Cox Brook Dam Removal, Northfield VT

Rob Evans
State Floodplain Manager
River Corridor & Floodplain Protection
Steps in the right direction....

FEMA Hazard Mitigation Assistance (HMA) Program

1. Ecosystem Service Benefits Calculator
2. Pre-disaster Mitigation 2016 - prioritized floodplain and stream restoration

Executive Order 13690 - Federal Flood Risk Management Standard:

"Where possible, an agency shall use natural systems, ecosystem processes, and nature-based approaches when developing alternatives for consideration."
The Challenge....

Almost 50 years old (!)
Cox Brook Dam Removal

- 1930s low head run-of-river gravity dam
- Barrier to fish passage/sediment transport
- Flood hazard
Cox Brook Dam removal = Development
NFIP Mapping Requirements

44 CFR § 65.3 - Requirement to submit new technical data

Letter of Map Revision (LOMR) required if physical changes impact base flood elevations
Cox Brook Dam Removal

$37,000 Project Budget

LOMR
Cox Brook Dam Removal

Limited impact on Flood Insurance Study and mapping
<table>
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<tr>
<th>CROSS SECTION</th>
<th>DISTANCE</th>
<th>WIDTH (FEET)</th>
<th>SECTION AREA (SQUARE FEET)</th>
<th>MEAN VELOCITY (FEET PER SECOND)</th>
<th>BASE FLOOD WATER-SURFACE ELEVATION (FEET NAVD)</th>
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1Feet above confluence with Mad River
2Feet above confluence with Dog River
3Elevation computed without consideration of backwater effects from Mad River

TABLE 7
FEDERAL EMERGENCY MANAGEMENT AGENCY
WASHINGTON COUNTY, VT
(ALL JURISDICTIONS)
CHARLES FOLSOM BROOK – COX BROOK

FLOODWAY DATA
Limited impact on Flood Insurance Study and mapping

No Flood Insurance Implications
Cox Brook Dam Removal

Limited impact on Flood Insurance Study and mapping

No Flood Insurance Implications
Cox Brook Dam Removal

- Limited impact on Study and Mapping
- No Flood Insurance Implications
- Age of Flood Insurance Study

LOMR
Cox Brook Dam Removal

In Summary

Project resulted in:

- Minimal impact to mapped Special Flood Hazard Area
- Very localized reductions in Base Flood Elevations
- No impacts to insurable structures
- No LOMR application due to relative cost
Cox Brook - Sharing the As-built Data
Beyond dam removals?
Recommendations

- Create policies that provide reasonable accommodation of restoration projects;
- Establish more formal protocol for sharing as-built data w/o embarking on full-blown LOMR process;
- Create a companion screening tool to aid in determining whether CLOMRs/LOMRs are needed and establish documentation requirements.
Floodway requirements on planting projects...

- Buffer plantings are an encroachment in the floodway.
- Must obtain a CLOMR or certified hydraulic analysis
- Modeling must assume trees and full maturity
Property Acquisition & Structure Demolition:

The property must be deed-restricted in perpetuity to open space uses to **restore and/or conserve the natural floodplain functions.**