



Project Blue Worcester

Watershed Assessment Survey Guide



Section 1: General Site Information

- Using the provided fields, please describe the location of the site using street address and/or GPS coordinates.
- The site number field is optional and can be used to record the number of sites visited by the surveyors.
- A general description of weather conditions is acceptable. Examples include sunny, light rain, heavy rain, snow, etc.
- For field crew, enter initials of individuals present for site inspection.

Section 2: Land Use/ Activity

- Circle the primary land use or land activity of the site

Section 3: Problems

- Commonly found problems are provided under the **Problem Type** column of the table. Use the columns to the right of each problem to describe the severity and type of each problem.
 - o See photo examples of problems and types on the following page.
- Under the **Description** column, circle all the applicable problem types. If there is no problem present, leave the box blank.
- Use the **Notes/Description of Problem** field to record comments on observed problem.
- The **Approximate Size** field can be used to estimate the size of the problem area.

OPTIONAL Section 4: Recommended Best Management Practices (BMPs)

- This section can be used to suggest recommended structural BMPs to address and/or correct the problems found at the site.
 - o **NOTE:** This section is optional as CEI's engineers will review each submitted form to determine the most well-suited potential BMP recommendations.
- A list of commonly used structural BMPs is provided under the **Recommended BMP** heading and suggested BMP or combination of BMPs can be circled. For BMPs not on the list, the *Other* option can be used.
- A more detailed description and sketch of the suggested BMP can be recorded using the **Description of Recommendation(s)** and **Drawing of Recommended BMP(s)** fields.

Please email completed forms, map markups or email descriptions of problem sites to:

ichurch@ceiengineers.com

Problem Type	Description
EROSION - Surface Erosion - Road Shoulder Erosion - Ditch - Shoreline / Stream Bank - Bare/uncovered soil/sand/salt stockpile	Severity: Slight, Moderate, Severe Size: Length/Width, Area



Problem Type	Description
Culverts/Infrastructure	Unstable Inlet/Outlet Crushed/Broken Clogged/Buried Undersized



Problem Type	Description
Parking Lots	Drains directly to waterbody; Evidence of concentrated flow Paved parking lots with potential to improve infiltration



Problem Type	Description	
Shoreline	Undercut Lack of Shoreline Vegetation	Erosion Unstable Access



Problem Type	Description
Waterfowl droppings; Pet waste	Areas where flocks of geese/ducks congregate; Public areas with ongoing pet waste issues
Other (e.g., area to improve stormwater treatment)	Improve treatment; reduce flooding; increase infiltration; re-vegetate





An intuitive and versatile data gathering tool, ArcGIS Survey123 makes collecting data in the field straightforward. This quick reference guide covers the essential details of opening and submitting a Survey123 survey form.

The following steps describe how to download and open a survey in the Survey123 field app. You can also use the URL or QR code that downloads and launches the survey in the **Survey123 field app** or open in **web browser** directly:

Lake Quinsigamond: <https://tinyurl.com/QuinsigSurvey>

Mill Brook: <https://tinyurl.com/MillWatershedSurvey>

Tatnuck Brook: <https://tinyurl.com/TatnuckSurvey>

1. Start Survey123.
2. You will see a sign in screen, select **Continue without signing in**
3. In the gallery, scan the QR code to launch a survey.
4. After the survey is downloaded, select the **Lake Quinsigamond Watershed Assessment Form** to open the survey

Now that your survey is open, you can complete the survey questions and submit your survey. When you're finished with the survey, select the **check mark** at the lower right.

1. If the device is online, a message box appears with three options: **Send now**, **Continue with this survey**, and **Save in Outbox**.
2. **Send now** submits your response, as well as all responses saved in the Outbox.
3. If your device has no internet connection, select **Save in the Outbox**.
4. Once your device is back online, select the **Outbox** from the survey page and select the **Send** button to submit all unsent surveys.

Please contact Ian Church using the contact information below, for any additional questions or assistance that may be needed when completing the form.

