysis for every plan does not need to be completed at once.

**Hazard Mitigation Plan Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**Comprehensive Plan Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**Emergency Operations Plan Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**Capital Improvements Plan Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**Public Education and Outreach Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**Parks, Recreation, and Open Space Plan Integration**

Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
			Choose an item.			
			Choose an item.			
			Choose an item.			
			Choose an item.			

**STEP 4: COORDINATION & FINALIZATION**

Share the draft alignment recommendations with the lead departments noted in Step 3, as well as the planning district commission, and ORP.

Department/Office Shared With	Date Shared	Follow-up Action

## General Strategies to Integrate Resilience in Local Plans

### HAZARD MITIGATION PLANS

- Incorporate the most current hazard identification and vulnerability assessments, including floodplain mapping, climate projections, and repetitive loss data, to inform mitigation priorities.
- Establish clear, measurable mitigation goals and actions that reduce long-term risk to life, property, and critical infrastructure.
- Align mitigation strategies with future land use planning by discouraging development in high-risk areas and promoting resilient growth patterns.
- Identify and prioritize projects such as floodplain restoration, stormwater system upgrades, property acquisition/relocation, and elevation of structures in flood-prone areas.
- Promote equitable mitigation by prioritizing resources and outreach to socially vulnerable and historically underserved populations.

### COMPREHENSIVE PLANS

- Incorporate updated hazard vulnerability data, alignment of growth areas with low-risk zones, and inclusion of mitigation goals.
- Consider updating floodplain development regulations and incorporating No Adverse Impact requirements that increase flood protection for new and existing development.
- Promote the use of green infrastructure and other stormwater management practices to reduce runoff that contributes to flooding.
- Provide affordable housing in safe areas that are not prone to flooding.

### ZONING ORDINANCES AND LAND USE PLANS

- Include hazard-reducing provisions such as flood zone overlay districts, impervious surface limits, stormwater management standards (BMPs), and site improvement requirements based on hazard data.
- Direct new growth away from designated flood hazard risk areas.
- Promote land use patterns that reduce exposure to hazards and keep vulnerable development out of floodplains and other known hazard areas.
- Identify equitable relocation strategies for repetitive loss structures.

### CAPITAL IMPROVEMENT PROGRAM BUDGETS

- Prioritize resilience infrastructure including stormwater upgrades, green infrastructure, and emergency shelters.
- Evaluate long-term cost savings of resilience investments by comparing the upfront cost of mitigation projects with the avoided damages from future flood events.
- Incorporate lifecycle cost analysis to ensure that CIP dollars are directed toward projects that reduce long-term maintenance and recovery expenses.

### EMERGENCY OPERATIONS PLANS

- Incorporate hazard risk scenarios from the HMP and promote coordination with long-range land use and infrastructure planning.
- Ensure evacuation shelters are located outside flood hazard areas.
- Develop a Severe Weather Debris Management Plan using [DEQ, FEMA, and EPA guides](#) as a reference.

## Appendix A: Completed Worksheet Example

See below for a completed worksheet example from Fauquier County.

### Step 1. Plan Inventory

Planning Mechanism Name	Lead Department	Last Updated	Planning Cycle	Next Update	Plan Location
Comprehensive Plan	Community Development	August 2015	Annual amendments	Ad hoc	<a href="#">Comprehensive Plan   Fauquier County, VA</a>
Capital Improvement Plan (CIP)	Management and Budget	June 2025	Annual	June 2026	<a href="#">CIP   Fauquier County, VA</a>
Emergency Operations Plan (EOP)	Emergency Management	November 2022	4 years	November 2026	<a href="#">EOP   Fauquier County, VA</a>
Parks and Open Space Plan	Parks and Recreation	March 2021	Ad hoc	Ad hoc	<a href="#">Parks, Rec, and Open Space Plan</a>
Comprehensive Drought Management and Emergency Preparedness Plan	Emergency Management	August 2016	Ad hoc	Ad hoc	<a href="#">Comprehensive Drought Management and Emergency Preparedness Plan</a>
Fauquier County Zoning Ordinance - Floodplains	Community Development	April 2025	Ad hoc	Ad hoc	<a href="#">Fauquier County Floodplain Ordinance</a>

