Tioughnioga River Urban Headwaters Action Plan

Walkable Watershed

healthy waters : healthy communities

Potential Green Infrastructure Strategies
May 6, 2015 Workshop

skeo SOLUTIONS

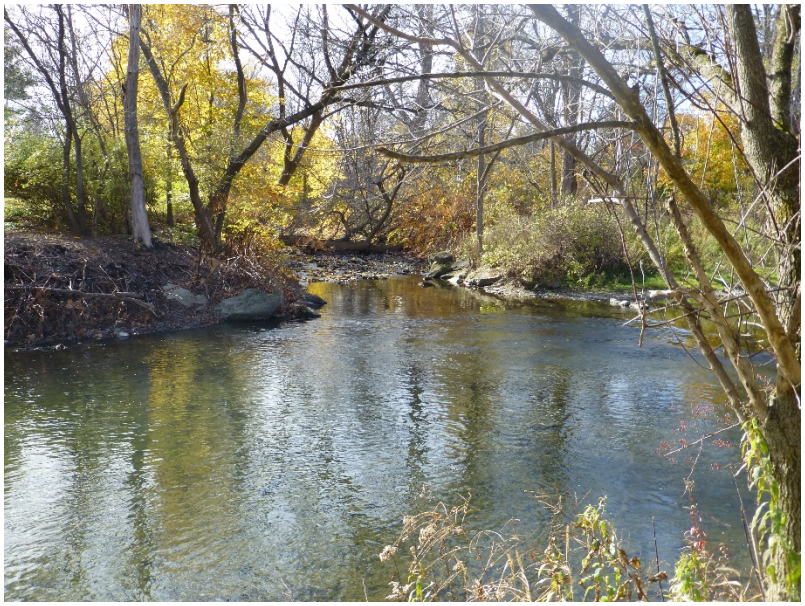
CITY OF CORTLAND NEW YORK 1791 THE CROWN CITY 1901

NATIONAL FISH AND WILDLIFE FOUNDATION NFWF

Background

The City of Cortland is developing the Tioughnioga Urban Headwaters Green Infrastructure Action Plan with funding from the National Fish and Wildlife Foundation (NFWF) Technical Assistance program.

The following strategies provide preliminary concepts that integrate natural stormwater drainage and greenway trails in the Tioughnioga River watershed.

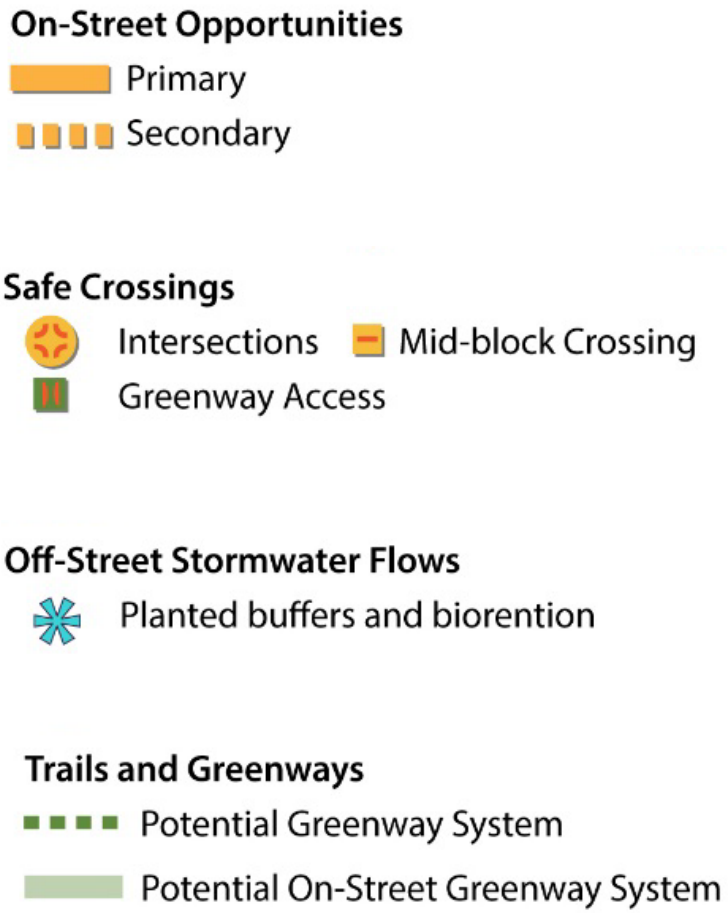


Project Objectives

- Identify potential 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 of green infrastructure improvements.
- Build capacity across jurisdictions to advance green infrastructure solutions in the Tioughnioga River watershed.

