2.3 REGULATORY AND POLICY ENVIRONMENT

WATER USES AND CLASSIFICATIONS

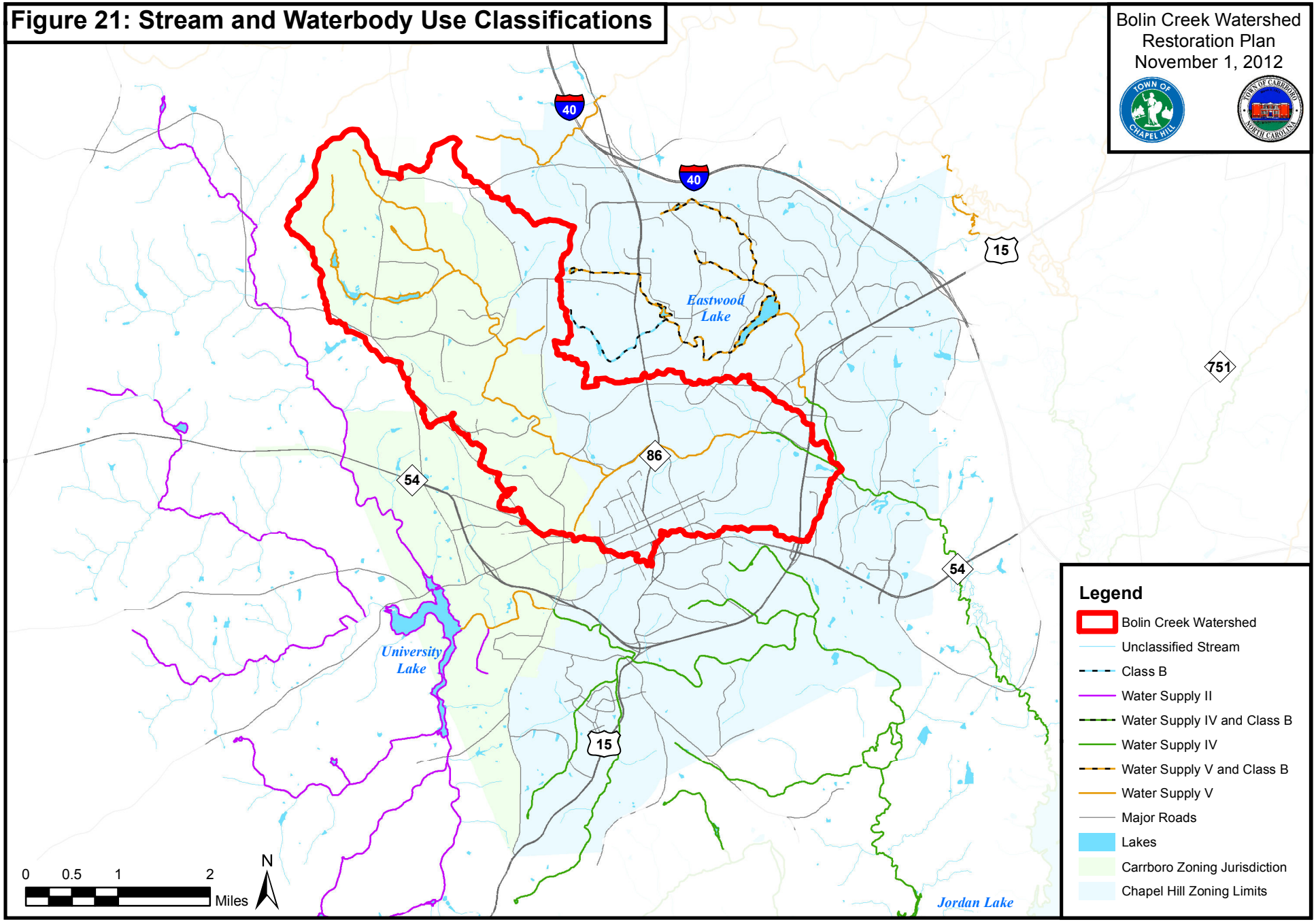
Streams and lakes in our area are classified for particular uses, or ecological functions, by the State in order to set a standard against which we can rate their functioning. Streams, lakes, ponds, and reservoirs ("waters") can have designated uses ranging from "fishable/swimmable" to water supplies with various amounts of protection. Waters may have multiple classifications based on being nutrient sensitive, high quality, or having other characteristics. All waters must at least meet the standards for Class C, also known as "fishable/swimmable". The descriptions of surface water classifications can be found in Table 3. The highest classification assigned for local waterbodies is shown on Figure 21. Note that all waters in our area are at a minimum designated for Class C uses and all are determined to be Nutrient Sensitive Waters. All Water Supply II waters are also designated High Quality Waters.

