

FUNDAMENTALS OF FIRO-WCM INTEGRATION

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Joe Forbis, PE
Chief, Water Management Section
Sacramento District
U.S. Army Corps of Engineers



US Army Corps
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USACE WATER MANAGEMENT



- Basic objectives of water control management
 - Operate to authorized purposes and laws
 - Maintain structural and operational integrity
 - Avoid risk to public health and safety, life, and property
- USACE is responsible for water control management at USACE-owned projects
- USACE is also responsible for prescribing flood control and navigation regulations and guidance at non-USACE projects
 - Section 7 projects
 - Special acts of Congress
 - FERC conditions
 - Other agreements



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WATER CONTROL MANUAL

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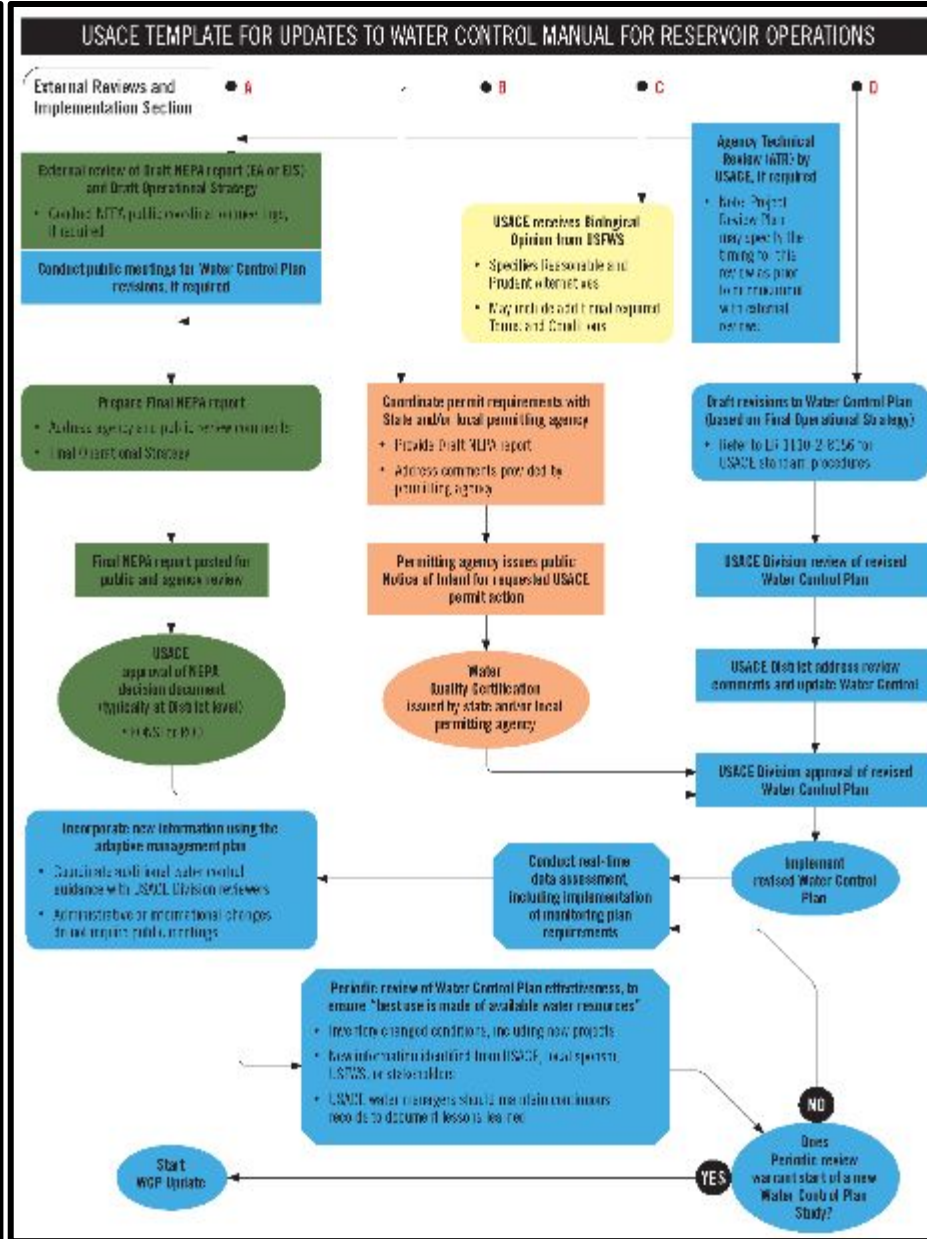
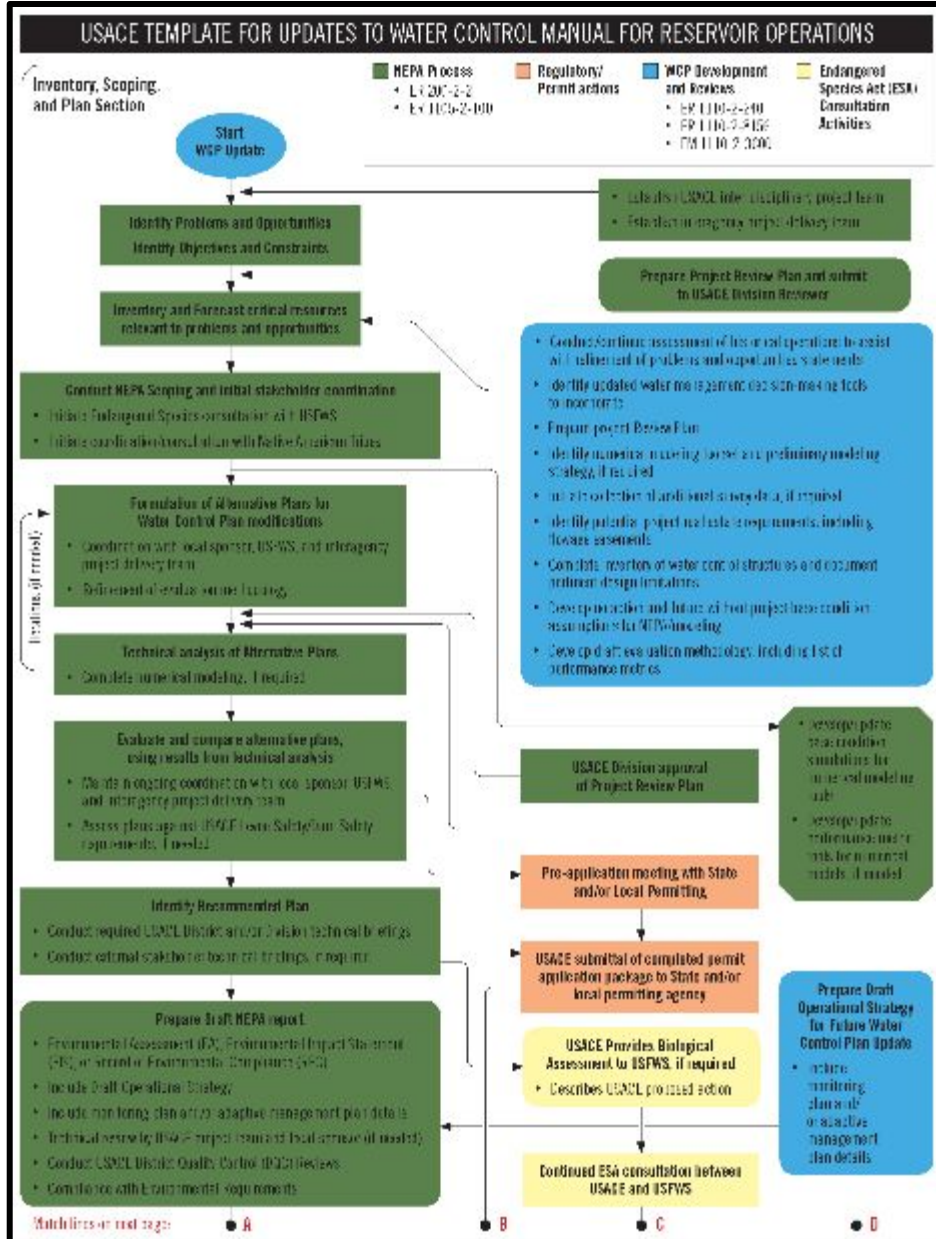
USACE WCM UPDATE PROCESS

