



Onondaga Creek Revitalization Plan Draft Working Group Flip Chart Notes May 2, 2007 Design Charrette

City:

Note: Different Colors for different categories: Blue for Biology, Green for Hydrology, Yellow for.

- Daylighting former tributaries, sewers, storm drains, which run into creek
- Create Floodplain and maintain flood protection: channel modification, remove/row- compound channel- allows access in shallow wider waterway- naturalized with boulders and woody debris to create habitat
- Ted recommends compound channel rather than multiple channel because of the concern with low flow. Trout can swim in low flow.
- Discussion of Re???? Trees and Riparian Vegetation
- Recreational Fishing vs. Mosquito /Mercurio/Mercury Control ????
- Restore natural Springs
- Remove Bridges and create cul-de-sac: less through traffic for neighborhood, less cross sections, and less stream crossings, less need to construct stream channels, more feasible for multiple stream channels or convert bridges to pedestrian walkways to create more access
- Emmanuel Carter has a Botanical Garden Plan
- Compound channels are good for creating creek habitat
- Midland Facility/ large scale/stream channelization issues→ natural space vs. big hunk of concrete
- Re-naturalization of Urban Space
- Flood Plain Trees: Lower Elevation landscape near South Avenue
- Arboretum: Not a native Community /Community Education
- Native Fish Restoration & Native Plant Communities in All Places- only non-native plants in arboretum
 - Take Fences Down or Use Natural Materials
 - o City/Forest Service Project
 - Onondaga County WEP
- Add Fishing Access in Parks
- Bike and Pedestrian Trail System off the Creek with many access points (i.e. spinal cord)
- Motorcycle Noise: Near Dinosaur BBQ- Any bridges or "canyons" need more human improved conditions- open bright light, not to trap noise in canyon walkways
 - o Bridges in Hwy 690 area
 - West Street Reconfigured
 - o Infastructure changes in area to open natural space and hydrology
- Bridge/Culvert Modification Onondaga Blvd.
- Shade the Waterway/ selected vegetation in areas where you remove invasive species- shade trees

Action:

- Drop Structure at McDonald Rd near Glenwood → where's the water going
- Furnace Brook/Elmwood Park to Creek
- Check Day Delinquent Parcels/ Semi public Lands that are potentially available
- Zoning Process for protection of Rural Areas
- University Buying Land in West Street Area
- The Disconnect at end [of the Creek; Inner Harbor etc.] should be the Jewel

Mixed Segments Onondaga Nation Boundary to Ballentyne Avenue:

- Start with Hydrology and Build on everything else
- Stream Daylighting
- Floodplain Meachem Field
- Mix changes in Flood Plain with new Meanders
- Will new meanders be able to handle Water
- Daylight Kimber Brook
- Imperitive to look at the system wide watershed with recommendations
- Dorwin Springs
- Create Compound Channel (note the modified floodplain card)
- Create signs along Creek/Tributaries that note the Creek/Tributaries name (i.e. Onondaga Creek or Kimber Brook)

- Create a watershed symbol for Onondaga Creek and watershed
- Look at protecting/restoring/creating vernal pools
- Rand Tract: Restore to create upland/area biopreserve
- Andy Saunder's Created/Developed an Interpretive Trail
- Create trails on both sides of the creek
- Utilize different colors for different cards for future options
- Turn lights off at night on trail in order to discourage use (<u>maybe not a good idea</u>)
- Connect the trail system with adjacent public lands
- Note the trails drawn on the map segment
- Note additional notes on map symbols
- Remove fence and/or replace with natural fence (where needed or wanted) on the whole creek
- Create greenway or Biopreserve in Upland area (noted by large blue circles)
 - o This extends and combines with the Rand Tract. It is also known as the "Bird Sanctuary."
- Gain access to mountain bike trails along the Bird Sanctuary
- Canoe/Kayak Access
 - o Zen Center
 - o Dorwin Avenue
 - o Ballentyne Avenue
- Create Cultural site at Onondaga Castle
- Create City Overlook in Bird Sanctuary
- Preserve as a wild/recharge area: "Forever Wild"
- Three Concepts for the Mixed Segment:
 - o Preserve
 - o Re-Naturalize
 - Education