### Step 2. Resilience Plan Analysis

RRRC Flood Resilience Strategy (Chapter 5)	Theme	Relevant Local Planning Mechanism(s)
FC-1: Join the Community Rating System program to reduce the flood insurance premium of citizens in Fauquier County and to foster better floodplain management practices.	Education and Outreach	Comprehensive Plan
FC-2: Encourage residents to keep storm drains clear of debris during storms	Education and Outreach	Emergency Operations Plan
FC-3: Develop an education and outreach plan for the upcoming changes in FEMA flood mapping and Flood Insurance Rate Maps (FIRM) for property owners and general public	Education and Outreach	Public Education and Outreach
FC-4: Riparian Restoration for Flood Prevention – Revegetate a 500-foot length of Cedar Run Creek to mitigate against flood events, slow down flood waters, stabilize soil, and reduce erosion	Nature Based Solutions/Projects	Comprehensive Plan
FC-4: Riparian Restoration for Flood Prevention – Revegetate a 500-foot length of Cedar Run Creek to mitigate against flood events, slow down flood waters, stabilize soil, and reduce erosion	Nature Based Solutions/Projects	Capital Improvements Plan
FC-5: Stormwater mitigation and habitat creation – Engineering design and installation/ replacement of three stormwater roadside ditches into bioswales through the planting of herbaceous native plants to create habitat, increase stormwater uptake and water quality.	Nature Based Solutions/Projects	Comprehensive Plan
FC-5: Stormwater mitigation and habitat creation – Engineering design and installation/ replacement of three stormwater roadside ditches into bioswales through the planting of herbaceous native plants to create habitat, increase stormwater uptake and water quality.	Nature Based Solutions/Projects	Capital Improvements Plan
FC-6: Retain thick vegetative cover on public lands flanking river to reduce the potential of erosion.	Nature Based Solutions/Projects	Comprehensive Plan
FC-6: Retain thick vegetative cover on public lands flanking river to reduce the potential of erosion.	Nature Based Solutions/Projects	Parks and Open Space Plan
FC-7: Limit the percentage of impervious surface with developed parcels	Nature Based Solutions/Projects	Comprehensive Plan
FC-8: Substitute porous surfaces/pavement for impervious pavement when appropriate to reduce flooding caused by runoff.	Nature Based Solutions/Projects	Comprehensive Plan

RRRC Flood Resilience Strategy (Chapter 5)	Theme	Relevant Local Planning Mechanism(s)
FC-9: Work with RRRC to conduct a crosswalk with other relevant regional and local plans to identify planning and/or implementation projects that may be eligible for HMGP and/or appropriate alternative HMP, VA CFPF, or other funding sources.	Study/Plan/Strategy	Comprehensive Plan
FC-10: Implement a community or Regional Debris Management Strategy	Study/Plan/Strategy	Emergency Operations Plan
FC-12: Incorporate into emergency response plans the procedure for tracking high water marks following a flood	Study/Plan/Strategy	Emergency Operations Plan
FC-13: Develop an open space acquisition, reuse, and preservation plan targeting flood hazard areas.	Study/Plan/Strategy	Comprehensive Plan
FC-14: Consider acquisition, elevation, or flood-proofing of structures with repetitive loss claims to the National Flood Insurance Program	Infrastructure	Capital Improvements Plan
FC-15: Relocation of structures out of the floodplain	Infrastructure	Capital Improvements Plan
FC-16: Designate a local floodplain manager/CRS coordination that achieves Certified Floodplain Manager certification	Staffing	County Budget/staffing plan

**Step 3. Integration Opportunities and Alignment Plan**

Comprehensive Plan Integration

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
FC-1: Join the Community Rating System program to reduce the flood insurance premium of citizens in Fauquier County and to foster better floodplain management practices	No reference	No reference	Gap	The County will evaluate and pursue participation in FEMA’s CRS program to strengthen floodplain management practices and reduce flood insurance premiums for residents	Chapter 2: Natural Resources	Community Development
FC-4: Riparian Restoration for Flood Prevention – Revegetate a 500-foot length of Cedar Run Creek to mitigate against flood events, slow down flood waters, stabilize soil, and reduce erosion	Facilitate, augment and support existing programs and efforts to establish streamside vegetative buffers. This may include but not be limited to exploring means in which buffers may serve multiple purposes; for example, community amenities such as greenway trails working as buffers.	Chapter 2A pg. 15	Aligned	n/a	n/a	n/a
FC-6: Retain thick vegetative cover on public lands flanking river to reduce the potential of erosion.	Encourage the establishment of stream buffers for water quality protection.	Chapter 2A pg. 15	Aligned	n/a	n/a	n/a
FC-7: Limit the percentage of impervious surface with developed parcels	No reference	No reference	Gap	To reduce runoff, erosion, and localized flooding, the County will explore establishing maximum impervious surface ratios and encourage low-impact development.	Chapter 2A: Natural Resources	Community Development
FC-8: Substitute porous surfaces/pavement for impervious pavement when appropriate to reduce flooding caused by runoff.	No reference	No reference	Gap	Projects should incorporate permeable pavement and/or porous pavers where feasible to reduce runoff volume.	Chapter 2A: Natural Resources	Community Development
FC-9: Work with RRRC to conduct a crosswalk with other relevant regional and local plans to identify planning and/or implementation projects that may be	No reference	No reference	Gap	The County will prioritize regional collaboration in order to maximize funding	Chapter 1: Vision and Goals	Community Development, RRRC