Table 3: Surface Water Classifications for Local Waterbodies

DWQ Primary Classifications	**Description**
Class C ("fishable / swimmable", "aquatic life")	Waters protected for secondary recreation (wading, boating, and other incidental human body contact), fishing, wildlife, fish and aquatic life propagation and survival, agriculture, and other uses suitable for Class C. No restrictions on watershed development or types of discharges.
Class B ("primary contact")	Waters used for primary recreation (swimming, diving, water skiing and similar) and other uses suitable for Class C. There are no restrictions on watershed development or types of discharges.
WS-II ("Water Supply II")	Waters used as sources of potable water where a WS-I classification is not feasible. These waters are generally in predominantly undeveloped watersheds and only general permits for discharges are allowed. All WS-II are High Quality Waters by definition.
WS-IV ("Water Supply IV")	Waters used as sources of potable water where WS-I, WS-II, or WS-III classification is not feasible. These waters are generally in moderately to highly developed watersheds or Protected Areas, and involve no categorical restrictions on discharges.
WS-V ("Water Supply V")	Waters protected as water supplies which are generally upstream of and draining to Class WS-IV waters or waters used by industry to supply their employees with drinking water or as waters formerly used as water supply. These waters have no categorical restrictions on watershed development or wastewater discharges.
DWQ Secondary Classifications	**Description**
Nutrient Sensitive Waters (NSW)	Waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation.
High Quality Waters (HQW)	Classification to protect waters with quality higher than state water quality standards. WS-II waters are High Quality Waters by definition. There are associated wastewater treatment and development controls enforced by DWQ.

From NC DENR webpage: Guide to Freshwater Classifications Chart. See this document for more details on requirements for watershed protection, critical areas, and other restrictions and requirements for specific land uses.

Figure 21: Stream and Waterbody Use Classifications



ZONING AND LAND USE RESTRICTIONS

Local jurisdictions in the watershed manage land use and development primarily through zoning and additional land use restrictions for particular situations. Zoning requirements encompass everything from land use or type of activity, compatible land uses, land use intensity, building requirements, dimensional standards, buffers between land uses, appearance, multi-modal traffic and access needs, effects on adjacent existing development, in addition to various public health and environmental protections. With regard to environmental protection, the most important aspects of zoning are the type or mix of land use activities (such as residential, commercial, industrial, institutional) and the density or intensity of use. Current zoning requirements for the zoning jurisdictions of the Towns of Carrboro and Chapel Hill are shown in Figure 22. Because of the large variety of zoning district types, and the small distinctions between types in Chapel Hill compared to Carrboro, zoning districts have been generalized to some degree.

While some aspects of environmental protection are included in general zoning requirements, specific areas or sensitive environmental conditions may have additional "overlay" zoning districts or other kind of land use restrictions that are not zoning or overlay districts. These additional land use restrictions, including stream buffers, regulatory floodplains, and water-supply watershed protection areas are shown in Figure 23. Additionally, while not explicitly mapped, steep slopes of over 10% inclination have specific building requirements. These areas must be indicated on individual development applications, but areas where steep slopes are most likely to be found (overlaid with erodible soils) are shown above in Figure 5.