Rural:

Otisco to Lafayette

- Do nothing option in this section
- Investigations of hydrology conditions are needed in this area
- Check to see if Best Management Practices are being used
- Further information needed on landslides- geologic situation
- Bridge at Tully Farms Road Maintenance issue

Emerson Creek Corridor

- Work with Honeywell to get variances with DEC
- Buffer Zones: Improving Riparian where ever tributary goes through farmland, it should have the buffer restored
- Investigate future land sale
- Sign at the Headwaters at Route 80 "Now entering Onondaga Creek"
- Fishing Access: Increase
- Vesper to Main Stem Tully
- Channelized Section: Create meanders to slow the water down, although some reservations noted
- Rake out the Mill Pond??? Explore with land owner
- Explore possibilities of trails with landowners
- Explore fishing access on Honeywell Land

Headwaters to Vesper:

- Zoning/Planning Boards need to work with developers/landowners
- Possibility of creek buffer, multi owned
- Education of headwater homeowners fertilizers get them to creek

Watershed Recommendation: Overall (page 1)

- The OCRP project team recommends continuing the Onondaga Creek Working Group into an advisory/steering committee to implement creek revitalization. To move into this next phase, Working Group members will have to make a number of decisions, including:
- 1. Determine what kind of model is appropriate for the next phase of the Working Group.
- 2. Define functions of the group, including new members and structure.
- 3. Define funding mechanism or how to maintain sustainability of effort over the long-term.
- 4. Ascertain ways to gain government backing and support, see 4. E. Intermunicipal task force.

Watershed Recommendation 1) Water Quality A. 6. (page 2)

■ 6. Multiple governments have jurisdiction within the Onondaga Creek watershed. Forms of cooperative intermunicipal decision-making about sewer/stormwater management should be explored to make real, lasting improvements to water quality.

Watershed Recommendation 4) E. 1 & 2 (page 6)

- 1. Recommend development of a model for intermunicipal coordination and cooperation ... should employ holistic approach towards Onondaga Creek:
 - a. Capitalizing on synergies or minimizing conflicts between existing projects and conceptual revitalization plan
 - b. Capturing funding and education opportunities for municipalities...
 - c. Promoting municipal project cooperation/coordination
 - d. Evaluating and selecting useful models for municipalities ...
 for example, buffer laws and conservation easements.
- 2. Define, select and implement the intermunicipal model as one of the first tasks of the Working Group continuation. Role of intermunicipal entity should be clearly defined, whether predicated on voluntary compliance or having the power to wield 'carrots and sticks' to further creek revitalization.

Hudson River Watershed Alliance Steering Committee www.hudsonwatershed.org

2007	Agencies	Research/ Education Groups	Professional/ Regional Environmental Groups	Local/ Grassroots Environmental Groups	At-Large
Upper Hudson/ Mohawk Region	vacant	Hudson River Watch 2 year term	The Nature Conservancy, Eastern NY Chapter 3 year term	Onesquethaw- Coeymans Watershed Council 2 year term	Ramapo River Watershed Intermunicipal Council 2 year term
Mid Hudson	Dutchess County Water and Wastewater Authority 3 year term	Hudson Valley AgriBusiness Development Corp. 1 year term	Hudson River Sloop Clearwater 2 year term	Mid-Hudson Sierra Club 1 year term	Orange County Water Authority 3 year term
Lower Hudson	vacant	Garrison Institute 3 year term	The Highlands Coalition 1 year	Federated Conservationists of Westchester County 3 year term	Hydrogeologist, Chazen Companies 1 year term



Working Group progress:

- 1. Working Group developed revitalization plan drivers, or motivators, in January, 2007.
- 2. Working Group developed revitalization plan options, based on three headings: hydrology, biology and land use. Land use included options for recreation, open space, access and safety. Options were developed in February, March and April, 2007. Resource experts, from academia and government agencies, were invited to assist each month.
- 3. Keeping drivers and options in mind, Working Group completed a "design charrette" in May and June, 2007. Assisted again by resource experts, the Working Group placed ideas on large planning maps. OEI staff developed symbol cards to use on the maps; the symbols were inspired by Working Group options, community input and stream restoration practice.
- 4. Working Group refined their plan drivers in August 2007 to five: 1) Water quality; 2) Human health and safety; 3) Ecological Health and Habitat; 4) Connectivity Physical/Visual Access and Recreational Use; 5) Education (For driver #4, OCRP Project Team added "Recreational")