Strategies

- **On-street Stormwater –**
  natural drainage strategies integrated into streetscape and infrastructure design to improve walkability and stormwater management.
- **Safe Crossings –**
  integrated stormwater infiltration and traffic calming measures located at strategic intersections, mid-block crossing points and greenway access points.
- **Off-Street Stormwater Flows –**
  rain gardens or swales adjacent to roadways, aligned with trails or along paved areas to capture unmanaged stormwater runoff.
- **Trails and Greenways –**
  improving pedestrian and bicycle access to waterways and open space areas.



Opportunities Map

On-Street

1. Clinton Avenue
2. Downtown Gateway
3. Rickard Street intersection
4. Main Street mid-block crossing

Off-Street

5. Green Infrastructure – Rain Garden
6. Green Infrastructure – Parking Lot Retrofit

Trails and Greenways

7. Greenway Trail System
8. Greenway Green Infrastructure
9. Watershed Education

On-Street Opportunities

Clinton Avenue Enhancement Initiative (2012 Recommendations)

Clinton Avenue Corridor

Main Street Gateway

Rickard Street Intersection

Previous Planning:
Clinton Avenue Corridor Enhancements (2012)

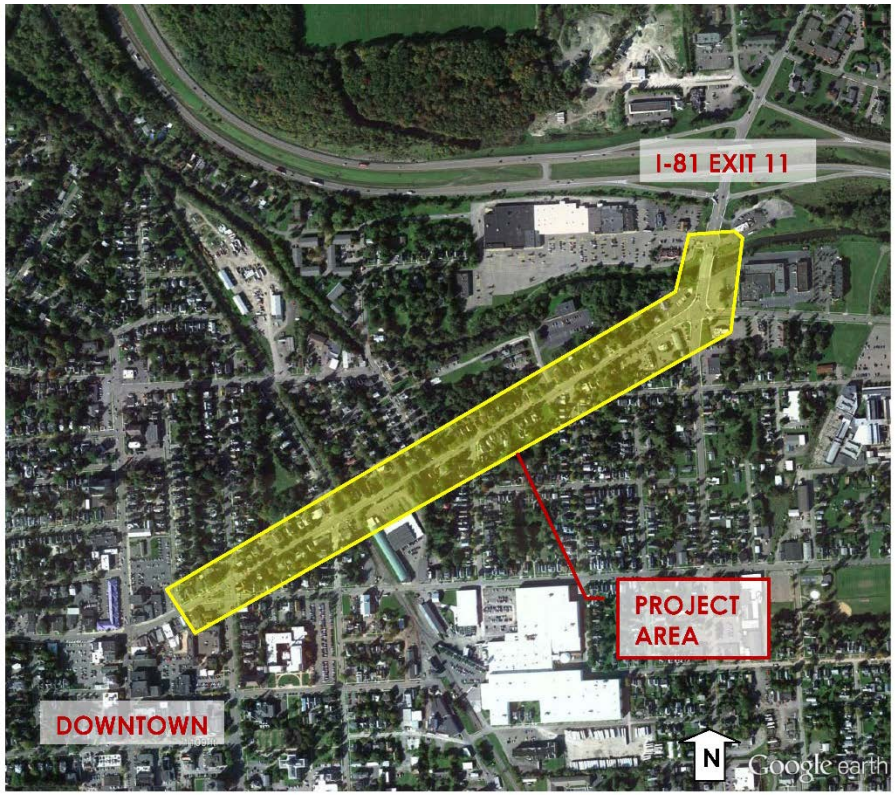


Figure 1 – Project Area

City initiated streetscape enhancement initiative focused on Clinton Avenue and Northeast Gateway.

