

Build Back Better Municipalities After A Flood



People – Flood Resiliency & Public Safety
Economy – Reduce Adverse Impacts & Costs
Environment – Aquatic & Terrestrial Wildlife

What's Good for Fish is Good for Us and Good for our Budget!



Todd Menees, River Management Engineer
Will Eldridge, VF&W Fisheries Program
Todd Eaton, VTrans Local Roads Program
David Vallee, NOAA NWM Program



Build Back Better Municipalities After A Flood



David R. Vallee

Director, Service Innovation and Partnership Division
Office of Water Prediction | National Water Center
NOAA National Weather Service

The Implementation of Forecast Flood Inundation Services

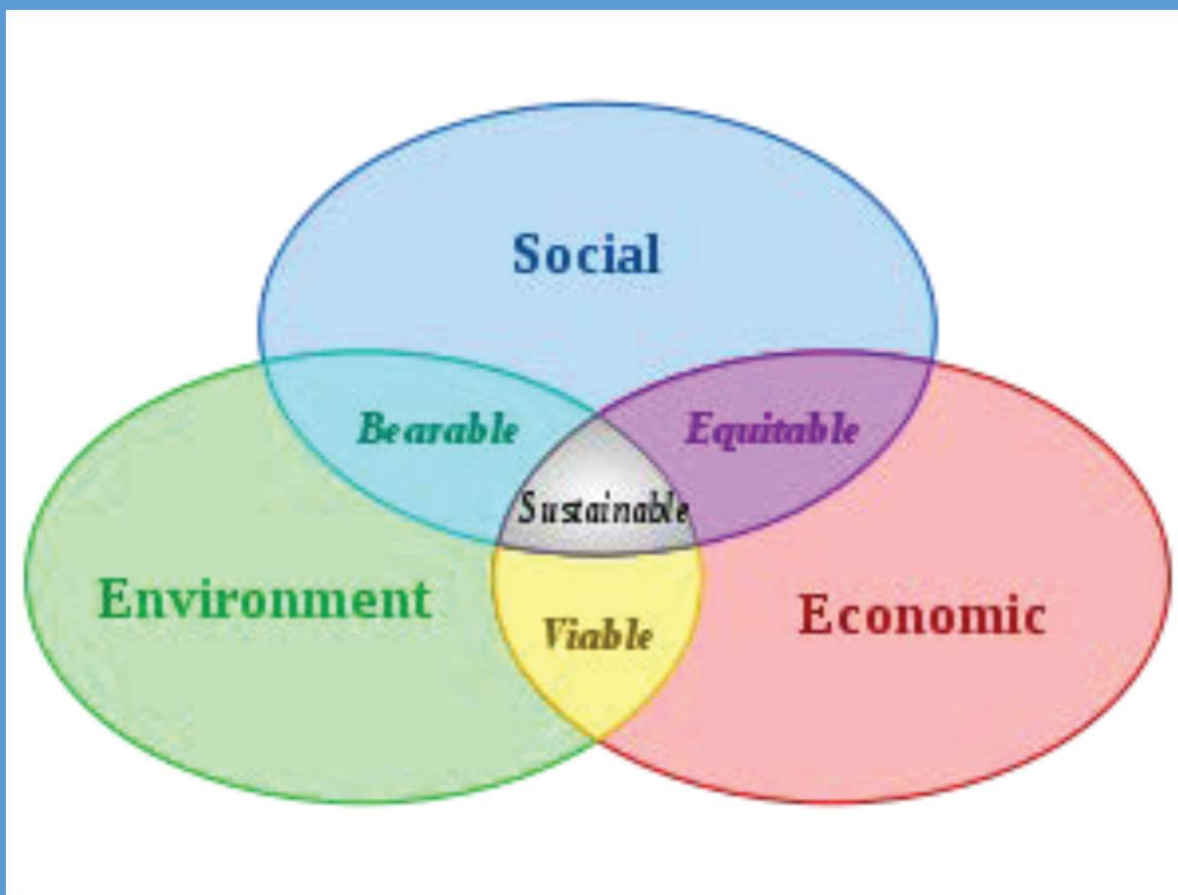


Todd Menees, River Management Engineer
Will Eldridge, VF&W Fisheries Program
Todd Eaton, VTans Local Roads Program
David Vallee, NOAA NWM Program



Build Back Better Municipalities After A Flood

Hits
The
Bulls
Eye!