Next Steps

September 2007

- Working Group refines their drivers into goals.
- Working Group evaluates a sample of ongoing creek-related projects against their plan drivers; the Project Team completes the evaluation.
- PT groups Working Group's revitalization map ideas into projects; addresses incompatibilities between revitalization maps and checks projects against community/stakeholder input.

October 2007

- Working Group evaluates and revises Project Team's proposed projects and compatibility efforts.
- Working Group checks projects against their goals and prioritizes revitalization projects.

November/December 2007

- Project Team writes plan, based on Working Group's goals and priorities. January or February 2008
- Working Group reviews plan and recommends edits.
- Project Team edits plan and releases to Onondaga Lake Partnership.

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We Want Your Opinion! - Help us plan effective meetings with the public -

Starting this autumn, the *Onondaga Creek Conceptual Revitalization Plan* project team will hold meetings in the Onondaga Creek watershed. The purpose is to gather the public's goals and issues for the revitalization of Onondaga Creek.

The goals and issues gleaned from these meetings will be compiled into a report. The Working Group will use the report while developing the conceptual revitalization plan for Onondaga Creek. By incorporating public input, the conceptual revitalization plan will better reflect the wishes of the community for Onondaga Creek revitalization.

You, as an Onondaga Creek Working Group member, can help the project team by providing your valuable input below. Please give your opinion on the most effective meeting type and format. Additionally, do you know people or groups in your community who would be interested in attending a meeting? If so, please list them below.

Two types of meetings will be held:

- 1) *mini-forums* the mini-forums are small meetings held in specific areas, defined by reaches of Onondaga Creek. Residents will be invited to participate and share their goals and issues for Onondaga Creek revitalization in their area.
- 2) *stakeholder meetings* the stakeholder meetings are targeted to specific groups that have an interest in the revitalization of Onondaga Creek. For example, stakeholder groups might include business, community and environmental groups. Stakeholder groups will be invited to participate and share their goals and issues for Onondaga Creek revitalization.

Type of meeting:
Open meeting vs. focus group (a focus group is a smaller meeting conducted with a
facilitator in a question/answer format)

Meeting format:
Activities vs. presentations – what's a good balance for providing information, but
keeping people interested?
Suggestions for individuals and/or stakeholder groups that should be invited to attend
meetings:
Other comments or ideas about the meetings you would like to share:
Please bring to the November Working Group meeting.

Thank you for your help!

Onondaga Creek Working Group Wetlands Field Trip, Meeting #6 July 6th, 2005, 3:00pm – 6:00pm

<u>Meeting location</u>: Barry Park parking lot near intersection of Westcott Street and Meadowbrook Drive, Syracuse

1. Administrative Items:

- A. Minutes approval for June 1, 2005 meeting
- B. Schedule next Working Group Meeting: Wednesday August 3rd? Dunbar Center or SUNY ESF?
- C. Items for Onondaga Creek Works
- D. Upcoming events (listed below)

Date	Event	Contact Organization
Jul 16 9am - Noon	Pruning and Cleaning Kirk Park West, off South Avenue in preparation for Onondaga Creek Fest	Canopy, 446-5319
Jul 19 Noon	Lunch Time Stream Walk, Franklin Square Information: 424-9485 x 0	Cornell University Cooperative Extension (CUCE)
Jul 23 Noon - 6pm	Onondaga Creek Fest, Kirk Park West, off South Avenue – celebrating Onondaga Creek as a community resource - music, food, children's activities, and more.	Canopy Lee Gechas: 446-5319 leegech@dreamscape.com

