

Recommended Actions Summary

Town of North Kingstown, RI

The [Wood-Pawcatuck watershed](#) is vulnerable to flood-related damages, as evidenced by the devastating flooding that occurred in 2010. The Wood-Pawcatuck Watershed Association, working with the watershed municipalities and partner agencies, has developed a [watershed-based management plan](#) to enhance the resiliency of the watershed communities to future flooding and protect river and stream ecosystems, including water quality and habitat. The following is a [summary of key findings and recommendations](#) of the watershed plan for the Town of North Kingstown.

Quick Facts - North Kingstown

- 7.3% of town within watershed
- Includes portions of the Chipuxet River and its watershed
- 6 stream crossings assessed
- 2 dams assessed

Road Stream Crossings

- 1 crossing is hydraulically undersized
- 1 crossing has high geomorphic vulnerability
- All 6 crossings have medium flood impact potential
- 4 crossings limit or restrict aquatic passage

Recommendations:

- Replace and upgrade priority crossings (see table below) to meet flood resilience and aquatic organism passage (AOP) goals
- Consider other upstream and downstream crossings and dams on the same river system
- In general, replace downstream crossings first
- Perform site-specific data collection, geotechnical evaluation, hydrologic and hydraulic evaluation, and structure type evaluation to support design

High, Medium, and Low Priority Stream Crossings (Listed by Priority Ranking)

| Road | Stream | Crossing Type |
|--------------------|----------------|-----------------------------------------|
| Kayla Ricci Way | Drainage Ditch | 24" Concrete Circular Conduit |
| Sylvan Court | Unnamed | 3.5'W x 1.5'H Concrete Box Culvert |
| Explorer Drive | Unnamed | Five (5) 24" Concrete Circular Conduits |
| Indian Corner Road | Chipuxet River | Double 6'W x 3'H Concrete Box Culvert |
| Glen Hill Road | Unnamed | 24" Concrete Circular Conduit |
| Slocum Road | Unnamed | 10.5'W x 2.5'H Concrete Box Culvert |

Dams

- 2 high hazard dams

Recommendations:

Slocum Road Upper Dam (Chipuxet River Tributary)

- NOV's were issued in 2011 and 2012; owner indicated that repairs were made but DEM has not confirmed
- Impoundment supports limited recreational use
- Dam removal should be considered if owner is amenable
- Maintain if owner is not amenable to removal

Slocum Woods Dam (Chipuxet River Tributary)

- Dam was in good condition in 2013 (last documented inspection)
- Dam is owned by Slocum Woods Homeowners Association and is used for recreational purposes
- The impoundment appears to be used for irrigation for turf farming operations (Sodco)
- No action beyond maintenance is recommended for this dam; this recommendation is low priority



Slocum Road Upper Dam



Green Infrastructure

A screening-level assessment of potential green infrastructure (GI) retrofit sites was performed within the Wood-Pawcatuck watershed. When applied throughout the watershed, GI can help mitigate flood risk resulting from outdated and undersized storm drainage systems and increase flood resiliency, as well as improve water quality.

No site-specific GI retrofit concepts were developed for North Kingstown due to the town's small land area within the Wood-Pawcatuck watershed and the limited scope of the GI assessment. The Town should incorporate GI approaches into municipal stormwater infrastructure planning and capital improvement plans to address drainage, flooding, and water quality priorities including MS4 Permit requirements, both within and outside of the Wood-Pawcatuck watershed. GI can be implemented on public sites including municipal parking lots and within the public right-of-way.



Rendering of a typical bioretention area

Land Use Policy and Regulations

Municipal land use policies and regulations can help communities become more resilient to flooding by:

- Preserving undeveloped land
- Siting development in locations less vulnerable to flooding, and
- Promoting designs that reduce runoff and are less likely to be damaged in a flood

Recommendations:

A review was conducted of the land use policies, plans, and regulations of the watershed municipalities. North Kingstown was excluded from the review since it comprises 1 percent or less of the

River Corridor

A detailed geomorphic assessment was performed for approximately 40 miles of rivers and streams in the watershed. Based on the results of the geomorphic assessment, river corridor planning recommendations were developed to identify restoration projects that will reduce flood hazards and downstream sediment loading and improve aquatic habitat.

Recommendations:

Between Slocum Reservoir Dam and area downstream of Railroad Road (Chipuxet River)

- Encourage riparian plantings along the left bank of the river where residential properties abut the channel, to reduce risk of erosion and promote high quality habitat

General Recommendation: Protect and enhance floodplains, wetlands, and riparian buffers in order to reduce flood impacts and improve habitat.



Proposed area of riparian plantings where residential properties are located on the left bank of the Chipuxet River

total watershed area and less than 10 percent of the community's land area is within the Wood-Pawcatuck watershed. General recommendations that apply to North Kingstown include:

- Consider adopting a No Adverse Impact (NAI) Floodplain Management policy
- Amend zoning ordinance to strengthen flood management standards
- Consider implementing fluvial erosion hazard zoning to address riverine erosion hazards
- Amend street and parking lot design standards to reduce impervious cover and remove barriers to LID
- Update design storm precipitation amounts
- Implement road stream crossing standards for new and replacement culverts and bridges