



TMDL Assessment Summary

Unnamed Stream (Route 196)

Watershed Description

This **TMDL** assessment summary applies to a 1.36-mile Unnamed Stream (near Route 196), located in the Town of Lisbon Falls, Maine. The Unnamed Stream watershed begins near Wing Street, and is bordered by Ridge Road on the west and Route 125 on the east. The main branch of the Unnamed Stream begins in a forested area near the center of the watershed, and flows south parallel to Parillo Street. A second branch of the Unnamed Stream begins in a developed area near East Avenue, and joins the main branch at the intersection of Route 196 and Bowdoin Street. The stream continues to flow south before entering the Kennebec River near Davis Street. The watershed covers 557 acres in the Town of Lisbon Falls, Maine.

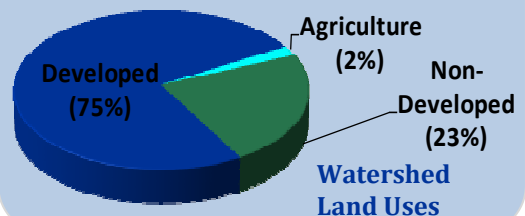
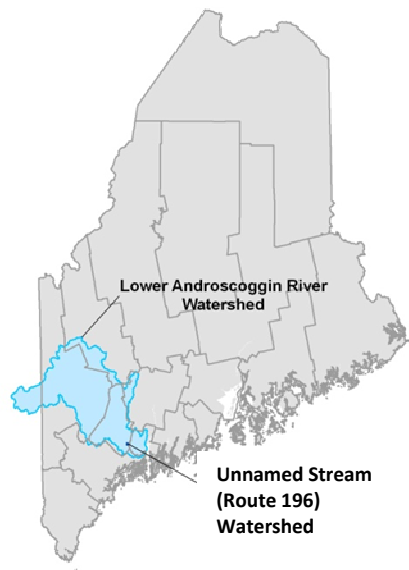
- Stormwater runoff from **impervious cover (IC)** is likely the largest source of pollution to the Unnamed Stream. Stormwater falling on IC in developed areas flows quickly off impervious surfaces, carrying dirt, oils, metals, and other pollutants, and sending high volumes of flow to the nearest section of the stream.
- The Unnamed Stream watershed is predominately developed (75%), characterized by low intensity and open space development.
- Woodland areas within the watershed absorb and filter stormwater pollutants, and help protect both water quality in the stream and stream channel stability.
- The Unnamed Stream (Route 196) is on the list of Maine's Urban Impaired Streams (DEP, 2010).

Definitions

- **TMDL** is an acronym for **Total Maximum Daily Load**, representing the total amount of a pollutant that a water body can receive and still meet water quality standards.
- **Impervious cover** refers to landscape surfaces (e.g. roads, sidewalks, driveways, parking lots, and rooftops) that no longer absorb rain and may direct large volumes of stormwater runoff into the stream.

Waterbody Facts

- **Segment ID:**
ME0104000210_419R01
- **City:** Lisbon Falls, ME
- **County:** Androscoggin
- **Impaired Segment Length:** 1.36 miles
- **Classification:** Class B
- **Direct Watershed:** 0.87 mi² (557 acres)
- **Watershed Impervious Cover:** 18%
- **Major Drainage Basin:**
Lower Androscoggin River Watershed



Why is a TMDL Assessment Needed?

The Unnamed Stream a Class B freshwater stream, has been assessed by Maine DEP as not meeting water quality standards for aquatic life use and has been listed on the 303(d) list of impaired waters. The Clean Water Act requires that all 303(d)-listed waters undergo a TMDL assessment that describes the impairments and establishes a target to guide the measures needed to restore water quality. The goal is for all waterbodies to comply with state water quality standards.

The impervious cover TMDL assessment for the Unnamed Stream addresses the water quality impairments to aquatic life use (stream habitat assessments). These impairments are associated with a variety of pollutants in urban stormwater as well as erosion, habitat loss and unstable stream banks caused by excessive amounts of runoff.



Altered stream channel in Unnamed Stream (Route 196) (Photo: DEP Biomonitoring Program)

Sampling Results & Pollutant Sources

Sampling Station	Sample Date	Statutory Class	Model Results
S-347	1998	B	C

Maine DEP makes aquatic life use determinations using a statistical model that incorporates 30 variables of data collected from rivers and streams, including the richness and abundance of streambed organisms, to determine the probability of a sample meeting Class A, B, or C conditions. Biologists use the model results and supporting information to

determine if samples comply with standards of the class assigned to the stream or river (Davies and Tsomides, 2002).

This impairment is based on DEP's stream habitat assessments. DEP also collected benthic-macroinvertebrate data in 1998 at one sampling station (S-347). Biomonitoring data for the Unnamed Stream (Route 196) indicate that this Class B stream meets Class C biocriteria, but not Class B biocriteria.