2. Field Trip Schedule

Route/Stops	Time	Route/Parking for Bus	Estimated Time
	Spent		
Barry Park parking lot near intersection of Meadowbrook and Westcott St. (Across from Meadowbrook stormwater detention basin.)	30 -40 min	Barry Park parking lot near intersection of Meadowbrook and Westcott St. to Interstate 81 south. LaFayette Exit (Rt. 20) to north on Rt. 80. Left on Hogsback Road.	3:00pm – 3:40pm
Stop 1: South Onondaga Marsh, Save the County Land Trust property	30 min	Park along Hogsback Road	3:40pm – 4:10pm
South Onondaga Marsh to pond on Red Mill Road	5 min	West on Hogsback Road	4:10pm – 4:15pm
Stop 2: Pond on Red Mill Road	30 min	Park along Red Mill Road	4:15pm – 4:45pm
Return to Meadowbrook	30 min	Rt 80 to Rt. 20 to I-81 North	4:45pm – 5:15pm
Stop 3 : Meadowbrook stormwater detention basin	45 min	Park on Meadowbrook at base of Westcott Street	5:15pm – 6:00pm

C:\Meredith\Grants and Projects\FFY2003 CCWI Onondaga Creek Plan\Meetings\Working Group Meetings\Working Group Meeting_06JUL05\Wetland Field Trip Agenda.doc

The Onondaga Fishery:

With attention to Onondaga Creek

Revised August 10, 2005

JE Cope Savage

Onondaga Lake Cleanup Corp.

Managed natural resource before 1800

The ancient Onondaga fishery was a managed natural resource that long preceded the large immigrations to the county in the 1800s. Visitors over four hundred years ago noted that the area was a marvel of natural production. The county is still very productive, a major agricultural county in New York State, yet it is no longer a major fishery. Events of the past four hundred years can be traced in the story of the Onondaga regional fishery.

Abundance

In the 1600s the region's natural boundaries were not supplemented with the obviously marked jurisdictional boundaries familiar to immigrants, except for the stockades that soon went up around villages. Visitors observed food and fur-bearing animals in abundance, and felt free to take game as needed. They saw local inhabitants spearing or netting fish, and using fish-weirs made of stone. A large stone fish-weir from that era survived in the Seneca River west of Baldwinsville until the twentieth century.

Father LeMoyne observed in the 1650s, "Onondaga lake abounds with fish—with salmon, trout and other fish." His contemporary, Father Chaumonot, wrote, "the eel is so abundant there in the autumn that some take with a harpoon as many as a thousand in a single night."

A century later in 1753, the fishing spots along the rivers were recognized as permanent allocations to families or clans in which "each one has his own place," per the travelers Zeisberger and Frey, as quoted by Beauchamp. Long-term productivity continued, for as Vanderkemp reported in 1792, "One Oneyda Indian took with his spear forty-five salmon within an hour."

Species diversity

Vanderkemp (1792) burbled about a feast near the Seneca and Oneida Rivers, "I tasted within a short time a dozen different species, the one contending with the other for pre-eminence, the least of these

affording a palatable food. Salmon, pike, pickerel, cat fish, if well prepared, boiled or stewed, resembling the taste of the delicious Turbot, Otzwego bass, an Epicurean morsel, yellow perch, sun fish, tziob (chub), three species of trout, river lobster, turtle, sword fish, and a green colored fish of an exquisite taste, white fish, etc."

The species diversity included small territory species such as sun fish and cat fish, along with species that can use very large territories, even the open ocean, including facultative migratory species such as sturgeon, salmon and eel.

Context of the management practices

Native management of the fishery through a traditional division of fishing areas among families was well-scaled to meet the year-round food needs of communities typically composed of several thousand persons moving back and forth between winter and summer villages. The intensity of fishing in any one lake, pool or riffle does not seem to have been exhaustive for a particular species, given the reports of sustained diversity and abundance.

Major changes since 1800

After 1800, the regional fish conditions were altered by several human activities: canal development, deforestation, agricultural practices, expansion of the salt industry, diversification of the salt industry, and rapid growth of human population in a former swamp, which affected water supply, trash disposal, sewage systems, and flood control measures. The development of fish hatchery stocking in the late 1800s to meet the high demand for sport and commercial fishing further shifted fish population densities and also introduced exotic species such as rainbow trout from the Pacific Coast and brown trout from Europe.

