



Tioughnioga River Urban Headwaters Action Plan

# Walkable Watershed

healthy waters : healthy communities

Potential Green Infrastructure Strategies

Clinton Avenue Corridor

February 2015 (Draft)



# 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.

Building on recommendations from the project work group's November 2014 working session, the following strategies provide preliminary concepts specific to the Clinton Avenue Corridor.





# 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.

## On-Street Opportunities

-  Primary
-  Secondary

## Safe Crossings

-  Intersections
-  Mid-block Crossing
-  Greenway Access

## Off-Street Stormwater Flows

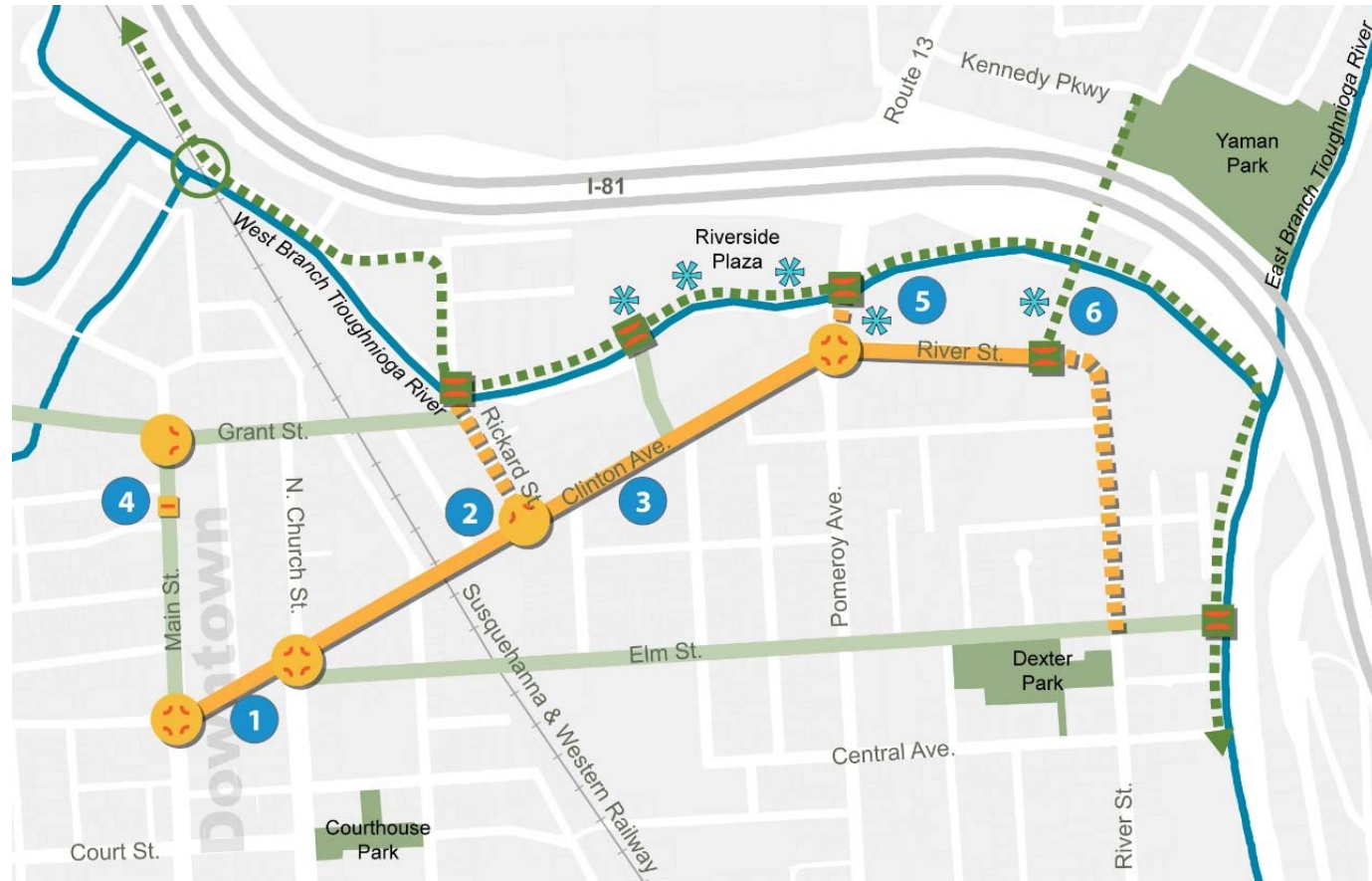
-  Planted buffers and bio-retention





# Opportunities Map

1. Downtown Gateway
2. Rickard Street intersection
3. Clinton Avenue
4. Main Street mid-block crossing
5. Rain Garden on public property
6. Greenway green infrastructure



### On-Street Opportunities

- Primary
- Secondary

### Off-Street Stormwater Flows

- Planted buffers and bioentention

### Safe Crossings

- Intersections
- Mid-block Crossing
- Greenway Access

### Trails and Greenways

- Potential Greenway System
- Potential On-Street Greenway System



# 1. 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





# 1. 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.



# 1. 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 bumpouts to minimize crosswalk distances and infiltrate on-street runoff.
- Integrate bike lanes or share arrows.





