

Tioughnioga River Urban Headwaters Action Plan

Cortland, New York

healthy waters - healthy communities



September 2015

Acknowledgments

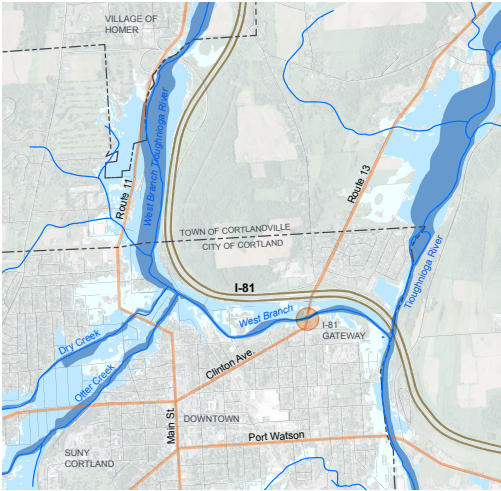
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Tioughnioga Urban Headwaters Action Plan Work Group

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For more information about this project, including additional detail regarding the potential funding sources, application timing and eligibility requirements, please visit: www.walkablewatershed.com/cortland/



Background

The City of Cortland (pop. 19,059) is located within the Tioughnioga River Watershed, a subwatershed of the Susquehanna River and Chesapeake Bay. Historically, the Tioughnioga River has played an important role in supporting Cortland's industrial economy. However, this industrial past has left a legacy of impervious surfaces that limit community access to the river and degrade the Tioughnioga River with urban stormwater runoff and contaminants. Today, Cortland leaders recognize that with several strategic investments, the river could be a significant recreational asset and improve the quality of life for the local community and Downtown area. Cortland and partner jurisdictions are pursuing streetscape and river access improvements along street corridors that parallel and intersect with the West Branch of the Tioughnioga River.

Action Plan Objectives

- Identify green infrastructure technologies to store, treat and infiltrate stormwater runoff and reduce impacts to the Tioughnioga River.
- Coordinate green infrastructure opportunities with transportation and corridor investments.
- Develop an action plan to guide design, funding and implementation.
- Build capacity across jurisdictions to advance green infrastructure solutions in the watershed.

Overview

With funding from the National Fish and Wildlife Foundation, the City of Cortland has developed the Tioughnioga River Urban Headwaters Action Plan to improve local stewardship, advance watershed restoration goals and leverage the river's scenic and recreational assets. The Action Plan outlines specific opportunities to integrate green infrastructure into street improvements and other investments to enhance the Downtown experience, reconnect the Downtown to the river, and improve water quality for the Tioughnioga River. Cortland and regional partners are using this action plan to guide decision-making regarding significant near-term green infrastructure capital improvements in Cortland. With the leadership of the project's work group and regional partners, this effort will also build regional capacity throughout the Tioughnioga River Watershed to implement green infrastructure projects and improve water quality in the Chesapeake Bay Watershed.



From left to right: North Main Street looking south; confluence of Dry Creek and the West Branch Tioughnioga River; Tioughnioga River public boat ramp at Cortland's Yaman Park.

Approach

This action plan is based on a walkable watershed approach, which integrates the flow of water and people into a cohesive strategy to improve the overall health of a community and the surrounding watershed. The concept is based on the idea that high-quality water goes hand-in-hand with a high quality of life, supporting access to the outdoors, enhanced community infrastructure and services, and increased health. There are a range of nationally recognized natural drainage strategies designed to improve the flow and quality of urban rainwater and also provide community benefits. These natural drainage strategies use plants and amended soil to slow, cleanse and absorb urban rainwater before it reaches creeks, rivers, lakes and ultimately the Chesapeake Bay. These strategies also provide community benefits including shade, landscaped areas, education and traffic calming.

A general overview of strategies for integrating stormwater improvements and walkability are described below and site specific recommendations are identified on the concept map (to right) and on the following pages.



Example of on-street natural drainage in Portland, Oregon. Credit: ASLA.

Strategies

On-Street Stormwater Flows – include natural drainage strategies integrated into streetscape and infrastructure design to improve walkability and stormwater management. These green, complete streets:

- Enable safe access for all users (including pedestrians, bicyclists, motorists and transit riders of all ages and abilities)
- Enhance water quality by cleaning stormwater runoff
- Provide safe pedestrian crossings

Safe Crossings – integrate stormwater infiltration and traffic calming measures at strategic intersections, mid-block crossing points and greenway access points.