Breaking migration patterns

The widest effect geographically may have come from the mill dams and canal system, as streams

across the region were blocked or re-routed, preventing fish from reaching their spawning grounds. Breaking the migration pattern for salmon in Onondaga Creek appears to have occurred as early as 1810.

After the Civil War, one resident reminisced, "In the spring of 1810, with two other boys, I was walking of a pleasant evening in the vicinity of the Onondaga creek, a mile and a half south of the site of the present city of Syracuse, then a tangled swamp, inhabited mainly by frogs, water-snakes and owls. Upon the creek stood Wood's mill, below which for several rods were rifts. Our attention and delight were excited by seeing bright lights moving, as we supposed, along the banks of the creek. On approaching, however, we discovered Onondaga Indians with pine knot torches and clubs, killing salmon, whose fins and backs were seen as they were ascending the creek in shallow water over the rifts. The Indians good naturedly lent us clubs and gave us the benefit of their torches, until each had captured a salmon, with which we departed for our homes in jubilant spirits. Most of the inhabitants of Syracuse find it hard to believe that salmon were ever taken south of the city. And yet, such is the fact, for which my friend, Philo D. Mickles, recently deceased, would have vouched, as he was one of my companions on that occasion."-1874, Thurlow Weed.

Slower water, warmer water

The slowing of water for canals and mill dams contributed to water conditions that are typically warmer and less oxygenated than fast water, this can be stressful or fatal for trout or salmon that require cold well-aerated water. Carp and suckers are among the fish which are more tolerant of warm conditions.

Sediment from deforestation and agricultural runoff

Salt industry's early practices and local agriculture added sediment. Clark (1849 vol. 2 p.35) noted that the lake shore initially was a spongy bog, but that in "clearing up of the hills in the neighborhood" around Onondaga Lake, "sand, gravel and other substances, have been washed down ...and become so solid, that loaded teams can now be driven along the beach." The "clearing up" was for wood to fire the salt industry's drying houses, as well as for a developing agriculture.

The salt industry's urgent need for firewood to dry the brine prompted the harvest of 30,000 cords of firewood a year in the early 1800s and later as much as 180,000 cords of firewood a year. The exhaustion of local supply and consequent need to transport firewood from greater distances was a major reason for the construction of the Oswego Canal (Whitford

1906), which included locks that partially blocked regional fish migration between Lake Ontario and the regional watershed. Subsequent modification of the Oswego River to become part of the Barge Canal may have further blocked fish movement.

Sediment from the mudboils

Mudboils near Otisco Valley Road have contributed salinity and sediment to Onondaga Creek for over a 100 years. Recent heavy pulses of material in the 1980s and 1990s turned the creek to 'chocolate' and further diminished fish habitat. Engineering measures to isolate the sediment from the creek have been largely successful, but salinity and some sediment continue to reach the creek.

Salinity

The watershed has typically included a mixture of salt, sulfur and fresh water springs, often in amazingly close proximity to each other. Fish with some tolerance to salinity, such as sturgeon, salmon and eel were once common in the watershed.

In 1909, however, trout fishing was not considered worthwhile in the east branch of Onondaga creek due to a high brine concentration from the Tully valley brine wells. At the same time, fresh water from the West Branch contributed enough fresh water to make trout fishing attractive in the downstream area between the junction of the two branches and Kirk Park.

In the late 1970s and early 1980s, recurrence of spills from the brine pipeline from Tully to Solvay, resulted in several fish kills.

Industrial waste and habitat loss

The salt industry diversified in the 1880s using the chlor-alkali Solvay process, and the industry waste material, including calcium chloride salts, was piled in the wetlands remaining along the Onondaga lake shore and along the creek. According to Beauchamp, [by 1908] "fine white fish, of excellent flavor, were formerly caught in Onondaga lake, but it is said they have left it now. They fed on small crustaceans in the lake weeds, which have been destroyed." Lake white fish spawn in shoals or in tributaries. Confirmation of white fish in Onondaga Creek is not available, but destruction of wetlands near the mouth of the creek is known.