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

Clinton Avenue Corridor Enhancement Initiative (2012 Recommendations)

- Enhance a sense of community identity and ‘branding’
- Address bicycle and pedestrian comfort and safety
- Enhance economic development by directing visitors to the central business district
- Provide a transition from the I-81 interchange to the historic downtown
- Emphasize connections to the downtown district and SUNY Cortland
- Encourage investment in improvements to private properties
- Promote the city as aspirational and forward-looking
- Provide innovative and architecturally interesting design solutions that reference Cortland’s unique character

Clinton Avenue Corridor Enhancement Initiative (Streetscape Design Options)

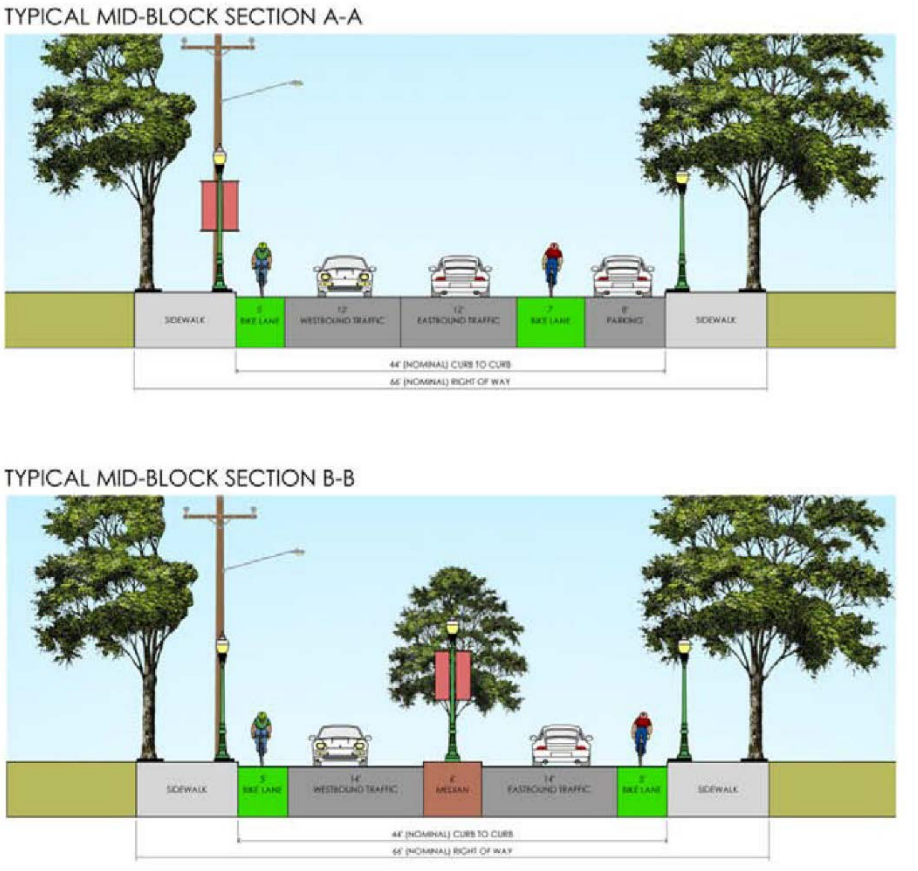


Figure 7 – Preferred streetscape concept, typical plan and sections

Preferred Clinton Avenue design option:

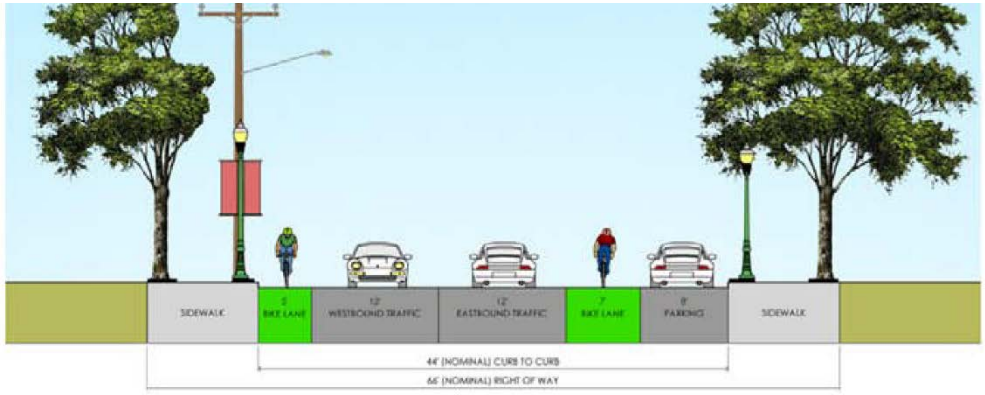
- Two travel lanes
- Two bicycle lanes
- Parking on north side

Opportunities to integrate green infrastructure stormwater management practices into Clinton Avenue streetscape design are highlighted on pages 11-18.