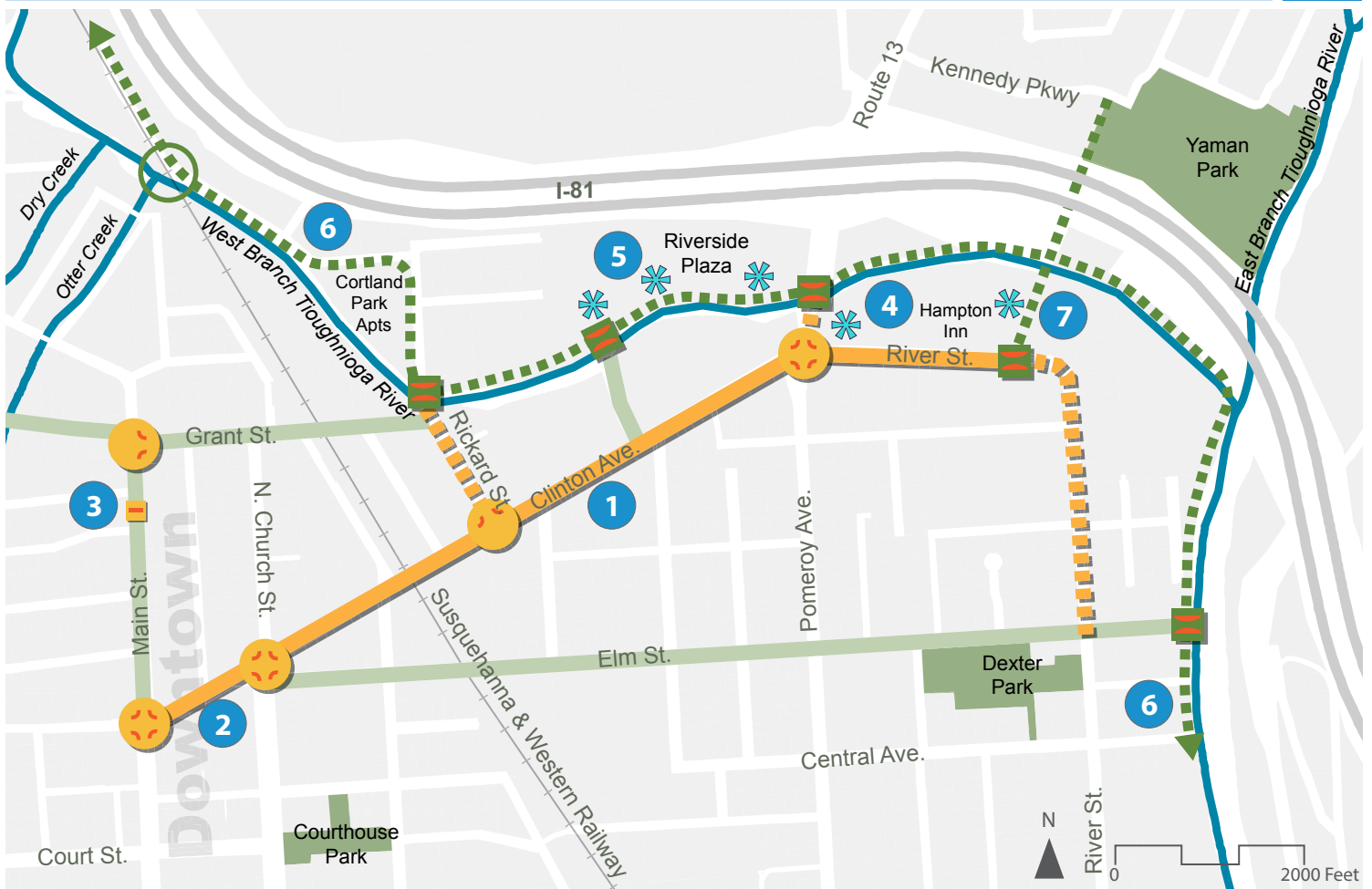
Off-Street Stormwater Flows – include locating rain gardens or swales adjacent to parking lots, trails and other paved areas to capture unmanaged stormwater runoff.

Trails and Greenways – improve pedestrian and bicycle access to waterways and open space areas.

Education and Stewardship – opportunities integrated into environmental education signage, public art exhibits located at greenway access points.