ichurch@ceiengineers.com

508-281-5136 ext. 310

Watershed Assessment Field Survey Form

Site # _____ Date: _____ Field Crew: _____

Weather Conditions: _____ Rain in last 48 hours? _____

Location (house #, road name, intersection) _____

GPS Coordinates: _____ Photos Taken? _____

Land Use/Activity: *circle one*

State Road

Residential

Trail/Path

Municipal Road

Commercial

Agriculture

Private Road

Municipal/Public

Construction Site

Driveway

Boat Access

Other: _____

Description of Problems: *circle ALL that apply*

Problem Type	Description (circle)	Notes/Description of Problem	Approximate Size (length x width)
Surface Erosion	<i>Slight Moderate Severe</i>		
Road Shoulder Erosion	<i>Slight Moderate Severe</i>		
Soil	<i>Bare Uncovered Pile Winter Sand</i>		
Culvert	<i>Unstable Inlet/Outlet Clogged Crushed/Broken Undersized</i>		
Ditch	<i>Slight Erosion Moderate Erosion Severe Erosion Bank Failure Undersized</i>		
Parking Lot	<i>Drains Directly to Waterbody Evidence of Concentrated Flow</i>		
Shoreline	<i>Undercut Lack of Shoreline Vegetation Erosion Unstable Access</i>		
Agriculture	<i>Livestock Access to Waterbody Tilled Eroding Fields Manure Washing Off-Site Inadequate Buffer</i>		
Other			

Recommended BMP(s): *circle ALL that apply*

Add Vegetation

Armor with Stone

Install Catch Basin

Establish Buffer

Divert Runoff

Armor Inlet/Outlet (Culvert)

Enhance Buffer

Rain Garden

Replace Culvert

Mulch

Detention Basin

Enlarge Culvert

Add New Surface Material

Infiltration Trench

Install Plunge Pool (Culvert)

Grade

Water Retention Swales

Other: _____

Description of Recommendation(s):

Potential Site Constraints: *circle ALL that apply*

Limited Space

Permitting Issues

May Interfere with Snow

Utilities

Steep Slope

Plowing

Private Property

Difficult Access

Other: _____

Crosses Property Lines

Drawing of Recommended BMP(s):

Please send scans or photos of completed survey form to Iain Church:
ichurch@ceiengineers.com