1. Clinton Avenue

Current conditions

- Sidewalks on either side of the street.
- Narrow planting strip.
- On-street parking on both sides of street in designated areas.



2012 enhancement recommendations include bike lanes and parking on north side only.

1. Clinton Avenue

Potential Opportunities – On Street

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

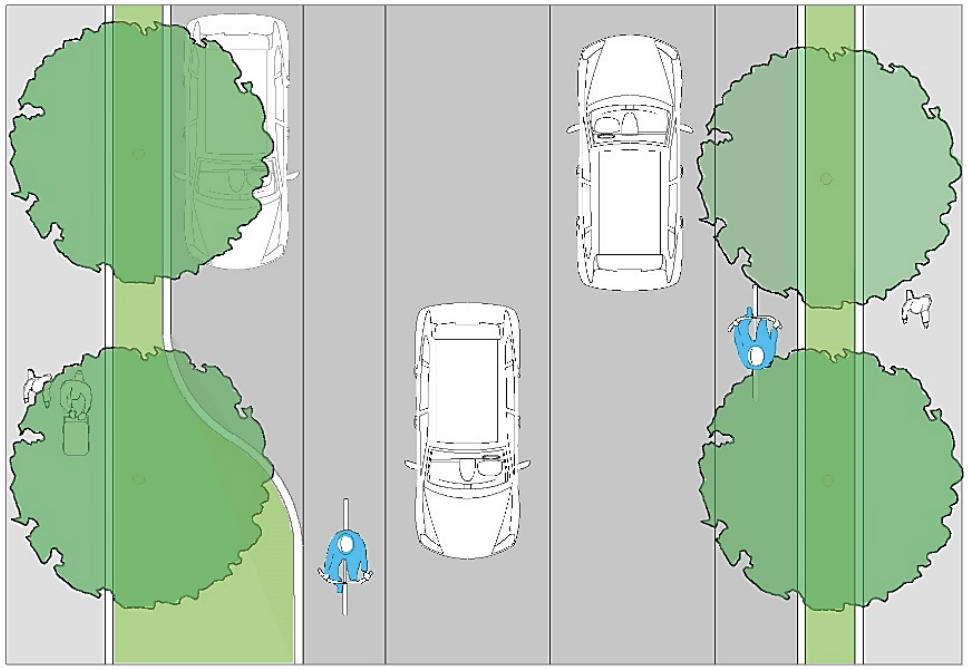
Figure 2.2: Three-Dimensional View of a Stormwater Bump-out

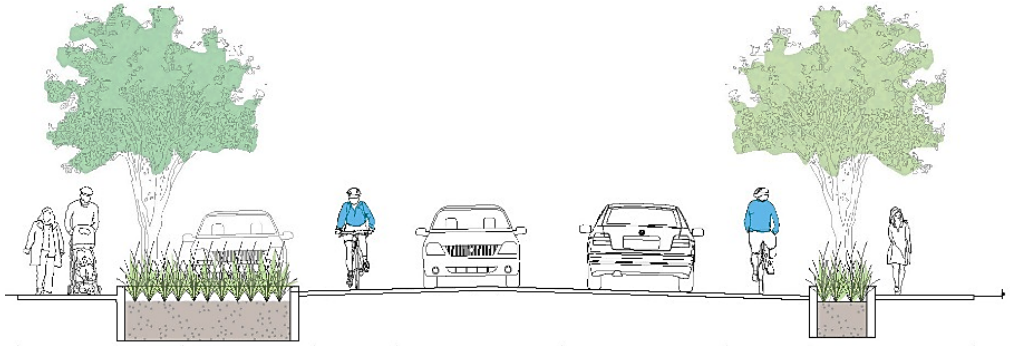
Mid-block Stormwater Bump-out

1. Clinton Avenue

Potential Opportunities – On Street

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





2. Downtown Gateway

Current conditions

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

2. Downtown Gateway

Potential Opportunities – On Street

- Enhance downtown gateway aesthetics and pedestrian amenities.
- Explore opportunities for planting strips, and curb extensions.
- Consider planting strips between curb and sidewalk to infiltrate runoff from street and sidewalk.