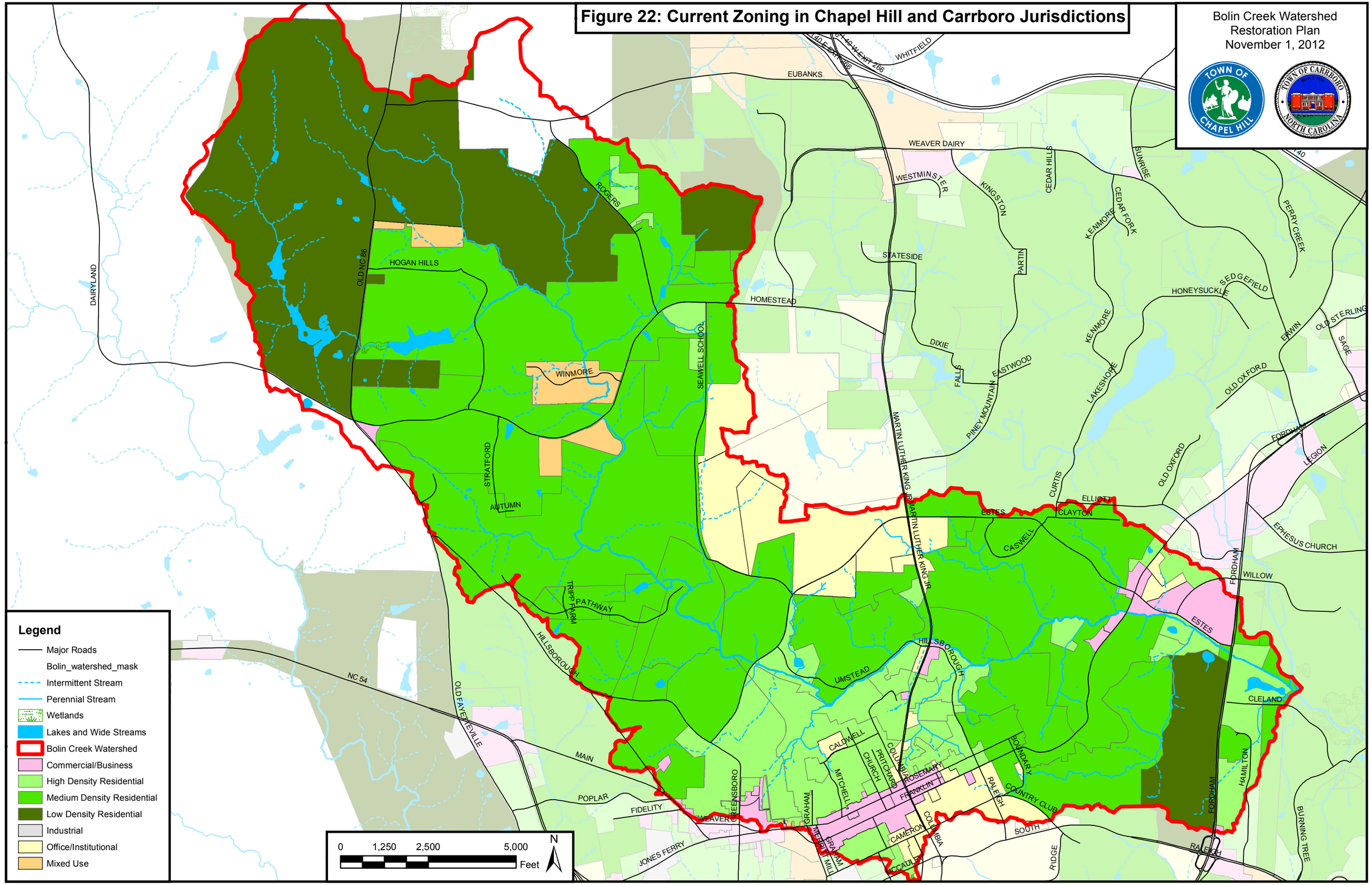
As lands have been developed under this ordinance over the past several decades, areas have been set aside in both public and private open space. Public ownership of land provides some restriction on development opportunities or practices, usually through intensive public or stakeholder involvement in the planning process. These public entities include federal, state, and local governments, the local school system, and the University of North Carolina. There are also a few areas specifically protected by conservation easements which restrict development in perpetuity. Large conservation easements have been placed on the Lloyd-Andrews farmstead and the Adams Tract. The Carolina North development agreement includes a large amount of land set aside for conservation in the Bolin Creek watershed. Government-owned properties are shown in Figure 24.