Win-
Win-
Win!

Respect!

Protect!

Enjoy!

Build Back Better Municipalities After A Flood



People – Flood Resiliency & Public Safety
Road Culvert and Bridge Crossings over Streams

What's Good for Fish is Good for Us and Good for our Budget!

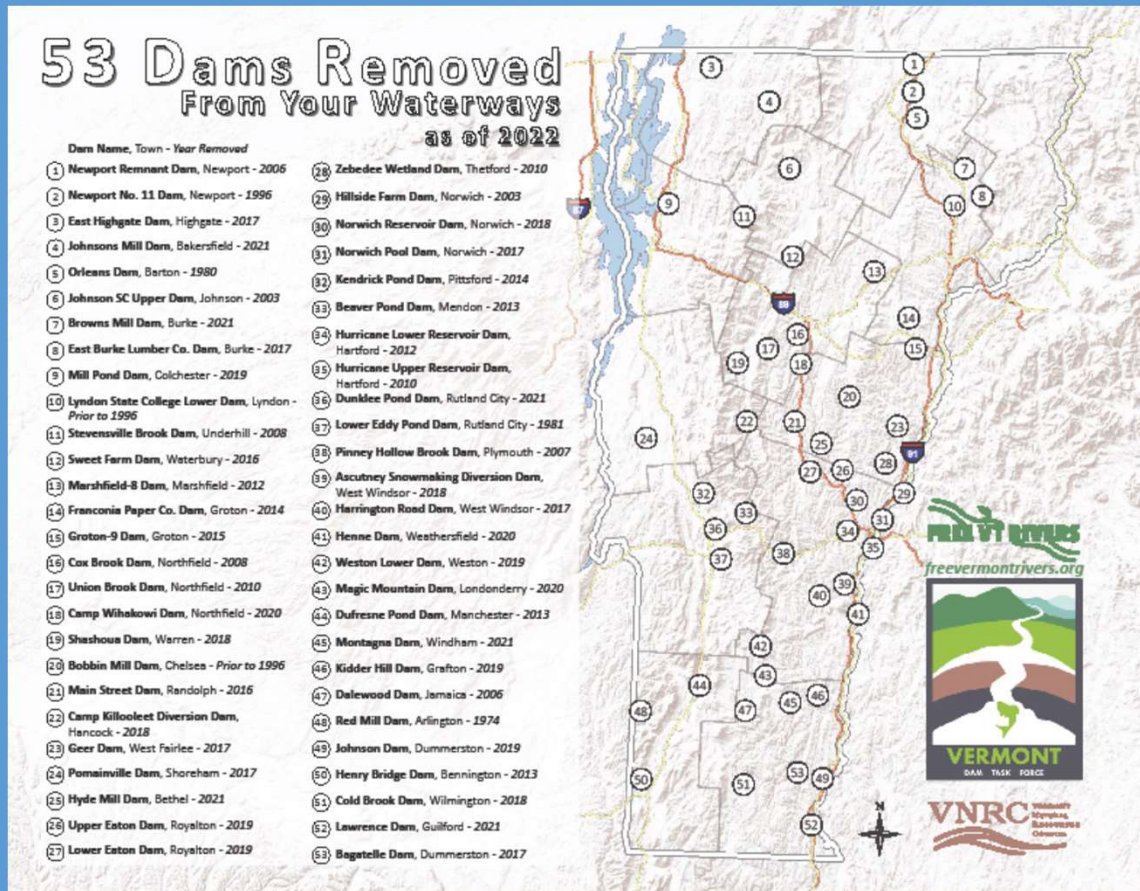


Todd Menees, River Management Engineer

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Build Back Better Municipalities After A Flood