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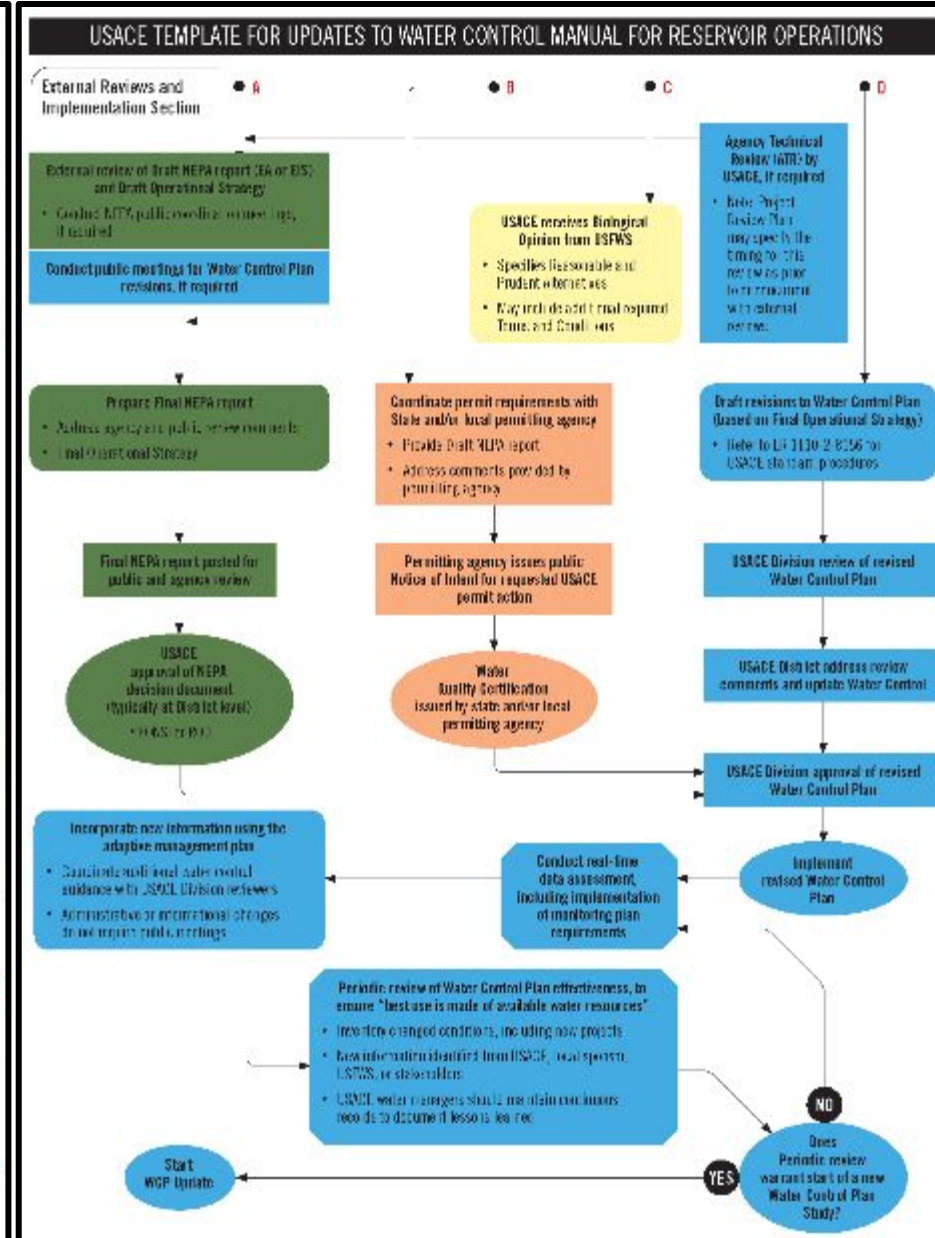
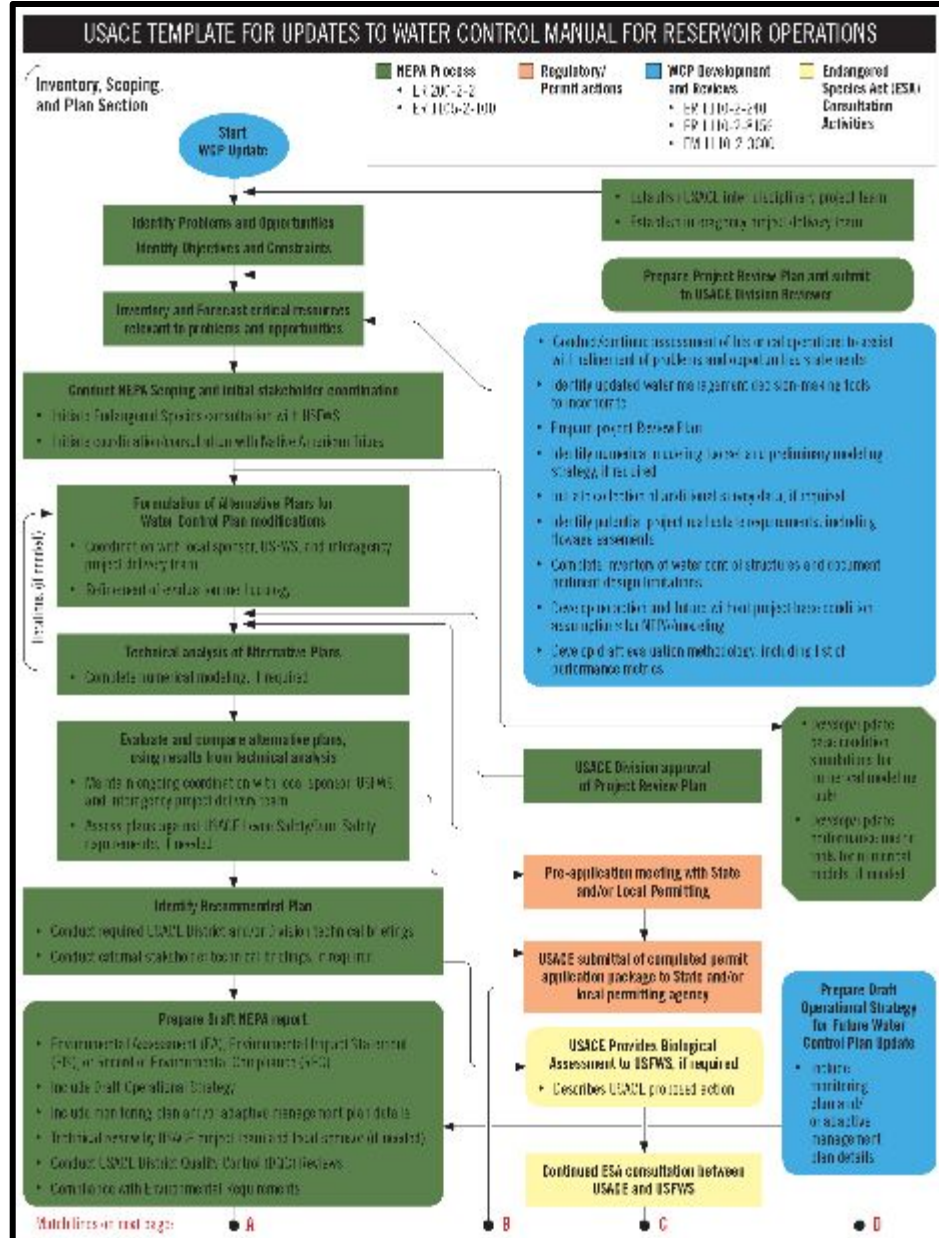