Example of off-street natural drainage in Charlottesville, Virginia. Credit: CWP.



Opportunities

On-Street Stormwater + Safe Crossing

- Primary Streets
- - - Secondary Streets
- ⊙ Safe Intersections
- ▬ Mid-block Crossing
- ▬ Greenway Access

Specific Recommendations (see pages 6-7)

- 1 Clinton Avenue
- 2 Downtown Gateway
- 3 Main Street mid-block crossing

Off-Street Stormwater

- ✱ Planted buffers and bio-retention

Specific Recommendations (see page 8)

- 4 Green Infrastructure – Rain Garden
- 5 Green Infrastructure – Parking Lot Retrofit

Trails and Greenways

- - - Potential Greenway System
- Potential On-Street Greenway System

Specific Recommendations (see page 9)

- 6 Greenway Trail System
- 7 Greenway Green Infrastructure

Watershed Education

Specific recommendations are included on page 10.

ON-STREET OPPORTUNITIES

1 Clinton Avenue

Current Conditions

- Sidewalks on both sides of the street.
- Narrow planting strip.
- Parking on both sides of street in designated areas.

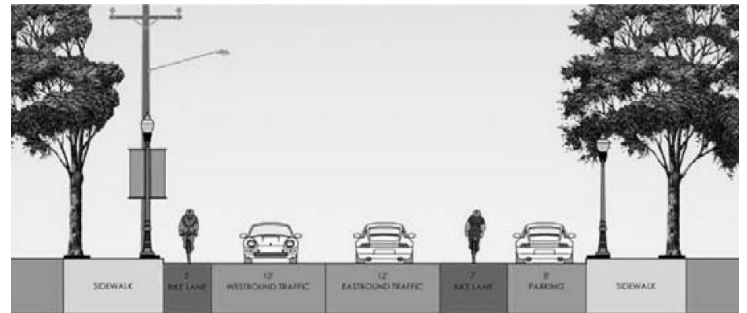
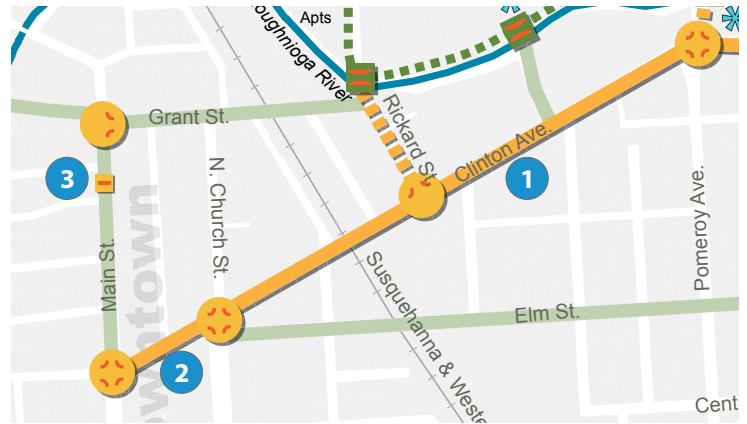
Existing Plans

Through the Clinton Avenue Corridor Enhancements Plan (2012), the City initiated a streetscape enhancement initiative focused on Clinton Avenue and Northeast Gateway. The plan includes:

- Public visioning and design process
- Community goals for the corridor
- Streetscape enhancement options

The preferred Design Option:

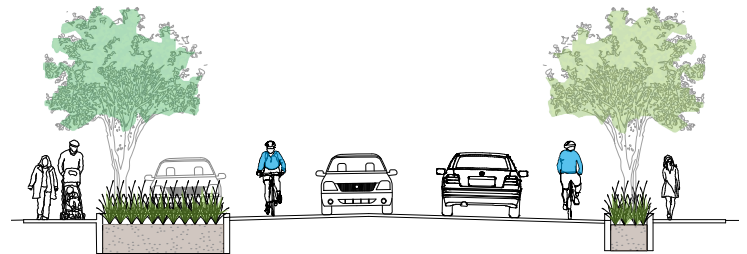
- Two travel lanes
- Two bicycle lanes
- Parking on north side



Clinton Avenue Corridor Enhancements Preferred Alternative (2012)

Potential Opportunities

- Integrate bike lanes on either side of the street.
- Add planted sidewalk bump-outs / curb extensions to increase pedestrian safety and reduce stormwater runoff. Bump-outs could alternate with on-street parking as needed.