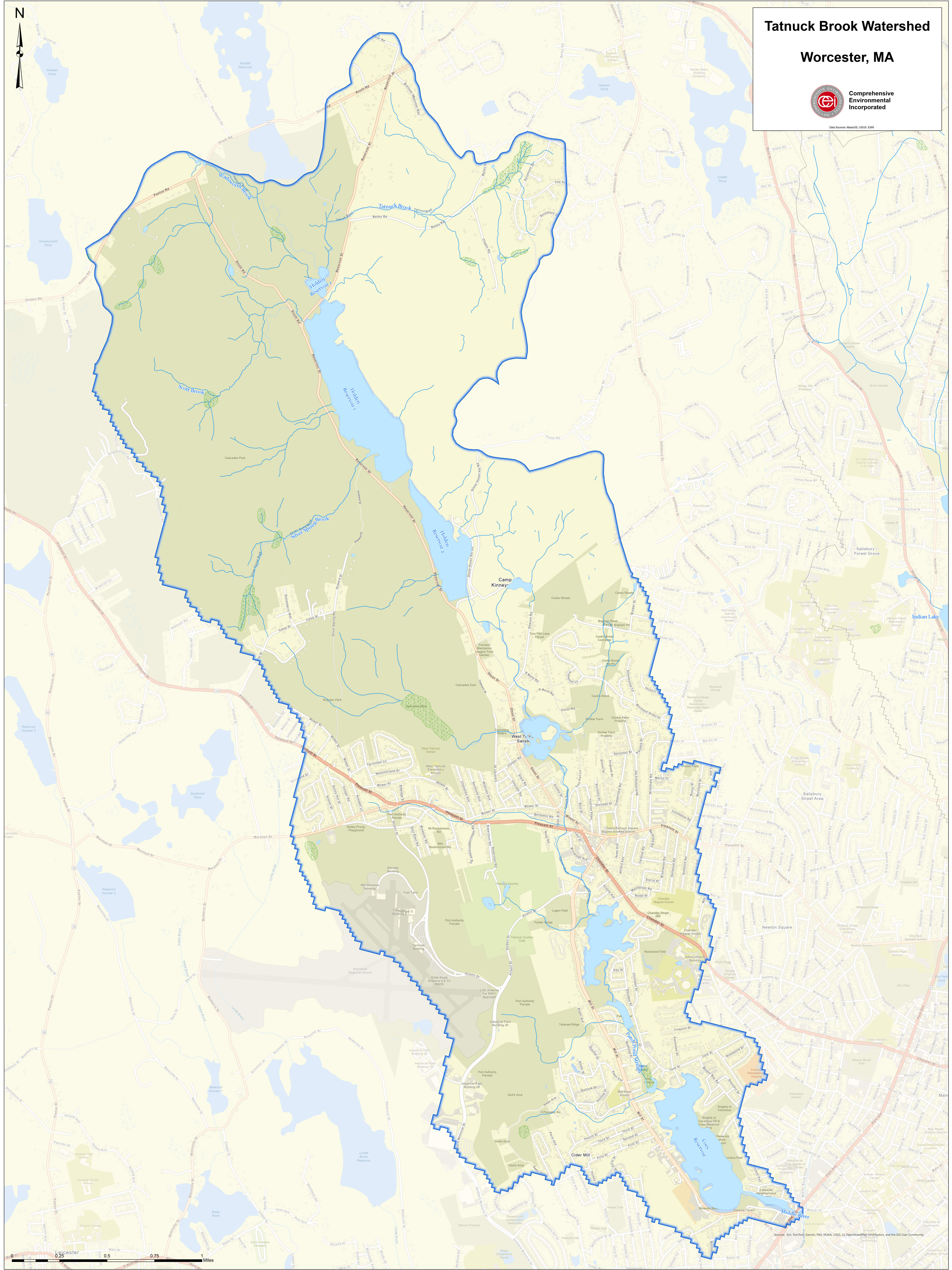
Tatnuck Brook Watershed

Worcester, MA



Comprehensive
Environmental
Incorporated

Data Sources: MERRIS, USGS, ESRI



Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community



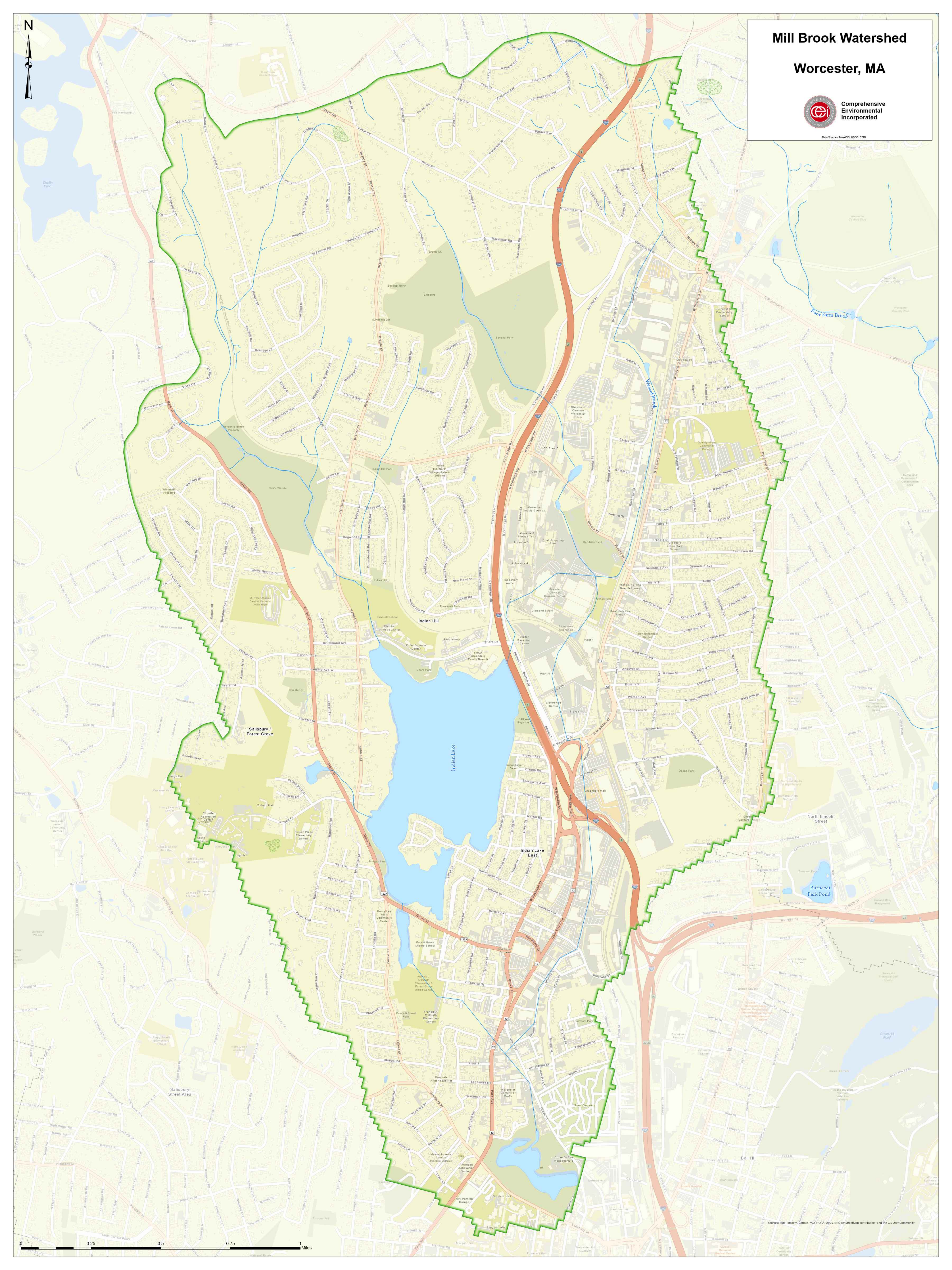
Mill Brook Watershed

Worcester, MA