2. Downtown Gateway

Potential Opportunities – On Street

- Integrate pedestrian amenities and stormwater treatments at intersection of Clinton Ave. and Main St.
- Consider curb extensions with infiltration bump-outs to minimize crosswalk distances and infiltrate on-street runoff.
- Integrate bike lanes or share arrows.

3. Clinton Avenue & Rickard Street

Current conditions

- Sidewalks on either side of the street.
- Narrow planting strip.
- On-street parking on both sides of street in designated areas.
- Potential access to greenway system

3. Clinton Avenue & Rickard Street

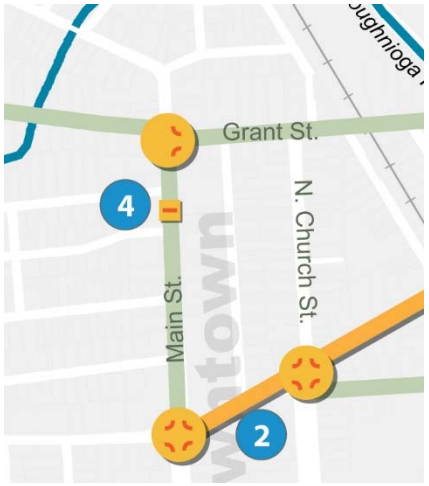
Potential Opportunities – On Street

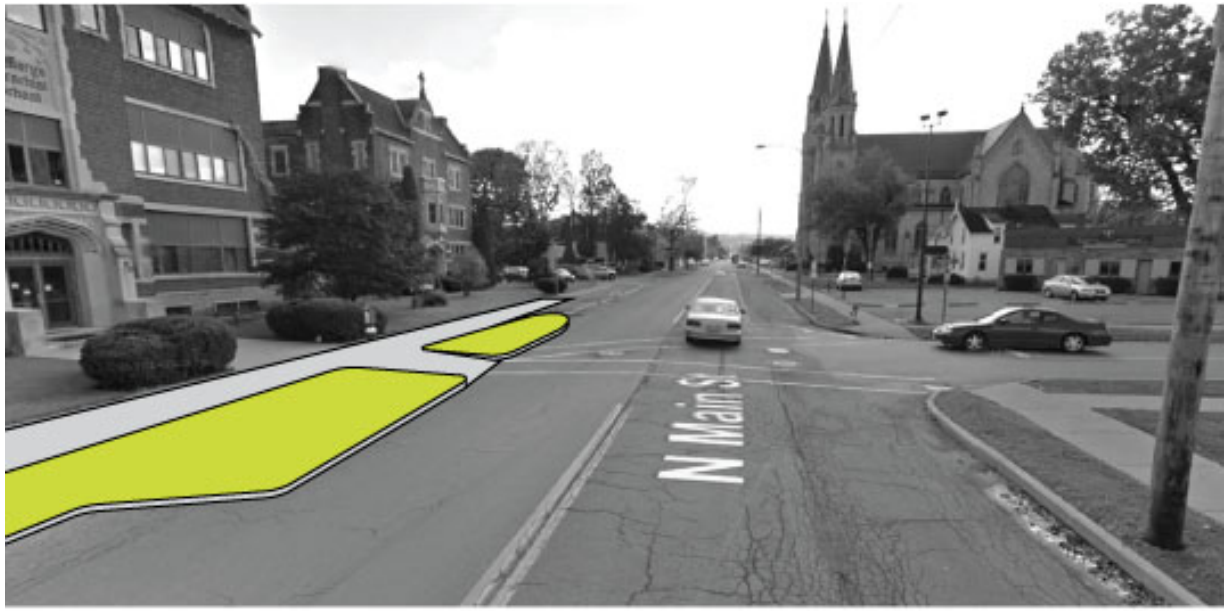
- Consider stormwater bump-outs at intersection.
- Integrate signage to river greenway system.

4. Mid-block School Crossing

Potential opportunities

- Integrate curb retrofit with crosswalk to capture stormwater and improve pedestrian safety.





Off-Street Opportunities

Green Infrastructure – Rain Garden

Green Infrastructure – Parking Lot Retrofit

5. Rain Garden

Existing Conditions

- City leases land at gateway intersection.

5. Rain Garden

Potential opportunities

- Add a rain garden along public right-of-way to capture and clean runoff from Highway 13.

6. Parking Lot Retrofit

Existing 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.