Figure 22: Current Zoning in Chapel Hill and Carrboro Jurisdictions

Bolin Creek Watershed
Restoration Plan
November 1, 2012

TOWN OF CHAPEL HILL

TOWN OF CARRBORO NORTH CAROLINA



Legend

- Major Roads
- Bolin_watershed_mask
- Intermittent Stream
- Perennial Stream
- Wetlands
- Lakes and Wide Streams
- Bolin Creek Watershed
- Commercial/Business
- High Density Residential
- Medium Density Residential
- Low Density Residential
- Industrial
- Office/Institutional
- Mixed Use

0 1,250 2,500 5,000 Feet

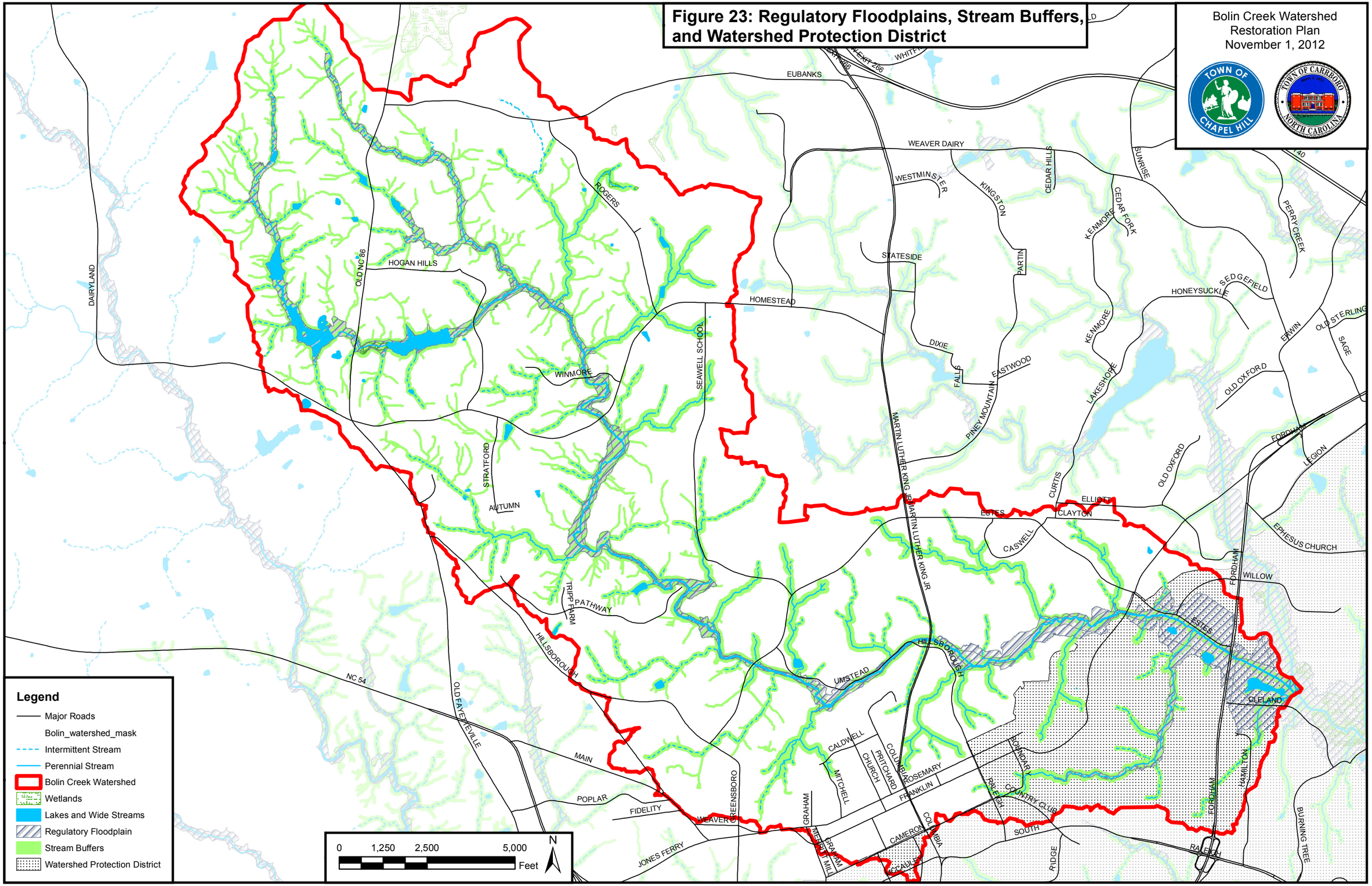
N

Figure 23: Regulatory Floodplains, Stream Buffers, and Watershed Protection District