Impervious Cover Analysis

Increasing the percentage of impervious cover (%IC) in a watershed is linked to decreasing stream health (CWP, 2003). Because the Unnamed Stream (Route 196)'s impairment is not caused by a single

pollutant, %IC is used for this TMDL to represent the mix of pollutants and other impacts associated with excessive stormwater runoff. The Unnamed Stream (Route 196) watershed has an impervious surface area of **18%** (Figure 1). DEP has found that in order to support Class B aquatic life use, the Unnamed Stream watershed may require the characteristics of a watershed with **8%** impervious

*8% IC represents an approximate **56% reduction** in stormwater runoff volume and associated pollutants when compared to existing pollutant loads.*

Impervious Cover GIS Calculations

The Impervious Cover Calculations are based on analysis of GIS coverage's presented in Figure 1. The impervious area is derived from 2007 1 meter satellite imagery and the watershed boundary is an estimation based on contours and digital elevation models.

cover. This WLA & LA target is intended to guide the application of Best Management Practices (BMP) and Low Impact Development (LID) techniques to reduce the *impact* of impervious surfaces. Ultimate success of the TMDL will be the Unnamed Stream's compliance with Maine's water quality criteria for aquatic life.

Next Steps

Because Unnamed Stream (Route 196) is an impaired water, specific sources of stormwater runoff in the watershed should be considered during the development of a watershed management plan to:

- Encourage greater citizen involvement through the development of a watershed coalition to ensure the long term protection of the Unnamed Stream
- Address existing stormwater problems in the Unnamed Stream watershed by installing structural and applying non-structural best management practices (BMPs); and
- Prevent future degradation of Unnamed Stream through the development and/or strengthening of local stormwater control ordinances.

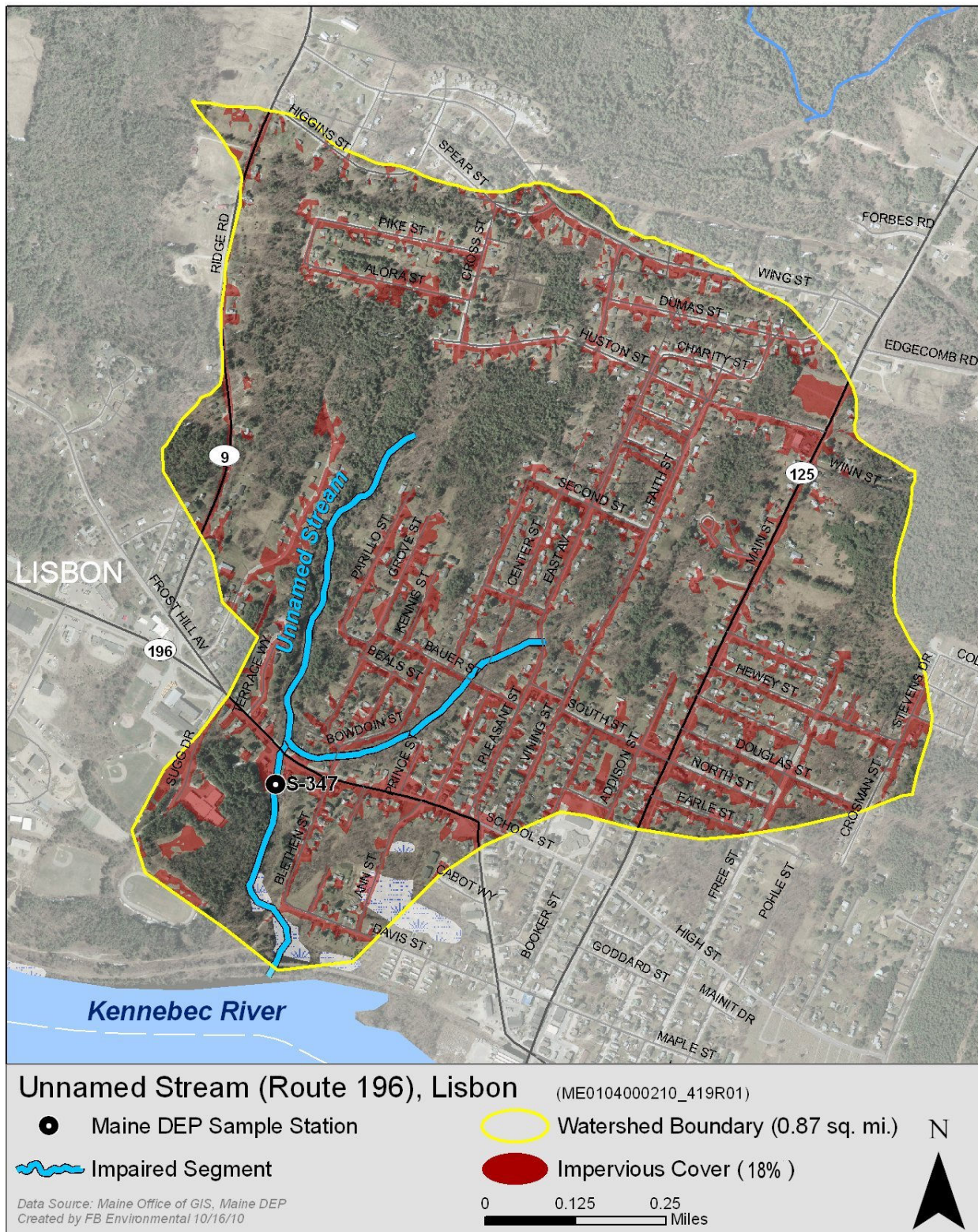


Figure 1: Map of the Unnamed Stream (Route 196) watershed impervious cover.