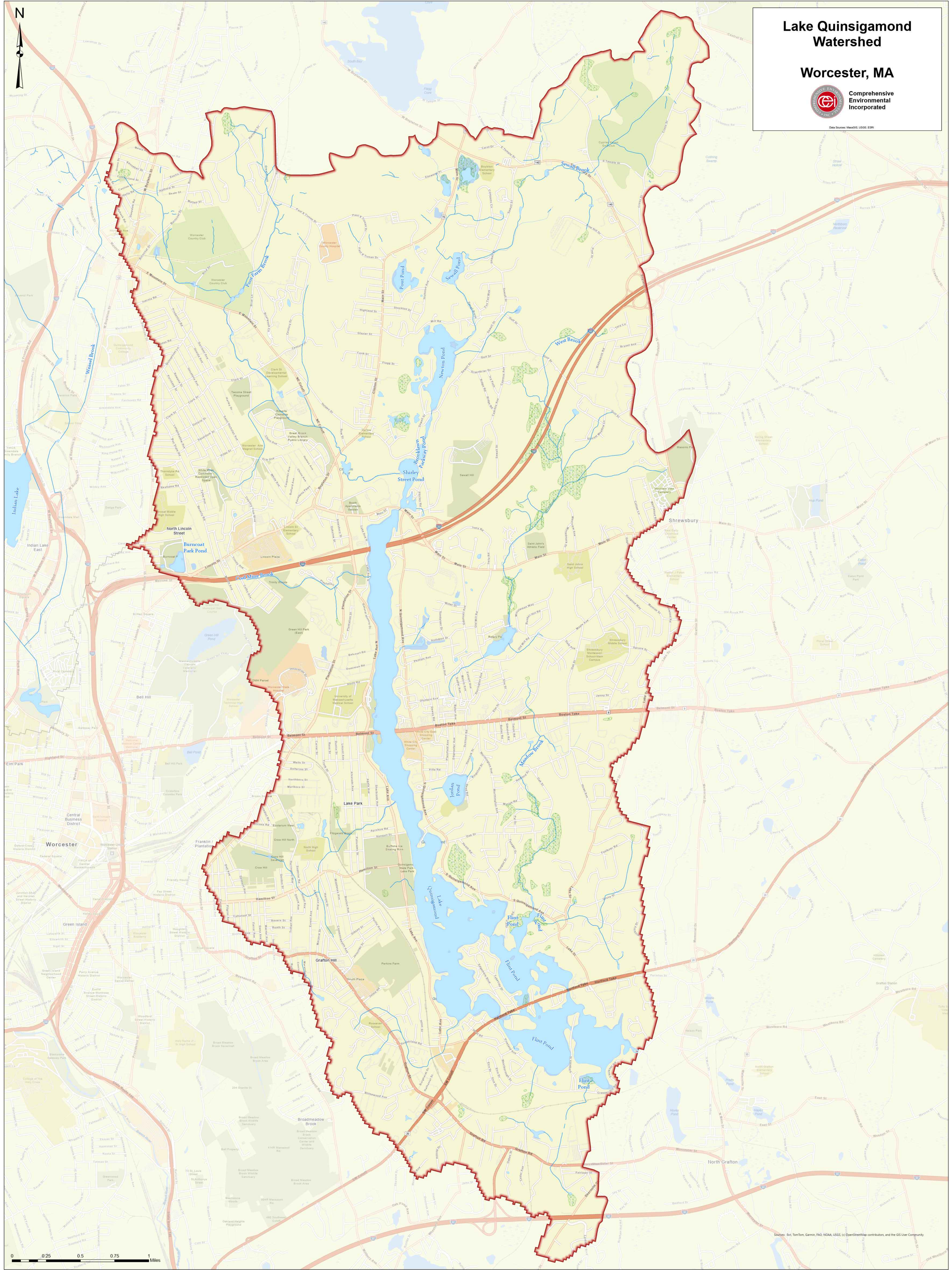


Comprehensive
Environmental
Incorporated

Data Sources: Mapbox, USGS, ERI



Sources: Erik TomTom, Garmin, FAO, NOAA, USGS, (c) OpenStreetMap contributors, and the GIS User Community



Lake Quinsigamond Watershed

Worcester, MA



Comprehensive
Environmental
Incorporated

Data Sources: Max90S, USGS, ERI