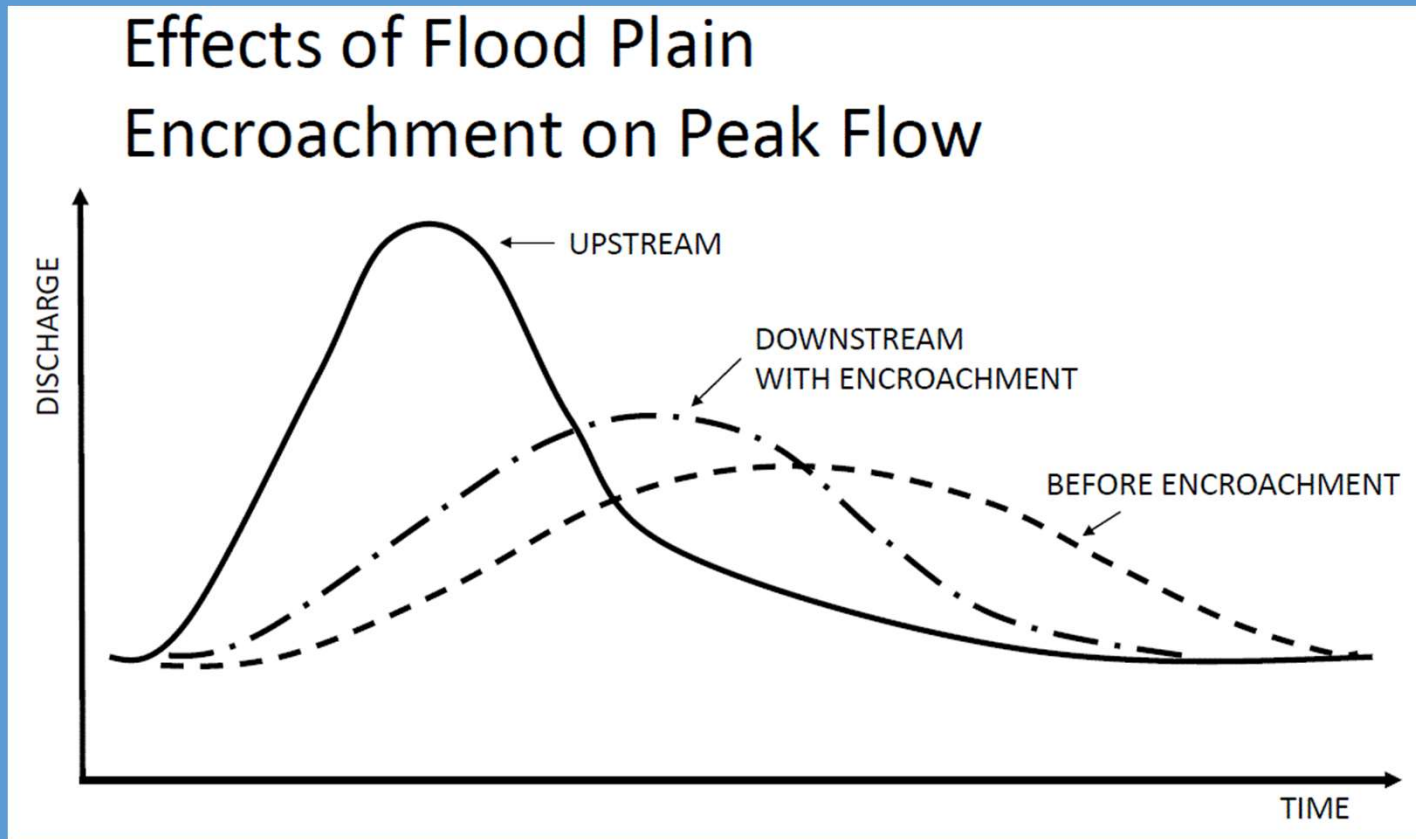
**Only
Flood
Control
Dams are
Designed
to
Operate
Empty**

**All Other
Dams
Operate
Full and
Increase
Flooding**

Respect! Protect! Enjoy!

