# Minutes of Meeting

**DATE: February 29, 2016**
**MMI #: 4040-02**
**PROJECT: Piscataquog River Watershed Culvert Prioritization Model**

**SUBJECT: Watershed Kickoff Meeting Notes**

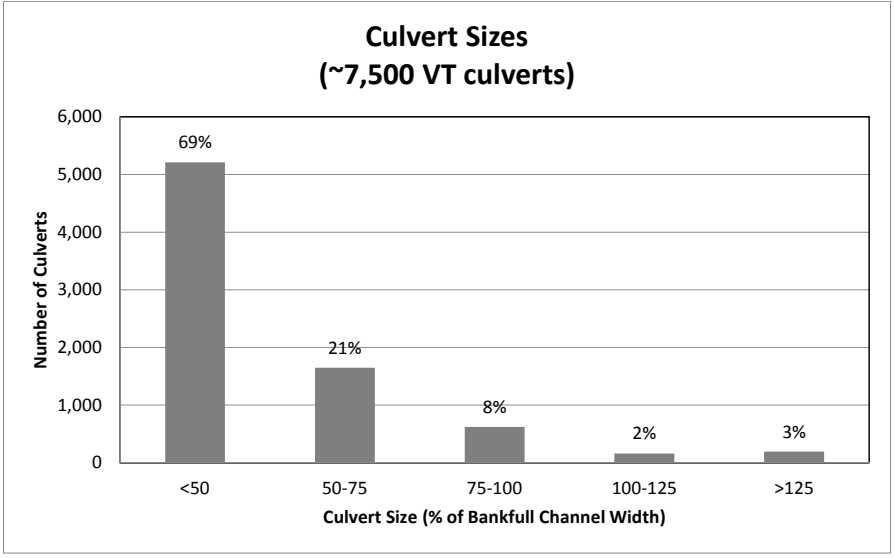
**LOCATION: Whipple Free Library, New Boston, NH**

**ATTENDEES: PLAC – Dick Ludders; Goffstown DPW – Adam Jacobs; NHDOT – Tim Mallette; NH F&G – John Magee; NH HSEM – Beth Peck; NHDES – Mindy Bubier; Keene State College – Denise Burchsted; SNHPC – Jack Munn, Bart McDonough; MMI – Roy Schiff**

- Introductions
- Project introduction by Jack
- Presentation by Roy
    - Project goals and scope of work
    - Review existing information
    - Past screens
        - Geomorphic Compatibility
            - In use in NH
        - River Sensitivity Coarse Screen
            - Stream power
            - Confinement
            - Slope decreases
            - Confluences
            - Crossings
        - Culvert Vulnerability
            - Power versus bed resistance (use in this project)
            - Other variables from geomorphic compatibility screen
            - Mapping and prioritization of structure vulnerability
    - Draft screen
        - Like integrated look at existing information
        - Concerned about blending too much for the risk (R) quadrant since the variables differ too much.
        - Approximate hydraulic capacity (AHC)
            - May want to have an integrated score to visualize capacity for each of the flows so Towns can see how culverts perform. Perhaps a combined score based on flood size and how full pipes are?
            - Connect to local design standards? In this sense, Q50 is likely good.
            - Possibly include structural assessment done by TU or DOT.
        - Structural condition needs to be in screen.
            - New Hampshire Statewide Asset Data Exchange System (SADES)
            - NHDOT primary screen method

- Geomorphic compatibility
  - Calculated by state
  - Add in power and resistance variable
    - To be calculated by MMI in GIS and use existing sediment data
- Aquatic organism passage (AOP)
  - Calculated by state
  - Add in indicator of fish and possibly habitat
    - John to provide map markup for watershed
- Criticality
  - How important is the structure to the transportation network?
  - What level of disruption will take place?
  - Town data likely better than approximations by buildings, proximity to key areas, or village centers.
- Risk = intersection of vulnerability and criticality (R)
  - Current plan to mix variables too disparate. R is confusing. Move criticality and local priorities to its own slice, and R becomes perimeter color band.
  - Vulnerability can be visualized from AHC/structural condition, geomorphic compatibility/power, AOP/fish (let data define R)
  - Criticality to likely be indicated by Town input and mapping

- Miscellaneous
  - Reach out to other towns
    - Direct call
    - NH Public Works Association
    - NH Public Works Mutual Aid Program
    - SNHPC to continue outreach to get pilot towns involved
  - See NHView (http://www.nhview.unh.edu/) for public data that will include local risk information in watershed.
  - Key issue is that nearly half of all assessed culverts are less than 50% the channel bankfull width.
    - This systemic pattern of undersized culverts is widespread in the region.
    - This vulnerability needs to be communicated better.
    - Example plot below.



- Send group paper on flood and economics of larger culverts (reference below)
  - Gillespie, N., A. Unthank, L. Campbell, P. Anderson, R. Gubernick, M. Weinhold, D. Cenderelli, B. Austin, D. McKinley, S. Wells, J. Rowan, C. Orvis, M. Hudy, A. Bowden, A. Singler, E. Fretz, J. Levine, and R. Kirn, 2014. Flood Effects on Road-Stream Crossing Infrastructure: Economic and Ecological Benefits of Stream Simulation Designs. Fisheries 39(2):62-76. (http://fisheries.org/docs/wp/AFS-Fisheries-Magazine-February-2014.pdf)
- Paving cycle is key local issue for possible inclusion as local variable.
- FEMA funding
  - FEMA is believed to be doing some upsizing now when damages are frequent
  - Within reason to say Q50
- Town use will be first cut screen to get most problematic structures. Then would move on to details.
  - Suggests two-part visualization may be warranted.
    - Part 1 – overall screens, coarse, identifies extremes
    - Part 2 – data detail, more decisions, begin understanding why
- Use damage data to calibrate model
  - Local flood risk
  - State info