Source: City of Philadelphia Green Streets Design Manual



Example of how bikes lanes on either side of the street can be integrated with stormwater bump-outs and on-street parking as needed.

Examples of stormwater bump-outs.

2 Downtown Gateway

Current Conditions

- Sidewalks on both sides of the street.
- Lack of planting strip or street trees.
- On-street parking on alternate sides of the street.

Potential Opportunities

- Enhance downtown gateway aesthetics and pedestrian amenities.
- Explore opportunities for planting strip, and curb extensions as part of Route 11/N. Main Street traffic study.
- Consider planting strips between curb and sidewalk to infiltrate runoff from street and sidewalk.



Looking west at intersection of Clinton Avenue and North Main Street.



Curb extension diagram.



Example of bioretention planting strip.

3 Main Street Mid-Block Crossing

Current Conditions

- Pedestrian crossing at St. Mary's School (61 N. Main St.)
- Two diagonal cross-walks link parking to school entrance and bus stop.
- Persistent on-street stormwater ponding.

Potential Opportunities

- Integrate curb retrofit and cross-walk plaza with crosswalk to capture stormwater and improve pedestrian safety.
- Consider promoting pilot demonstration project.



Curb extension and crosswalk diagram.



Example of curb extension and safe crossing.

4 Rain Garden

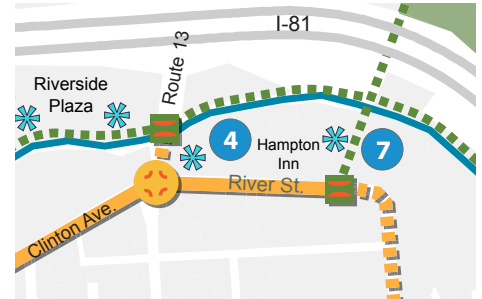
Current Conditions

- City has option to lease vacant land at northeast corner of Clinton Avenue/Route 13 gateway intersection.
- Existing stormwater catch basin on Route 13 is located above grade from vacant land.
- Gateway aesthetic enhancements are planned for vacant land and public right-of-way.



Potential Opportunities

- Locate rain garden on vacant land or public right-of-way to capture runoff from Route 13.



5 Parking Lot Retrofit

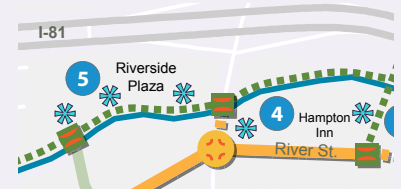
Current Conditions

- Large parking lot located adjacent to river.
- Surface runoff drains to river.
- River visible from parking lot and top of river bank suitable for trail.



Potential Opportunities

- Locate infiltration islands in parking lot to capture and clean parking runoff before entering the river.
- Add bioswales and riparian vegetation along proposed greenway trail adjacent to parking lot.



Vegetated swale at Costco parking lot
Photo courtesy of Sue Donaldson.



A sample bioretention cell or rain garden.
Photo courtesy of WSSI Inc.



Parking lot infiltration island. Photo courtesy of The Watershed Company.

6 Greenway Trail System

Potential Trails

A. West Branch Greenway

Parallels the West Branch to improve recreational access from downtown.

B. Yaman Park Connector

Connects River Street and park using Lehigh Valley Rail Line as trail connection.

C. Dexter Park Connector

Extends West Branch greenway south along the Tioughnioga River City right-of-way.

D. On Street System

Extends greenway system along Elm St., Main St. and Grant St. sidewalks to provide a loop that connects destinations.



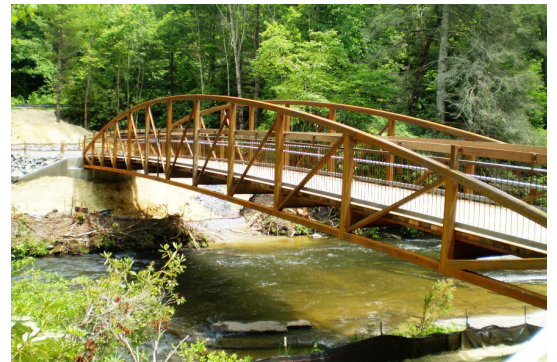
Potential Trail Types



Creek side paved trail
<http://www.bradfordassocri.com>



On street trail
<http://familyride.us/>



Cross creek connection
<http://www.matternandcraig.com/>

7 Greenway Green Infrastructure

Current Conditions

- City right-of-way at River Street connects to West Branch and I-81 underpass.
- Includes gravel access road and utility corridor.