Build Back Better Municipalities After A Flood

On
Stream
Dams
Make
Flooding
Worse



Dams
Gone
Reduce
Flooding

Respect! Protect! Enjoy!

Dunklee Pond Dam Before Removal

Crumbling
Stone Dam
A Known
Public
Safety
Threat



Looking Upstream at Old Stone Dam 2017

Ca 1792
Dam in
Poor
Condition

Old Mill
Pond

Ice
Harvest
Source

Significant
Hazard Dam

Dunklee Pond Dam Before Removal

T.S. Irene
Sediment
Deposits
Filled in
the Pond



Poor WQ

Murky
Water

Smelly and
Fish Kill
Low D.O.

~ 400 lbs

Of

Phosphorous
Removed

Looking Upstream at Old Stone Dam 2017

Dunklee Buffer Planting 5/20/22



It takes a
Village
to Plant
a
Riparian
Buffer!

Green
It
Up!

On
5/26/22
Done!

Another Planting Day and Everyone Walks Away Smiling!

Build Back Better Municipalities After A Flood

Dunklee
Pond Dam
Removal
Restored
Floodplain on
9/26/23



Respect! Protect! Enjoy!

3 Years
Later
This Dam
Gone
Has
Proven
to
Reduce
Flooding

Build Back Better Municipalities After A Flood

Dunklee
Pond Dam
Removal
Historic
Preservation
Sign About
the Dam
Removal
Project



Former
Dam Site
Mid-Top in
Photo. Sign
Information
includes
Indigenous
Peoples Use
13,000
Years Ago

Respect! Protect! Enjoy!

**Mendon Built
Back Better
After 2011 Flood**



**Medway Road
New Bridge
Wider + higher
after Irene**

GMNF Culvert Stream Channel Outlet

Larger Culvert
replaced before
Irene on Green
Mountain
National Forest
in Pittsfield



Larger
Culvert was
NOT
Damaged in
the 2011
Irene Flood

VTRANS ROUTE 12 BED ARMOR DDIR REPAIR

Channel was over-excavated in
the initial emergency repair

Channel width was too narrow
and subject to more erosion.

Stabilize Downcutting Excavated
Channel from further scour 2015



VTRANS ROUTE 12 BED ARMOR DDIR REPAIR

Historically Gulf Stream Brook
was Narrowed for Route 12.

Proper Stream Width was
Restored to Protect Route 12 in
Future Floods in 2014.

Rip-Rap is Now Green in 2021.



Photo by Todd Menees

Northfield Built Back Better After 2011 Flood

Post-Irene
Industrial
building across
the Dog River

Total 7-Year
effort from
concept to
completion



Flood damage after Tropical Storm Irene

7 FEMA HMGP
Home Buyouts to
Restore the Dog
River Floodplain
for Flood
Resilience

Dog River Park Floodplain Restoration

Gazebos for picnics, benches for bird watching, river access points, and pollinator gardens to support the local gardens



Dog River Park Conceptual Design

Friends of the Winooski River

Planning and
Fundraising
2014 – 2017

Implementation
2017 – 2018

Northfield Dog River Park After 2011 Flood

Paths,
Gazebos,
Pavilion,
Picnics,
Benches,
Birding,
Fishing,
Wading,
Flowers



Flood Ruin to a
Community Asset,
Many Volunteers
Enjoyed Fun Work,
Rewarding for the
Northfield
Community

Friends of the Winooski River

Northfield Built Back Better After 2011 Flood

Dog River
Park after
Removal
of Buyout
Buildings,
Regrading
and
Rough
Layout



Friends of the Winooski River

Dog River Park
Successful
Floodplain
Restoration
Reduced Flood
Water 6" Drop in
2023 Flooding

