Executive Summary

SLR Engineering, Landscape Architecture, and Land Surveying, P.C. was retained to conduct a Local Flood Analysis in the hamlet of Lanesville in the Town of Hunter, New York. This analysis was undertaken for the Town of Hunter, with funding provided by the New York City Department of Environmental Protection through the Ashokan Watershed Stream Management Program, with support from the Greene County Soil and Water Conservation District. The Local Flood Analysis Program is specific to the New York City water supply West of Hudson watersheds and was initiated following Tropical Storm Irene in August 2011 to help communities identify long-term, cost-effective projects to mitigate flood hazards. Flood mitigation recommendations provided in this analysis may be eligible for project implementation funding from a range of funding sources.

Past flood events in Lanesville have caused damage to property and infrastructure, with recent significant flooding in 1996, 2005, 2006, 2010, 2011, and 2020. Homes and other buildings have been lost to flooding and erosion; bridges, culverts, and roads have washed out; and inundation of developed areas has been deleterious to water quality and the local economy.

The flood analysis was guided by the Hunter Lanesville Flood Remediation Committee, which is comprised of individuals with technical and nontechnical backgrounds and represents various interests and stakeholders. The Committee met regularly over the course of the flood analysis process to review results and provide input on flood mitigation alternatives. The process included three public meetings.

This Local Flood Analysis provides an analysis of riverine flooding and erosion hazard and provides recommendations for mitigation and infrastructure improvements within the study boundaries. Analysis was conducted along portions of Stony Clove Creek, Hollow Tree Brook, and Myrtle Brook. Multiple flood mitigation approaches to reduce water surface elevations, including bridge and culvert replacements and floodplain bench alternatives, were evaluated in the project areas. Recommendations are provided and are intended to serve as a blueprint for short- and long-term flood mitigation in Lanesville.

The study area lies in the south-central portion of Greene County and is wholly situated in the Catskill Park. The area is part of a 16.3-square-mile drainage sub-area of the Ashokan Reservoir Watershed, just north of the Ulster-Greene county border, and runs generally along New York State Route 214 and the Stony Clove Creek and its tributaries. The study area includes Hollow Tree Brook and Myrtle Brook and is home to residential neighborhoods, a fire house, post office, and a handful of small businesses. Many of the structures are sited in FEMA's Special Flood Hazard Area. In the higher elevations, the valley walls are steep, and the stream channels narrow. However, in the lower elevations, the channels and the valley flatten out considerably as waters meander downstream towards the county line.

The analysis of riverine flooding and input from the public and the Hunter Lanesville Flood Remediation Committee identified four focus areas with multiple properties in relatively close proximity that are affected by flooding:

- Focus Area 1 (Section 3.1.2) is located in central Lanesville, near the intersection of Jansen Road with NY-214 and the confluence area of Hollow Tree Brook and Stony Clove Creek, both of which contribute to flooding in this area.
- Focus Area 2 (Section 3.1.3) is located in the Stony Road neighborhood and surrounding areas that are prone to flooding from Stony Clove Creek.



- Focus Area 3 (Section 3.1.4) is located along NY-214 across from Beecher Road where flood-prone properties lie between the state highway and Stony Clove Creek.
- Focus Area 4 (Section 3.1.5) is located between Benjamin Road and Wright Road along Stony Clove Creek.

Relocation, elevation, or floodproofing of flood-prone homes in the entire LFA area is recommended, with emphasis on improving flood resiliency in the focus areas where there is relatively high-density development in the floodplain. Some buildings may be near floodplain boundaries or in areas of shallow flooding and may benefit from an Elevation Certificate. Residents of flood-prone properties are encouraged to purchase flood insurance and file claims when damages occur.

Erosion hazard areas were identified through field reconnaissance, desktop analysis, input from the HLFRC, and stream management plans. Areas of stream sediment accumulation and channel downcutting are prone to lateral instability and bank erosion. The steep tributaries of Hollow Tree Brook and Myrtle Brook are sediment source areas that deliver material to the lower gradient Stony Clove Creek. While currently no homes or businesses within the study area appear to be in imminent danger from bank erosion, portions of NY-214 are prone to bank failure and washout. A section of NY-214 located near the Greene and Ulster County border most recently washed out during the December 25, 2020, flood. This reach of Stony Clove Creek is prone to lateral migration and floods the adjacent roadway beginning in the 10-year flood. Recommendations included exploring options for road realignment and/or elevation and stream realignment and dimensioning. This should be done in coordination with the New York State Department of Transportation.