PMP					
Public/Stakeholder Outreach					
Hydrology					
Existing Conditions					
Project Alternatives Identification					
Environmental Effects Analysis					
Reviews/Documentation					
Final Review and Approval					

USACE WCM UPDATE PROCESS



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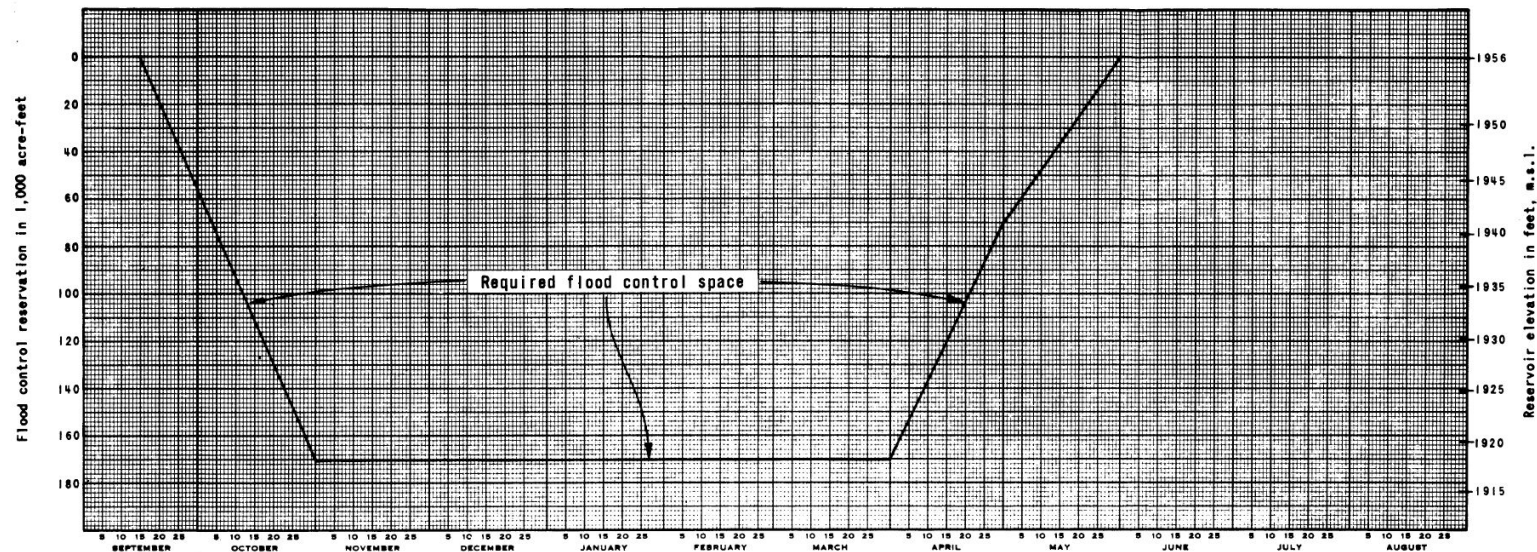
FIRO



FIRO – CODIFYING FLEXIBILITY



- Reservoir operators use forecasts to extent practicable now
 - Extent may be limited due to rigidity of written regulations
- WCPs can be temporarily modified (approved deviation) or permanently changed (WCM update)
- FIRO concepts in WCM update codifies greater – but still responsible – operator flexibility



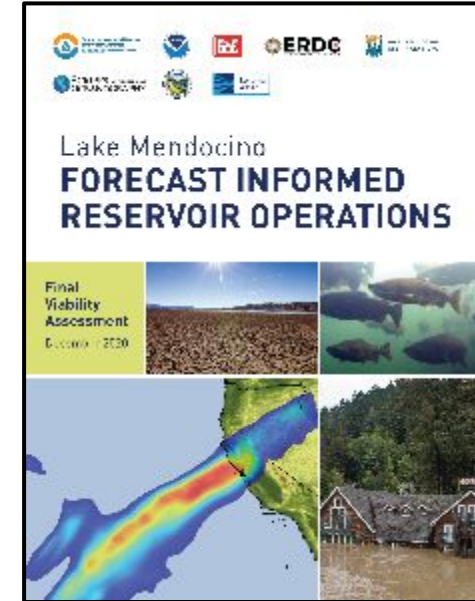


FIRO + WCM INTEGRATION TYPES



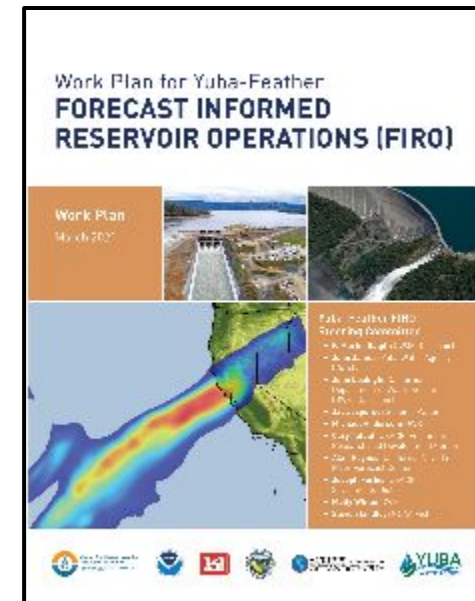
Sequential

- Example – Lake Mendocino FIRO
- Distinct R&D (FIRO) and Implementation (WCM) phases



Concurrent

- Example – Yuba-Feather FIRO
- FIRO and WCM efforts occurring simultaneously



FIRO + WCM BENEFITS AND CHALLENGES

- Resources
- Collaboration
- Scheduling





SUMMARY



- Goal is to codify operational flexibility through FIRO concepts in WCM updates
- Integration of FIRO into WCM process has been done sequentially and concurrently
- Each integration type has its own set of benefits and challenges
- Evaluating the success of each approach upon WCM update completion is key



THANK YOU

Joe Forbis, P.E.

Joseph.C.FORBIS@usace.army.mil