The Biggest Barriers to Barrier Removal

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This presentation represents a large assortment of dams that were retained or removed, completed by a wide variety of project partners and engineering design firms. By utilizing these examples I am making no claims that Princeton Hydro completed these projects, however I was personally involved in many of these projects, as a project partner or as part of the engineering design team, through my previous employment with American Rivers and MMI.
Typically Removed Due to:

• Dam Safety
• Liability
• Economic Issues (cost of maintenance)
• Environmental Concerns (i.e. connectivity, water quality, restoration of natural fluvial functions)

Typically Retained Due to:

• Aesthetics & Recreational
• Water Intakes/Diversions
• Hydroelectric
• Quantity of Sediment
• Quality of Sediment
• Scale of Project
• Funding Issues
• Historic Issues
• Infrastructure
• Owner Buy-in
• Community Politics
• Sensitive Species
AESTHETICS & RECREATION

Dam Retained

Sweet Pond Dam, VT

Sennebec River, ME

Conceptual Design: Wildman
Final Design: URS
AESTHETICS & RECREATION
Dam Removed

Spoonsville Dam, CT (worked with whitewater boaters)

Pawtuxet Dam, RI (worked on envisioning with community)

Final Design: Princeton Hydro
WATER INTAKE
Dam Retained

Goldsboro Dam, NC

Barrier #1 Little Lehigh, PA

Green River Water Supply Dam, MA

Dam Failure
WATER INTAKE
Dam Removed

Ballou Dam, MA
(water tank for fire suppression)

Great Works, ME
(alternate free flowing water intake)
Collinsville Dam, CT
Edwards Dam, ME (FERC relicensing – balancing issues)
QUANTITY OF SEDIMENT
Dam Retained

Matilija Dam, CA

Mad River Dam, CT (dam lowered)

Platts Mill Dam, CT (partial width removal)

Final Design: MMI
QUANTITY OF SEDIMENT

Dam Removed

Marmot Dam, OR
(allowed large short term impact)

Final Design: PacifiCorp

Condit Dam, OR
(allowed large short term impact)

San Clemente Dam, CA
(bypass & remove dam)

Final Design: Tetra Tech

Final Design: PGE and Natt, McDougall Co.
QUALITY OF SEDIMENT
Dam Retained

Cumberland Dam, MD

Lake Solitude Dam, NJ
QUALITY OF SEDIMENT

Dam Removed

Milltown Dam, MO
(significant sediment removal and confinement)

Heminway & Pinshop Dams, CT (relocated and stabilize sediment on-site)

Final Design: Princeton Hydro

Final Design: River Design Group and Envirocon
SCALE OF PROJECT
Dam Retained

Snake River Dams,
Pacific NW

Klamath Dams, CA
Elwha Dam, WA
(many years of planning and patience; took care of impacts 1st)

Glen Canyon Dam, WA
(many years of planning and patience; took care of impacts 1st)

Birch Run Dam, PA
(dewatered 1st)
American Brass Co. Dam, CT
FUNDING OF PROJECT

Dam Removed

Naugatuck River Dams, CT
(Special Environmental Projects Funding; i.e. mitigation)

Middle Street Dam, CT
(Federal Highway Funding)
HISTORIC ISSUES
Dam Retained

Wiley Russell Dam, MA

Heishman's Mill Dam, PA
HISTORIC ISSUES
Dam Removed

Kent Dam, OH
(kept portion of dam and created falling water aesthetic)

Town Brook Dam, MA
(upfront study and documentation)
INFRASTRUCTURE ISSUES

Dam Retained

Tingue Dam, CT

Brave Station Dam, PA

Final Design: MMI

Mill Street Dam, MA
INFRASTRUCTURE ISSUES

Dam Removed

Anaconda & Union City Dams, CT (protected sewer line with sheet pile and concrete cap)

Plymouth Crossing, PA (small ramp/riffle at sewer crossing)
Plume & Atwood Dam, CT

OWNER BUY-IN
Dam Retained
OWNER BUY-IN

Dam Removed

Pizzini Dam, CT (photo renderings for absentee owner)

Final Design: Wildman
COMMUNITY POLITICS
Dam Retained

Wiley Russell Dam, MA

Howland Dam, ME
COMMUNITY POLITICS
Dam Removed

Fort Halifax Dam, ME (economic justification)

West Winterport Dam, ME
( extensive alternatives analysis, time & lawyers )

Princeton Hydro
SENSITIVE OR INVASIVE SPECIES

Many of 1st Barriers on the Great Lake Tributaries, Midwest

Government Mill Dam #6
E. Branch Housatonic River (lowest Crane Paper Dam)
SENSITIVE OR INVASIVE SPECIES

Dam Removed

Cuddebackville Dam, NY
(Dwarf Wedge Mussels – locate & relocate)

Gravesleigh Pond Dam, MA
(Wood Turtles – tag and track during construction)
“Identifying key barriers early on and understanding which of those barriers might have potential solutions versus remain an impediment, is critical to prioritizing limited ecological restoration resources”