Six public stream crossings were assessed in this study, with an additional seven private stream crossings within the study area. Each public crossing was assessed for its capacity to pass flood flows without overtopping the road and the impact of backwater flooding caused by insufficient capacity. All six crossings are impacted and would be rendered impassable by the modeled floods, either due to overtopping of the bridge or flanking along the overbanks and flooding the approach roadway(s). Despite the poor hydraulic performance, flooding of roads and adjacent homes and businesses is generally more a function of natural floodplain dynamics than it is directly related to these public stream crossings. Estimated span lengths and low chord elevations for recommended replacement bridges are provided, and in all cases, completion of a more detailed analysis to optimize flows and reduce flood surface elevations for public stream crossings can be found in Section 3.3.7.

In coordination with the HLFRC, recommendations for flood hazard mitigation in the Lanesville LFA area were prioritized based on criticality to the community. Prioritized recommendations are listed in Table ES-1 below. These include public infrastructure improvement projects and individual property protection measures for homeowners. Note that priorities may change over time, and it is recommended that HLFRC continue to meet regularly and following any significant flood events to assess any changed conditions and re-prioritize flood hazard mitigation projects as appropriate.

A range of federal, state, and local funding may be available for the implementation of recommendations made in this report. These potential funding sources are discussed in further detail in Section 6.0 of this report.

As the flood mitigation recommendations provided in this Local Flood Analysis are implemented, the Town of Hunter will need to work closely with potential funders to ensure that the best



combinations of funds are secured. It will be advantageous for the town to identify combinations of funding sources to reduce its own requirement to provide matching funds.

Priority	Recommendation	Key Stakeholders	Section in Report
High	 Resiliency upgrades to NY-214, including: Relocation and/or elevation of flood- and erosion-prone sections of roadway, Replacement of undersized bridges and culverts. 	NYSDOT, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.2 New York State Route 214
High	Replacement of the Jansen Road bridge over Stony Clove Creek; berm removal and floodplain bench	GCHD, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.1 Jansen Road Bridge over Stony Clove Creek
High	 Individual property protection measures, including: Relocation, elevation, dry/wet floodproofing, buyout; Participation in the National Flood Insurance Program & obtaining Elevation Certificates; Riparian buffer establishment and/or enhancement; Replacement of undersized private stream crossings where applicable. 	CWC, NYCDEP, GCSWCD, AWSMP, UCSWCD, HLFRC, Lanesville Residents	3.1 Flood-Prone Homes and Buildings3.4.3 Riparian Buffers3.3.8 Private Bridge Crossings
High	Replacement of the Diamond Notch Road bridge over Hollow Tree Brook.	GCHD, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.5 Diamond Notch Road Bridge over Hollow Tree Brook
Medium	Replacement of NY-214 bridge over Hollow Tree Brook	NYSDOT, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.4 NY-214 Bridge over Hollow Tree Brook
Medium	Replacement of NY-214 culvert over Myrtle Brook	NYSDOT, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.6 NY-214 Culvert over Myrtle Brook

 Table ES-1 Recommendations in the Lanesville LFA area

Priority	Recommendation	Key Stakeholders	Section in Report	
Low	Replacement of Benjamin Road bridge over Stony Clove Creek	GCHD, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.3 Benjamin Road Bridge over Stony Clove Creek	
Low	Replacement of Wright Road bridge over Stony Clove Creek	GCHD, NYSDEC, NYCDEP, GCSWCD, UCSWCD, AWSMP, HLFRC	3.3.2 Wright Road Bridge over Stony Clove Creek	
Low	Notch Lake Dam inspection & downstream hazard assessment. Conduct feasibility study for repair, replacement, or removal of dam & implement preferred alternative.	NYSDEC	3.3.9 Notch Lake Dam	
Case- by- Case	Large wood & debris management	NYSDEC, NYCDEP, GCSWCD, AWSMP, UCSWCD, HLFRC	3.4.4 Large Wood and Debris Management	
Case- by- Case	 General Recommendations: Preparation of road closure & detour plans, signage, & barriers; Detailed record-keeping of inundation extents, high-water marks, damages, etc. Continue HLFRC meetings, revise and/or revisit LFA recommendations over time; Updates to stream management & hazard mitigation plans; Adherence to local flood damage prevention code; Participation in the Community Rating System; Letters of Map Revision for implemented flood hazard mitigation projects 	NYSDEC, NYCDEP, GCSWCD, GCHD, GCDES, UCSWCD, NYSDOT, AWSMP, HLFRC, CWC, Town of Hunter, Lanesville Residents	4.0 General Recommendations	
AWSMP: Ashokan Watershed Stream Management Program CWC: Catskill Watershed Corporation GCDES: Greene County Department of Emergency Services GCHD: Greene County Highway Department GCSWCD: Greene County Soil & Water Conservation District HLFRC: Hunter Lanesville Flood Remediation Committee NYCDEP: New York City Department of Environmental Protection NYSDEC: New York State Department of Environmental Conservation NYSDOT: New York State Department of Transportation UCSWCD: Ulster County Soil & Water Conservation District				