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
eligible for HMGP and/or appropriate alternative HMP, VA CFPF, or other funding sources.				opportunities for planning and implementation projects.		
FC-13: Develop an open space acquisition, reuse, and preservation plan targeting flood hazard areas.	No reference	No reference	Gap	Evaluate and prioritize the acquisition or conservation of open space within flood-prone areas to reduce flood risk, create natural buffers, and expand opportunities for nature-based solutions.	Chapter 2: Natural Resources	Community Development, Parks and Rec
FC-16: Designate a local floodplain manager/CRS coordination that achieves Certified Floodplain Manager certification	No reference	No reference	Gap	The County will pursue participation in FEMA's Community Rating System (CRS) to reduce flood risk, strengthen floodplain management practices, and lower flood insurance costs for residents,	Chapter 2: Natural Resources	Community Development

Emergency Operations Plan Integration

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
FC-10: Implement a community or Regional Debris Management Strategy	Fauquier County notes that an informational product was developed, but is currently exploring way to secure the resources, capacity, and expertise to develop a full plan.	Section 3 pg. 58	Gap	Fauquier County will update and formalize a Debris Management Plan to guide post-disaster debris disposal and coordination with regional partners. This plan will be incorporated as an annex to the EOP.	Emergency Operations Plan: Debris Management Annex	Emergency Management
FC-12: Incorporate into emergency response plans the procedure for tracking high water marks following a flood	No reference	No reference	Gap	Following all flood events, the County will deploy field staff to document high water marks in accordance with FEMA guidance. This information will be shared with Community Development and included in future Hazard Mitigation Plans.	IX: Recovery operations	Emergency Management, GIS

Capital Improvements Plan Integration

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
FC-4: Riparian Restoration for Flood Prevention – Revegetate a 500-foot length of Cedar Run Creek	No reference	No reference	Gap	Riparian restoration for flood prevention at Cedar Run Creek	Environmental Services	Public Works, Community Development
FC-5: Stormwater mitigation and habitat creation – Engineering design and installation/ replacement of three stormwater roadside ditches into bioswales through the planting of herbaceous native plants to create habitat, increase stormwater uptake and water quality.	No reference	No reference	Gap	Bioswale installation	Environmental Services	Public Works, Community Development
FC-14: Consider acquisition, elevation, or flood-proofing of structures with repetitive loss claims to the National Flood Insurance Program	No reference	No reference	Gap	Relocation of structures out of the floodplain	Utilities/ Infrastructure	Public Works, Community Development
FC-15: Relocation of structures out of the floodplain	No reference	No reference	Gap	Relocation of structures out of the floodplain	Utilities/ Infrastructure	Public Works, Community Development

Public Education and Outreach Integration

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
FC-2: Encourage residents to keep storm drains clear of debris during storms	No reference	No reference	Gap	The County will expand public outreach to encourage residents to keep storm drains clear during storm events. Educational materials will be added to the emergency management webpage.	Add a public education tab to emergency management webpage	Emergency Management; Community Development
FC-3: Develop an education and outreach plan for the upcoming changes in FEMA flood mapping and Flood Insurance Rate Maps (FIRM) for property owners and general public	No reference	No reference	Gap	The County will implement a phased public education and outreach campaign aligned with updates to FEMA Flood Insurance Rate Maps. This initiative will provide residents and businesses with clear information on changing flood designations, insurance implications, property disclosure requirements, and available mitigation support.	Add a public education tab to emergency management webpage	Emergency Management and Community Development

Parks, Recreation, and Open Space Plan Integration

RRRC Strategy for Integration	Existing Reference	Reference Location	Relationship (aligned/ conflicting/gap)	Suggested Language	Suggested Section	Lead Integration Department
FC-6: Retain thick vegetative cover on public lands flanking river to reduce the potential of erosion.	Park land acquisition should consider potential environmental services like habitat protection or flood control measures during the selection and master planning of a site.	Recommendations for Improvements pg. 39	Aligned	n/a	n/a	n/a

**Step 4. Coordination & Finalization**

Share the draft alignment recommendations with the lead departments noted in Step 3, as well as RRRC, and ORP.

Department/Office Shared With	Date Shared
Fauquier County Emergency Management	January 2026
Fauquier County Community Development	January 2026
RRRC Community Development	January 2026
DCR Office of Resilience Planning	January 2026