Bolin Creek Watershed
Restoration Plan
November 1, 2012

TOWN OF CHAPEL HILL

TOWN OF CARRBORO NORTH CAROLINA

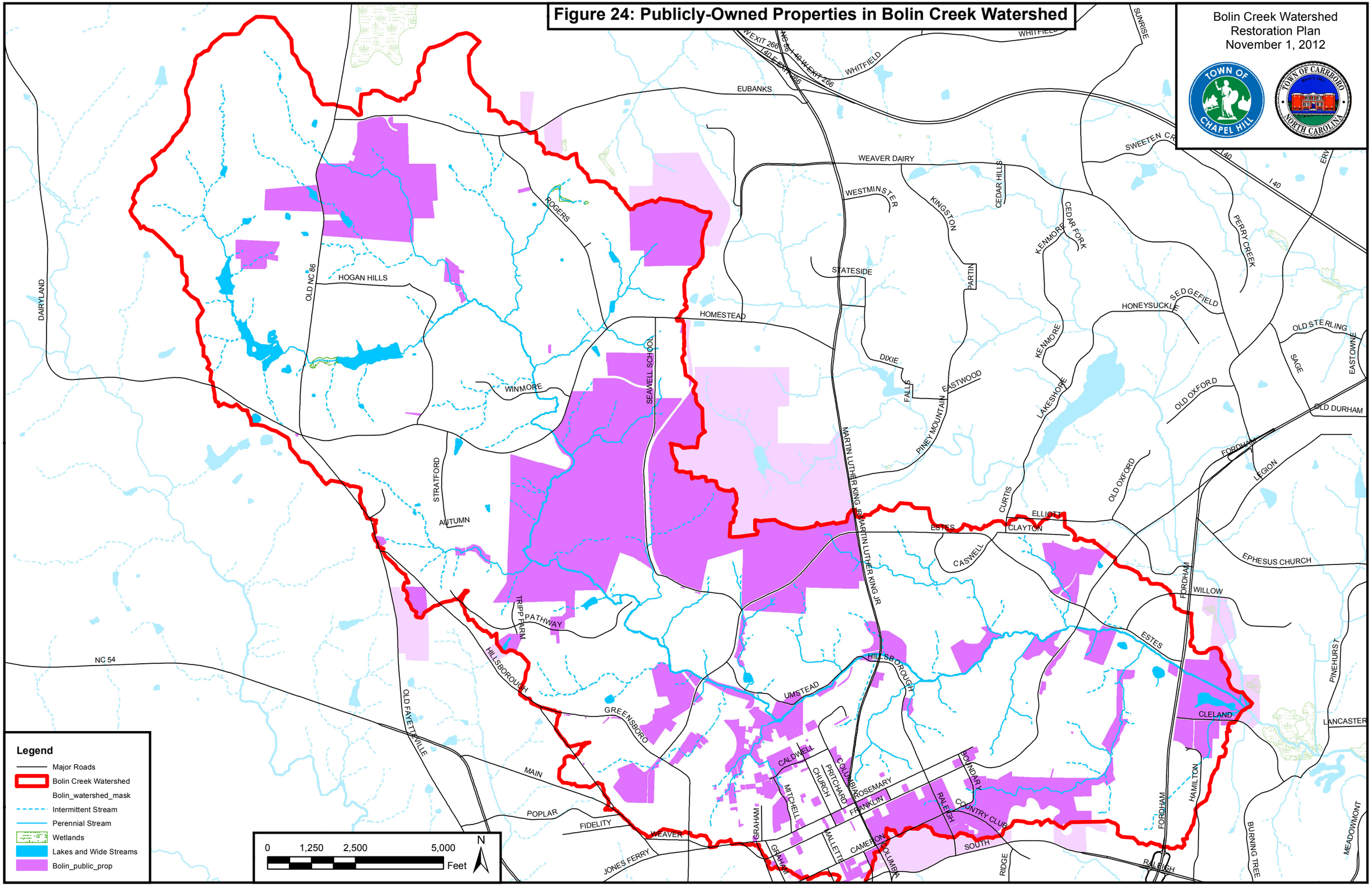


Legend

- Major Roads
- Bolin_watershed_mask
- Intermittent Stream
- Perennial Stream
- Bolin Creek Watershed
- Wetlands
- Lakes and Wide Streams
- Regulatory Floodplain
- Stream Buffers
- Watershed Protection District

