**Ludlow LHMP 2023-2028**

**Recommendations Related to Hazard Mitigation**

*Review of Ludlow Town Plan (Adopted 2019)*

* Protect shorelines and stream banks from surface runoff that could lead to excessive erosion, sedimentation, and/or other pollution of surface waters. No clear cutting of trees shall be allowed within 50 feet of the high-water mark of Lakes Pauline and Rescue and Round Pond to maintain the water quality and scenic value of these lakes.
* New development in identified flood hazard areas and river corridors should be avoided. If new development is to be built in such areas, it must not exacerbate flooding and fluvial erosion.
* The protection and restoration of floodplains and upland forested areas that attenuate and moderate flooding and fluvial erosion must be encouraged.
* Development must be sited in order to avoid unstable soils that offer poor support for foundations or footings and are subject to slippage, or are poorly suited for road construction. Extensive site investigations and erosion control plans may be required to determine the development suitability of such soils.
* Development is strongly discouraged in areas higher than 2,500 feet in elevation and with slopes greater than 25% must avoid any negative impacts new construction may have on the environment, such as erosion of topsoil and degradation of water quality.
* Identify existing buildings located within flood and erosion hazard areas (i.e. regulatory floodway, floodway fringe, and fluvial erosion hazard areas) that have experienced repeated flood damage, and explore options to mitigate future flood or erosion hazards for those properties.
* Investigate options to better protect the river corridors, such as preserving or restoring the river channel access to the surrounding floodplains, reducing flood flows with streambank buffers, protection of channel contiguous wetlands, preserving or supporting a return to more natural channel dimensions, and avoiding new development and infrastructure within river corridors.
* Coordinate with the SWCRPC, VT Agency of Natural Resources, Black River Action Team, and Lake Association to implement the Tactical Basin Plan.
* Local Flood Hazard Areas (LFHA) are also identified and regulated under both the Town and Village zoning bylaws. Generally these provisions involve no new structures to be built within the established LFHA setback.

*Review of Basin 10 Tactical Basin Plan*

* Prioritize projects, develop final designs and implement stormwater treatment projects identified in the Stormwater Master Plans and Stormwater Mapping Reports
* Work with lake communities to mitigate stormwater runoff from development and private roads reaching the lakes
* Implement Emergency Action Plans for High and Significant Hazard dams
* Develop Lake Watershed Action Plans (LWAP) and provide outreach the lake community on the plan and proposed actions, including installation of riparian buffers on lake tributaries
* Buy-out properties that are highly vulnerable to flooding from willing sellers

*Review of Black River Corridor Plan (Phase 1 and Phase 2 Stream Geomorphic Assessment)*

* Evaluate and mitigate stormwater runoff from the commercial parking lot in Ludlow that appears to be associated with development of gully erosion and sedimentation to reach M34 of the Black River main stem
* Evaluate and mitigate stormwater runoff and sources of sediment to the unnamed, ephemeral tributary that drains steep slopes along Commonwealth Avenue to the north of Ludlow village and joins the Black River main stem in segment M33-B between the Main Street and Mill Street bridge crossings
* Evaluate the geomorphic condition of the RB tributary (M32S1) that joins the Black River main stem in segment M32-C just downstream of the Ludlow wastewater treatment facility.

*Review of Ludlow Stormwater Master Plan*

* FEA and DG hosted a meeting with the Town, MARC, and VTANR in February 2021 to discuss project prioritization and selection of 12 projects for conceptual design development. The consensus from this meeting was to focus concept designs on projects that would address flooding and erosion issues in the Black River valley and erosion and water quality concerns for Lake Rescue. Twelve (12) projects were selected at this meeting for concept designs

1. Project LR-01 – Tepper Drive and Scotts Landing – steep private roads lack ditches and carry sediment into a town-maintained ditch before flowing through a cross-culvert and discharging into Lake Rescue.
2. Project LR-06 – Red Bridge Road: Ditch along north/east side of Red Bridge Road spills across road at bend with moderate erosion, runoff continues along road to lake with moderate erosion down foot path to canoe/kayak access.
3. Project LT-02 – Mountain Road (Blue Lot): Driveway from upper lot associated with LT-4 has gully erosion leading down to the road.
4. Project LT-04 – Mountain Road (Blue Lot): . Numerous gully and rill erosion features along concentrated flow paths through parking lot.
5. Project LT-06 – West Hill Recreation Area: Existing stormwater treatment system along parking lot does not receive any runoff due to grading.
6. Project LT-09 – Town Garage: Sheet Erosion off portion of parking lot flows to grassed area. Some erosion along edge of steep driveway from concentrated flow of parking lot.
7. Project LT-30 – Gill Terrace: Outfall from stormline draining a portion of the retirement complex is causing severe gully erosion down a steep slope to a stream.
8. Project LT-34 – Deeplawn Court: Catch basin adjacent to Elementary School playground drains parking lot and swale from LD-11
9. Project LT-36 – High School: High school roof drains into combined sewer
10. Project LT-37 – Ludlow Community Center: Large portion of school complex drains to storm line with adjacent green spaces around the Community Center.
11. Project LT-38 – Ludlow Community Center: Two catch basins on either side of gravel road leading up to community center and thrift store. Erosion along both sides of road.
12. Project LT-41 – Orchard Street: Runoff from the steep driveway into the cemetery crosses High St and flows to a drop inlet that is mostly filled, discharging to a grassed swale.