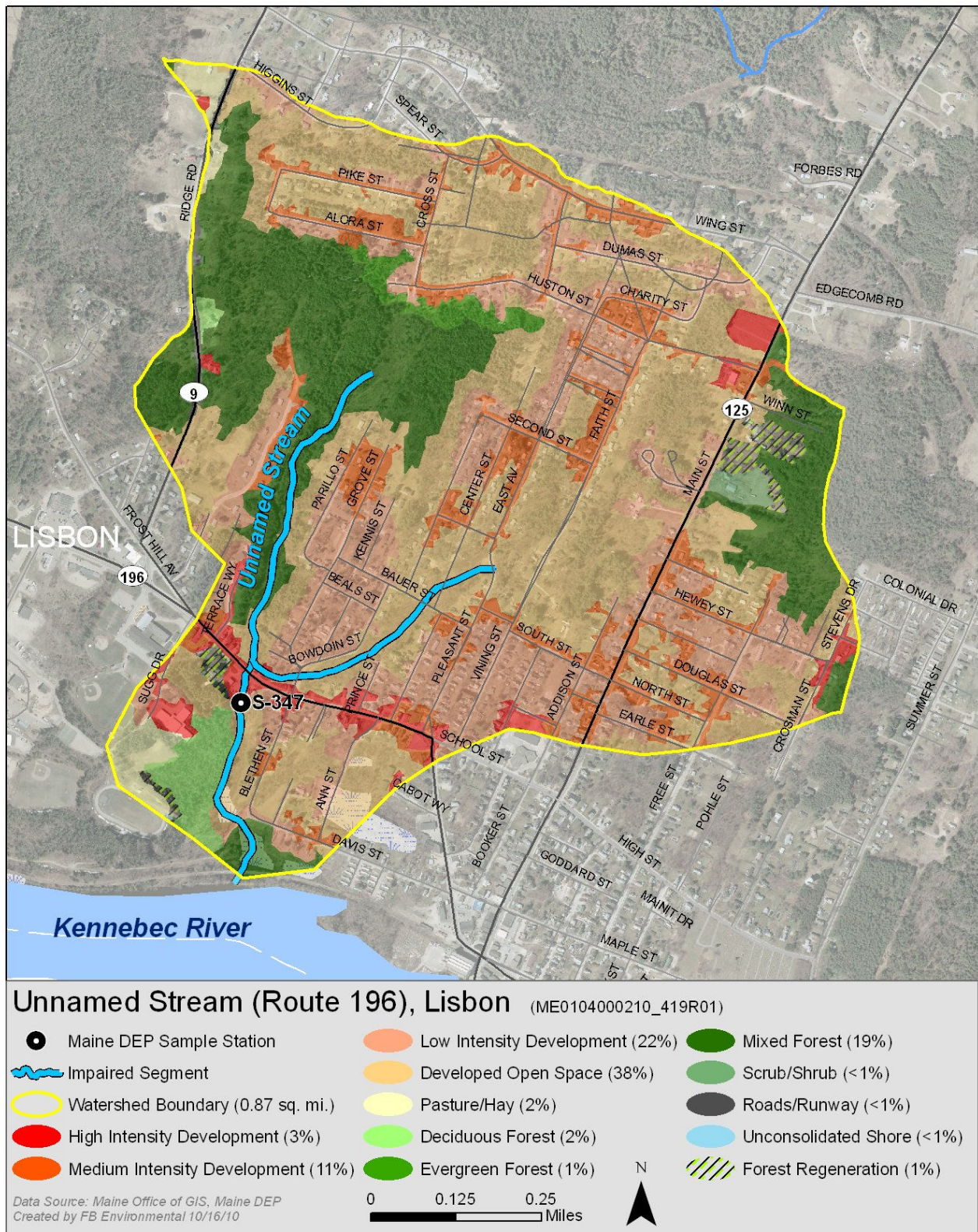


Figure 2: Map of the Unnamed Stream (Route 196) watershed land cover.

References

- Center for Watershed Protection (CWP). 2003. Impacts of Impervious Cover on Aquatic Systems. Watershed Protection Research Monograph No. 1. Center for Watershed Protection, Ellicott City, MD. 142 pp.
- Davies, Susan P. and Leonidas Tsomides. 2002. Methods for Biological Sampling and Analysis of Maine's Rivers and Streams. Maine Department of Environmental Protection. Revised August, 2002. DEP LW0387-B2002.
- Maine Department of Environmental Protection (DEP). 2010. Assessment Database Detail Report for the Unnamed Stream (Route 196). Bureau of Land and Water Quality, Augusta, ME.