West Branch Tioughnioga River on left and parking lot on the right.

6. Parking Lot Retrofit

Potential opportunities

- Add infiltration islands in parking lot to capture and clean parking run off before entering the river.
- Add bioswales, riparian vegetation along proposed greenway trail.

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

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

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

Trails + Greenways

Greenway Trail System

Greenway Green Infrastructure

Watershed Education

7. Greenway Trail System

Potential Trails

A. West Branch Greenway

Paralleling the West Branch to improve recreational access from downtown.

B. Yaman Park Connector

Using former Lehigh Valley Rail Line as trail connection.

C. Dexter Park Connector

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

D. On Street System

Sidewalks extending greenway system to provide a loop and connect destinations.

7. Greenway Trail System

Potential Trails

Cross creek connection

http://www.matternandcraig.com/

On street trail

http://familyride.us/

Creek side paved trail

http://www.bradfordassocri.com

8. Greenway Green Infrastructure

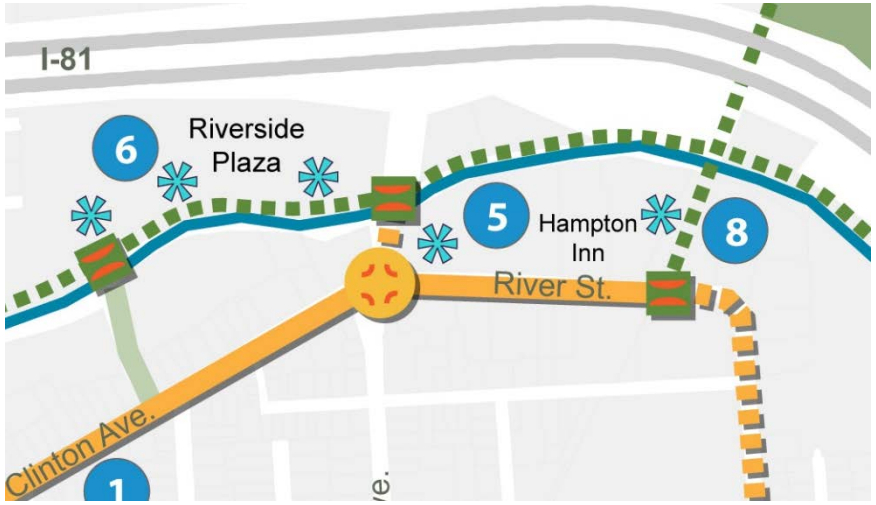
Current Conditions

- City R.O.W. at River Street connects to West Branch and I-81 underpass.
- Gravel access road and utility corridor.

8. Greenway Green Infrastructure

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 trailhead.



9. Watershed Education

Potential opportunities

- Increase river awareness to help build recognition of river as a public asset.
- Integrate public art and signage to promote watershed awareness at greenway and river access points.
- Explore partnership with Living History Center to include green infrastructure demonstration project as part of outdoor learning programming.

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

Greenway signage.
Photo courtesy of Camp Washington.

On street murals where creek crosses roadways.
http://www.pasadenanow.com/

Opportunities Map

On-Street

1. Clinton Avenue
2. Downtown Gateway
3. Rickard Street intersection
4. Main Street mid-block crossing

Off-Street

5. Green Infrastructure – Rain Garden
6. Green Infrastructure – Parking Lot Retrofit

Trails and Greenways

7. Greenway Trail System
8. Greenway Green Infrastructure
9. Watershed Education

Actions

What actions are needed to implement these strategies?

Who are key stakeholders and partners?

Prioritization

Which of these actions are most needed?

Are there low cost actions that can be accomplished soon?

Potential Funding Options

- NY Environmental Facilities Corporation Loans/Grants
- 2015 Consolidated Funding Application opportunities
- NFWF Innovative Sediment and Nutrient Reduction Grant
- Others?

Next Steps

- Develop Concept Plan with action items based on today's working session. (Skeo Solutions)
- Applications for Implementation Funding. (City and related partners)

Contact Information

City of Cortland Contact:

Mack Cook, Director of Administration and Finance

mcook@cortland.org

(607) 756-7312

Skeo Solutions Contact:

Matt Robbie , Project Manager

mrobbie@skeo.com

(434) 975-6700 x278

Tioughnioga Urban Headwaters Action Plan website:
http://www.walkablewatershed.com/cortland/