Potential Opportunities

- Integrate stormwater management strategies, such as bioswales with greenway trails.
- Bioswales along greenway trail manage and infiltrate runoff from street to West Branch and minimize runoff from trail surface.
- Integrate environmental education signage into trailheads.



ACTION PLAN

The table below lists action items to advance the opportunities identified in the concept plan, along with potential partners and funding sources.

Action	Partners	Potential Funding Sources
On-Street Stormwater		
1 Clinton Avenue (Route 13 to Church Street intersections) <ul style="list-style-type: none"> Develop engineering and design plans for stormwater infiltration in coordination with storm sewer and streetscape upgrades. Evaluate long-term maintenance options for stormwater infiltration features based on local precedents (Oswego, NY) Build coalition of partners to support project. 	Cortland Dept. of Public Works (DPW) NY Dept. of Transportation (NYSDOT) NY Dept. of Environmental Conservation (NYSDEC) Cortland County Soil and Water Conservation District (CSWCD) Elected officials Residents and business owners	NY Environmental Facilities Corp. (EFC): <ul style="list-style-type: none"> Clean Water Loan Program Green Innovation Grants National Fish and Wildlife Foundation (NFWF): <ul style="list-style-type: none"> Innovative Nutrient and Sediment Reduction Grant
2 Downtown Gateway (Clinton Ave: Church St. to Main St.) <ul style="list-style-type: none"> Coordinate opportunities with future Bike and Pedestrian Plan and Main St. Traffic Study. Promote education to employers about bike-to-work incentives. Evaluate Route 11 / N. Main intersection during Main Street Traffic Study. 	Cortland DPW Cortland Bike and Pedestrian Committee Downtown Partnership	NYSDOT <ul style="list-style-type: none"> Surface transportation enhancement grants
3 Mid-Block Crossing (St. Mary's School, 61 N. Main Street) <ul style="list-style-type: none"> Discuss options with St. Mary's School for safe crossing with stormwater, flood mitigation and education benefits. Pursue design and construction of pilot project if funding is available in near-term. Promote public education of pilot. 	Cortland DPW St. Mary's School Downtown Partnership NYSDOT	Art Council EFC <ul style="list-style-type: none"> Green Innovation Grants NFWF <ul style="list-style-type: none"> Innovative Nutrient and Sediment Reduction Grant
Off-Street Stormwater		
4 Rain Garden (Route 13 / Clinton Ave.) <ul style="list-style-type: none"> Evaluate options for purchasing the property. Consider design options given lot elevation, stormwater flows and proposed gateway treatments. Develop engineering and design plans for rain garden consistent with gateway. 	Cortland DPW CSWCD NYSDOT NYSDEC	EFC <ul style="list-style-type: none"> Green Innovation Grants Program Clean Water Loan Program NFWF <ul style="list-style-type: none"> Innovative Nutrient & Sediment Reduction Grant
5 Parking Lot Retrofit (Riverside Plaza) <ul style="list-style-type: none"> Discuss natural drainage and trail options with property owner. Consider phasing design and construction: <ol style="list-style-type: none"> Riparian area infiltration swales and vegetation (near-term); Parking lot infiltration islands (long-term). 	Riverside Plaza (owners) Cortland County Business Development Corp. Cortland DPW CSWCD	EFC <ul style="list-style-type: none"> Green Innovation Grants NFWF <ul style="list-style-type: none"> Innovative Nutrient & Sediment Reduction Grant
Greenway Trail System		
6-7 Greenway Trail System/Green Infrastructure <ul style="list-style-type: none"> Coordinate proposed trail connection to Yaman Park with DOT viaduct alignment. Phase greenway development by segments – (1) Yaman Park, (2) Route 13 to Yaman Park Connector, (3) Grange to Rickard. 	Cortland DPW Town of Cortlandville NYSDOT NYSDEC	NYSDEC Parks and Trails, NFWF <ul style="list-style-type: none"> Innovative Nutrient and Sediment Reduction Grant
Watershed Education <ul style="list-style-type: none"> Identify watershed education opportunities (rain barrels, signage, mural, downtown initiatives). Discuss demonstration projects with Living History Center. 	Cortland County SWCD, St. Mary's School Living History Center	Arts Council NFWF <ul style="list-style-type: none"> Technical Capacity Grant



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