## 2. 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



## 2. Clinton Avenue & Rickard Street *Potential Opportunities – On Street*

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





### 3. 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.





### 3. Clinton Avenue

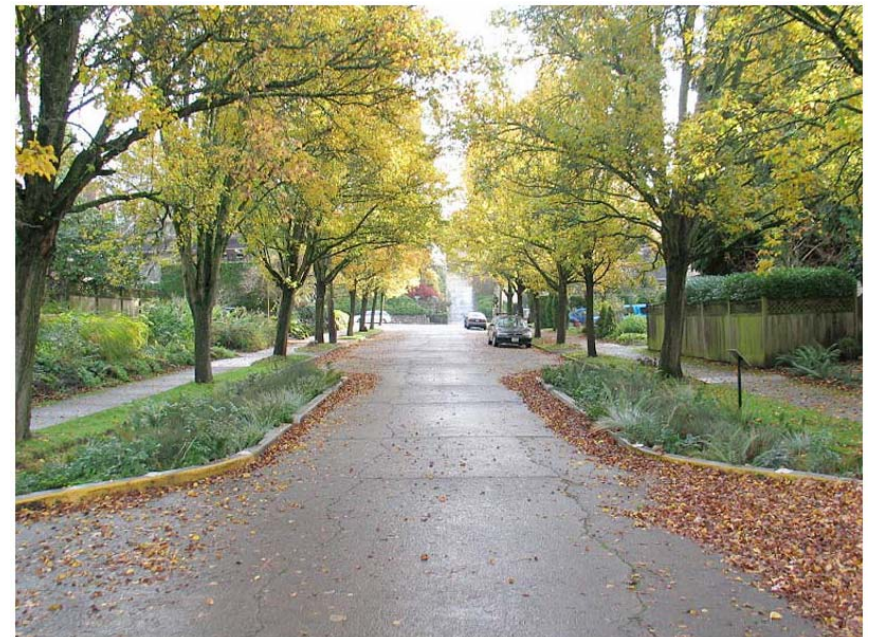
#### Potential Opportunities – On Street

- Integrate bike lanes or share arrows.
- Add planted sidewalk bump outs / curb extension to increase pedestrian safety and reduce stormwater runoff.

