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Session C4- Getting to AOP in Vermont

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Getting to AOP in Vermont

Rich Kirn
Vermont Department of Fish and Wildlife
Federal Regulatory Obligations

US Army Corps of Engineers Vermont
General Permit:


(a) All temporary and permanent crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed to withstand and to prevent the restriction of high flows, to maintain existing low flows, and to not obstruct the movement of aquatic life indigenous to the waterbody beyond the actual duration of construction.”
§1023. Regulation of Streamflow

“The permit shall be granted, subject to such conditions determined to be warranted, if it appears that the change:

2) *will not significantly damage fish life or wildlife,*”
(a) A person shall not, unless authorized by the commissioner, prevent the passing of fish in a stream or the outlet or inlet of a natural or artificial pond on a public stream, by means of a rack, screen, weir or other obstruction, and shall comply with the terms of the notice provided in subsection (b) of this section."
Bridge = Passage

Culvert = Barrier
Culvert Treatments

- Baffles / sills
- "Oversize"
- Embedment
Getting to AOP

Assessment
Vermont Culvert Inventory

- Follows USFS template
- AOP / Geomorphic assessments
- Vtrans funded 2004-2007
- Screening tools
VDFW Culvert Surveys 2004-2007
1501 culverts

Structure width as % Bankfull width
Getting to AOP

- Assessment
- Technical Assistance
Guidelines for the Design of Stream/Road Crossings for Passage of Aquatic Organisms in Vermont

AOP Guidelines

- Technical engineering document
- Contracted with Kozmo Bates
- Developed with VTrans & VDEC
- VT specific biology & hydrology
- SWG funded
AOP Workshops

- **Technical Workshops**
  - State & consulting engineers
  - Biologists / River Scientists
  - Regulators

- **Informational Workshops**
  - Town / state road crews
  - Transportation planners
Getting to AOP

- Assessment
- Technical Assistance
- Coordination
State & Federal Regulators

- State/Interstate Projects (large)
- State Projects (small)
- Municipal projects
- Agriculture & Forestry
- Private projects
Coordination

- VTrans critical culvert review (large)
- Vtrans culvert procedure (small)
- Municipalities - Stream Crossing Handbook
- NRCS stream crossing review
- Forestry AMP revision
Getting to AOP

- Assessment
- Technical Assistance
- Coordination
- Project Development
Cooperative Projects

- Culvert assessments for project ID
- AOP Guidelines for design criteria
- Trained consulting engineers for design & construction oversight
- Partners: USFWS, USFS, TU, NRCD, TNC, Watershed Groups, state agencies....
- Benefits beyond project

Rock Weir Retrofit 2007
WRP, USFWS, USFS, TU, ANR
Getting to AOP

- Assessment
- Technical Assistance
- Coordination
- Project Development
- Project Review
Project Design Review

Biologists are not Engineers
Project Design Review

Engineers are not Biologists
Getting to AOP

- Assessment
- Technical Assistance
- Coordination
- Project Development
- Project Review
- Evaluation
- Constrained by underground utilities
- Adjacent landowners
- Small substrate
- Downstream grade control
Biological Evaluation
Getting to AOP

- Assessment
- Technical Assistance
- Coordination
- Project Development
- Project Review
- Evaluation
- Persistence
AOP Design
Box with constructed bed

Bed retention sills and constructed streambed

Downstream grade control structure
AOP Design
Open Bottom
Lessons Learned

- Guidelines and regulations are not enough
- Design, site review and post construction evaluation critical to long-term success
- Need to engage all players
- Multi discipline approach
- Persistence is key
New Challenges

- Vermont Stream Alteration General Permit
  - Jurisdiction expanded to all perennial streams
  - Self certification - no permit needed if general conditions are met
New Opportunities
The MISSION of the Vermont Fish & Wildlife Department is the conservation of fish, wildlife and plants and their habitats for the people of Vermont.