Figure 24: Publicly-Owned Properties in Bolin Creek Watershed

Bolin Creek Watershed
Restoration Plan
November 1, 2012



ENVIRONMENTAL REGULATIONS AND PROGRAMS

Much water resource protection in North Carolina is ultimately based on the federal-level Clean Water Act, with some contribution by requirements of the Safe Drinking Water Act and Resource Conservation and Recovery Act, among others. These regulations have led to state-level requirements regarding streams, stream buffers, wetlands, sewage treatment, septic systems, industrial dischargers, land use intensity, building requirements, stormwater management, underground storage tanks, pollution prevention, illegal discharging and dumping, erosion and sedimentation control, groundwater pollution, nutrient management, drinking water wells, reservoirs, dams, and water supply protection and management. Some of these requirements are enforced by the state, but for the most part enforcement is delegated to local jurisdictions, which create local ordinances that meet state requirements yet are customized in a way to meet local needs and capabilities.

State agencies and local governing bodies in the watershed address these requirements through a variety of ordinances, guidelines and manuals, education and outreach, inspection and enforcement, development plan review, zoning and overlay districts, comprehensive and targeted plans, and cooperative programs with citizens and other agencies. Appendix 1 describes the variety of local environmental policies, programs, ordinances, and plans currently in place.

A number of steps have been put in place in recent years to protect creeks from the impacts of development in federal, state, and local government laws, ordinances, and programs. EPA oversees municipal stormwater permits, with administration by States, and ultimate responsibility residing with local governments. In addition to administering the stormwater permits, the NCDWQ also provides regulatory oversight for the Jordan Lake rules which were adopted in 2009. Regulations under federal and state efforts focus on 1) minimizing impacts from construction, and primarily erosion and sediment control, and 2) minimizing impacts after construction due to altered hydrology and water quality. The term coined for the latter category is “post construction” impacts; these regulations focus on designing stormwater controls and insuring adequate operation and maintenance of stormwater management devices. Key components of construction and post construction regulations are shown in Table 4. While new development in the Bolin Creek Watershed is affected by new rules that became fully effective in 2012 to address nutrients in runoff being delivered to Jordan Lakes, and federal regulations, ultimately, a project must comply with either Carrboro’s or Chapel Hill’s ordinance. Both Chapel Hill and Carrboro’s stormwater permits have been through one 5 year cycle; permits for a second cycle were recently reissued by the North Carolina Division of Water Quality. Chapel Hill and Carrboro have delegated authority for erosion control at development sites to Orange County.

In total, the regulations discussed focus on requirements that currently manage erosion and sedimentation on developing sites through approved erosion control management techniques, control peak flow, matching post-development stormwater peak flow rates to pre-development rates, and minimize water quality impacts through removal of total suspended solids. The Jordan rules also, beginning in 2012, limit nitrogen and phosphorus runoff from development sites.

Table 4: Selected Post Construction Stormwater Regulatory Performance Standards for Development

Regulatory Focus	Carrboro Performance Standard	Chapel Hill Performance Standard	Jordan Rules Performance Standard	NPDES Permit

Applicability	5,000 square feet of disturbance	5,000 square feet of disturbance (except 1 and 2 family homes)	½ acre (commercial) of disturbance; 1 acre (residential) of disturbance	1 acre of disturbance
Flood Protection	Control flow rate from 1,2,5,10,25 year recurrence, 24 hour design storms; no increase in 1% flood elevation	Control flow rate from 1,2,25 year recurrence, 24 hour design storms	Treat flow rate from 1 year recurrence, 24 hour design storm	NA
Stormwater volume	Control annual volume increase based on curve number	Control volume from 2-year recurrence, 24-hour design storm event	NA	NA
Water Quality	85% TSS removal; 1 inch rain event	85% TSS removal; 1 inch rain event	2.2 #/ac/yr nitrogen; 0.82 #/ac/yr phosphorus; 1 inch rain event	NA
Other	NA	NA	NA	Provisions for: adequate BMPS, plan review, operation and maintenance, inspection, enforcement, education, recordkeeping

LOCAL DEPARTMENTS, AGENCIES, AND ORGANIZATIONS

These environmental protection and management programs and efforts are implemented by a variety of local government departments and agencies in the watershed. Their efforts are frequently supplemented and augmented by local non-profit organizations. Appendix 2 details the various departments, agencies, and organizations that have a responsibility for, capacity to help with, or interest in participating in environmental management. These organizations form the beginning of a list of stakeholders for Bolin Creek. How they currently interact with water resources is described in the appendix.