Stream Smart
Cost/Benefits

That’s great, but how do we pay for it??
How can we afford a Stream Smart design?
- Communities have limited, annual budgets
- Up-front costs of Stream Smart design higher
- Our staff know how to put in crossings!

How can we afford not to use Stream Smart design?
- Public safety risk
- Economic risk to community
- Climate Change
- Maintenance costs
- Financial assistance requires Stream Smart design
Public Safety, Community Costs

Public Safety
- Immediate threat of road collapse
- Emergency vehicle detour
- Individuals and communities could become isolated

Economic Impact on Community
- Frequent road failures costs money
- Loss of reliable access to goods & services, customers
- Affects of flooding on property values
Increase in extreme precipitation events

- Increase in size & frequency of extreme precipitation events
- New England has highest changes in size and frequency
- Maine: size of largest annual storm has increased by 23%
- Maine: frequency of extreme precipitation increased by 74%
Modeling Flood Risk

To answer the question, we need to know...

- **CULVERT GEOMETRY**: Height and width collected by stream crew
- **FLOW**: Generated by StreamStats for each recurrence interval
- **CULVERT SLOPE**: Determined using GIS

which allows us to calculate...

- **UPSTREAM WATER SURFACE ELEVATION**: Calculated using the model for each recurrence interval

The Nature Conservancy developing flood risk tool
With ever increasing storm events, poorly designed culverts can lead to dangerous flooding that may isolate vulnerable populations from access to emergency services. These culverts may also prevent fish from reaching essential spawning habitat.

The Nature Conservancy in Maine is working to identify culverts that pose a flood risk during extreme storms and create barriers for fish. This information will help prioritize culvert upgrades to improve both road safety and fish passage in Maine communities.

If you'd like to learn more about improving culverts in your community, contact us at naturemaine@tnc.org.
Upfront costs vs. long-term costs

“In addition to their ecological benefits, ecological design culverts could have lower fiscal costs than hydraulic culverts, because of increased flood resiliency and reduced debris accumulation, which in turn reduce the need for periodic maintenance and replacement.”  
Fisheries 2017

“Economic and Community Benefits from Stream Barrier Removal Projects in Massachusetts” 2015. Dept of Ecological Restoration

On average, upgrade of the 3 culverts in the study was 38% less expensive than in-kind replacement and maintenance over 30 years.
Financial Assistance Availability/Limits

- Project Proponent (town, private landowner, land trust, etc.)
- Aquatic resources (Atlantic salmon, brook trout, alewife, etc.)
- Expected improvement (miles of habitat restored, access to ocean, access to ponds, etc.)
- Location in the state
- Other available funds (rarely cover all costs, usually cost share)
- Depends on fund availability in a particular year
- REQUIRE STREAM SMART DESIGN!
Financial Assistance – Sources

- NRCS Regional Conservation Partnership Program (RCPP)
- NOAA grant funds
- Maine Natural Resource Conservation Program (MNRCPP)
- USFWS Partners for Fish and Wildlife
- Others (Trout Unlimited, Atlantic Salmon Federation, NFWF, etc)
- Maine DEP Stream Crossing Upgrade Grant Program
RCPP – Regional Conservation Partnership Program

- USDA Natural Resources Conservation Service (NRCS) program
- Multiple partners for each RCPP
- NRCS provides Technical & Financial Assistance
- Private landowners
- Voluntary program
- Competitive funding
- Flat rate reimbursement
- Two RCPP programs in Maine, another has been proposed
Proposal in the works for a larger RCPP (for private landowners)

NRCS Funding Opportunities

NRCS is working with partners on two Regional Conservation Partnership Program (RCPP) projects with a Aquatic Organism Passage (AOP) focus:

- "Maine Aquatic Connectivity Restoration Project”
  - Focus area outlined in RED
  - Lead partner The Nature Conservancy
  - Total $4,000,000 for AOP projects!
  - Project ends in 2022

- "Maine Mountain Collaborative For Fish and Wildlife.”
  - Focus area outlined in BLUE
  - Lead partner Trust For Public Lands
  - Total $200,000 for AOP projects.
  - Project ends in 2021.
Questions?