Northfield Built Back Better After 2023 Flood

Dog River
Park after
Removal
of Buyout
Buildings,
Regrading
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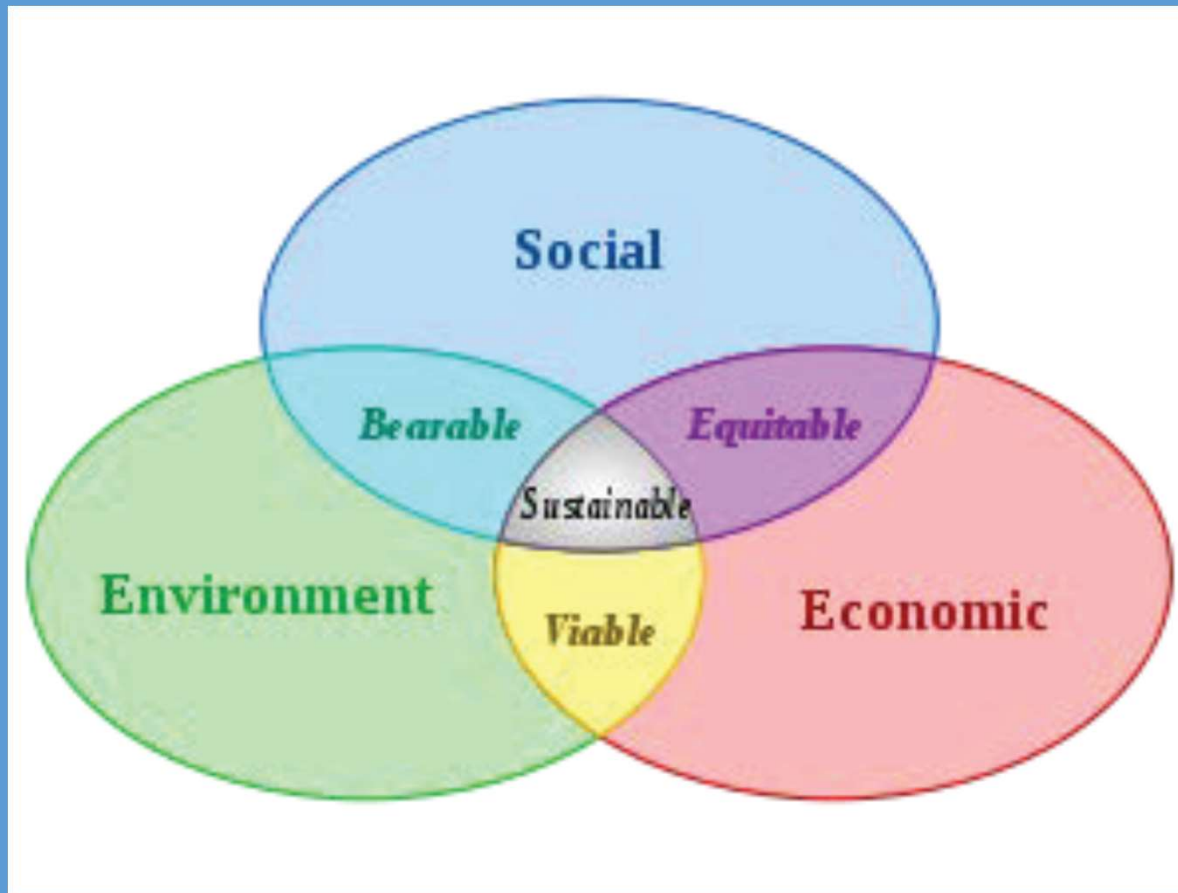


Source Unknown

Dog River Park
Successful
Floodplain
Restoration
Reduced Flood
Water 6" Drop in
2023 Flooding

YOUR TOWN Example: Start with the End in Mind

Hits
The
Bulls
Eye!



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Win-
Win!

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QUESTIONS?

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