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



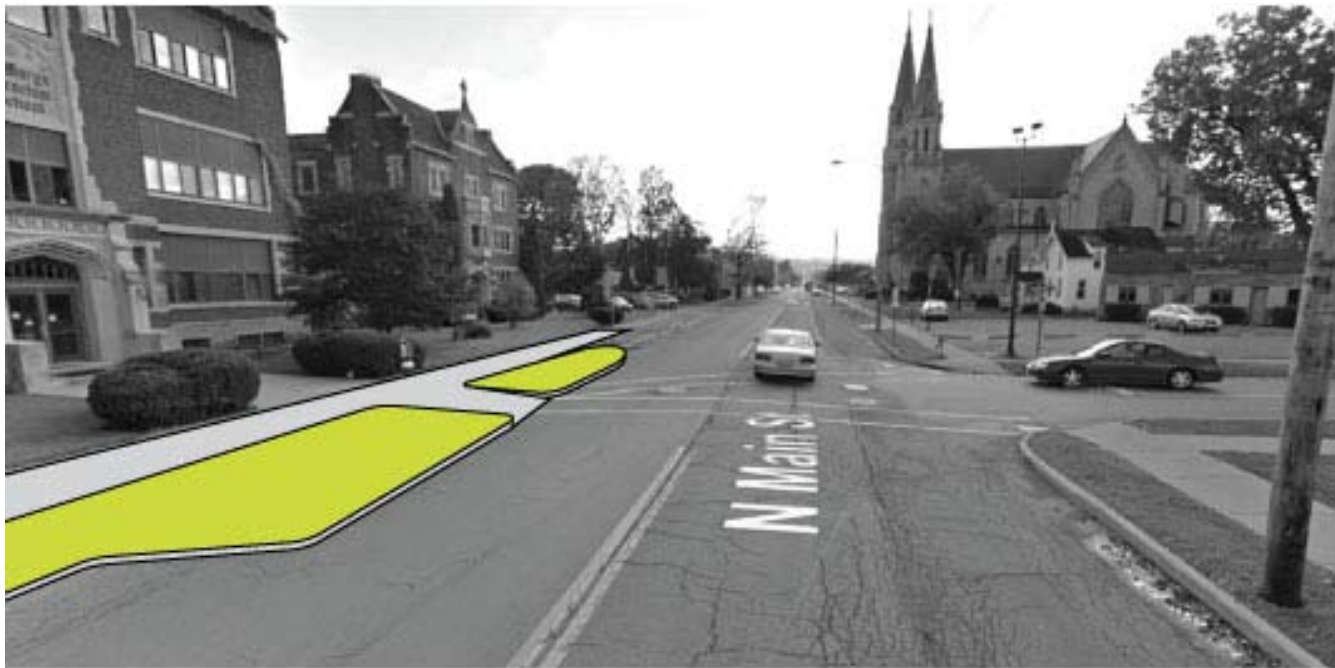
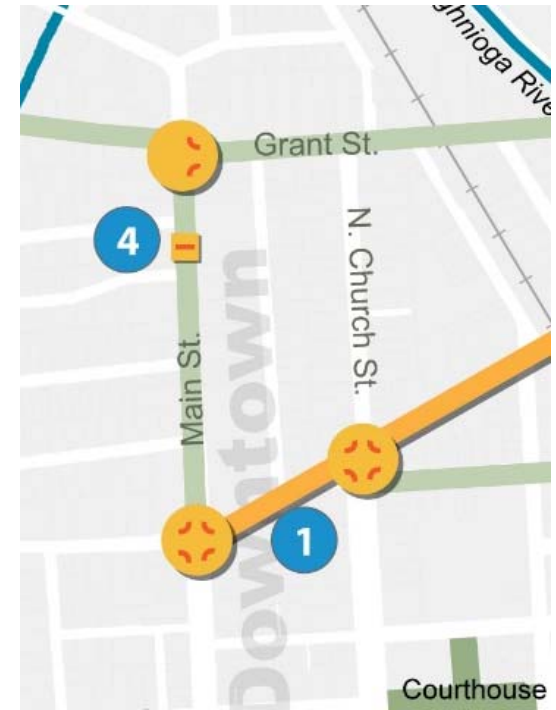
Mid-block Stormwater Bump-out



## 4. Mid-block School Crossing

### *Potential opportunities*

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





## 5. Rain Garden

### *Existing Conditions*

- City owned 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. 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.

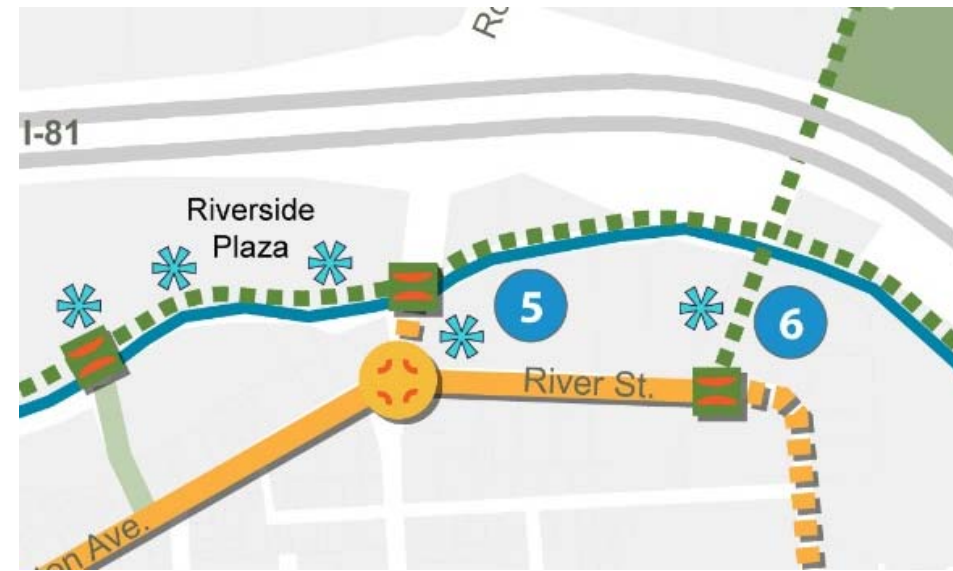




## 6. Greenway Green Infrastructure

### *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.







# Next Steps

- Refine Clinton Ave. strategies based on City and work group feedback.
- Develop preliminary design concepts for *three* additional strategies: off-street green infrastructure (parking lot), greenway trails and educational opportunities.
- Present full set of draft opportunities to refine and prioritize strategies, identify funding options and outline actions for implementation.
- Stakeholder engagement venues:
  - Expanded work group working session
  - City’s Environmental Advisory Board
  - Upper Susquehanna Watershed Coalition