In July 1901, refuse from the Windholz Vinegar Factory in Cortland Avenue overflowed into Onondaga Creek, stunning thousands of suckers. Over fifty boys and men waded into the creek to collect the half-dead fish to eat. No trout or perch were in the die-off; this was not surprising at the time

as the urban part of the creek was already known to be 'more or less contaminated' by human waste.

In 1979 and in 1984, breaks in the Allied brine pipe from Tully spilled into the creek. In October 1984, the DEC reported that a break near Dorwin Avenue killed 1,056 fish, including trout, chub and suckers, with 90% of the dead fish again being suckers.

(For a map of waste sites that may affect the creek, see Enviromapper.)

<u>Human and animal waste –nutrient loads and infectious organisms</u>

The city's dumps and sewers added excessive nutrients from the 1800s onward. In warm weather, Onondaga Creek in the city teemed with multiplying microorganisms that depleted available oxygen, for all but the bottom-feeding suckers.

In the 1890s the city of Syracuse considered putting its garbage directly into the lake. The Common Council preferred that solution to the stinking dumps in urban areas, such as near the Midland Avenue bridge over the creek. In 1893, a new city dump location was selected in the marsh near the mouth of the creek.

Over several years in the late 1800s and early 1900s, the city built sewers that piped raw sewage, storm runoff, and street flushing water to Onondaga Creek.

After 1894, the water piped from Skaneateles was added to the volume; it was used for multiple purposes, including street sprinkling and street washing, which were necessary to remove the waste from horses and oxen.

Other fishery spots in the area were not as heavily affected by biological waste. A sturgeon weighing sixty-seven pounds was taken from the Seneca River near Jack's Reef in 1895.

Fishing intensity

In the late 1800s fishing intensity prompted the development of state-run fish hatcheries initially to provide for the commercial fishery in Lake Ontario, and later for other anglers.

The Onondaga County Anglers Association privately employed a Game Protector to monitor Onondaga Creek to prevent illegal netting of fish, and their employee was successful in releasing a net full of fish in May 1901.

According to Beauchamp, [by 1908], "native brook trout, once abundant, has now but a small range, partly from too much fishing; quite as much from lack of proper food.... All our creeks and rivers once swarmed with salmon in their season..."

The Anglers Association of Onondaga's prize fish list in 1907 included bass, three kinds of trout, perch, pike and pickerel. The prize winners were determined by length then, but the statewide fishing records in 2004 are now kept by weight, so an experienced fisherman can make some guesses: a record lake trout in Onondaga County for 1907 was twenty and one quarter inches long, while the 'winning' brook trout was a mere nine inches long.

In March 1940, the State hatchery in Elbridge supplied the Tully Club with 1,250 brown trout for its section of Onondaga Creek. The Anglers Association bought brown trout for the section of Onondaga Creek between Cedarvale and South Onondaga. Hatchery brook trout were available at that time but were not obtained for stocking Onondaga Creek.

As of 2004, there was no statewide brook trout fishing record for the year, as no brookies met the minimum qualifying weight of four pounds. Efforts to re-establish brook trout through stocking is ongoing.

Stocking of Onondaga Creek by the NYS-DEC with heavily fished species now includes three kinds of trout: brook, brown and rainbow, with ongoing experimentation by other scientists on salmon and sturgeon re-establishment.

Flood control

Rapid runoff in lower Onondaga Creek was sometimes disastrous in the 1800s and 1900s. The combination of a deforested watershed, population density on part of a flood plain, and seasonal weather patterns that at times included heavy downpours, or a spring rain that washes snow melt into streams, contributed to floods. In unpopulated areas this was a source of fertility as sediments dropped out onto a flood plain. However, as the City of Syracuse expanded in the 1800s and 1900s, the areas affected by flooding at times included the business section of the city as well as residential areas in Onondaga Valley.

Under pressure to deal with the problem of flooding as well as to speed sewage flushing, the engineering solution developed by the Intercepting Sewer Board (1927) incorporated a dam near the junction of the East and West branches and channelization of the creek downstream of the Onondaga Nation.

Channeled sections of the creek typically provide less features of fish habitat. The creek loses the placesof slow water for fish to hide and feed, and reduces the surfaces on which food organisms (particularly benthic macroinvertebrates) can colonize.

Commentary

The notion of North America as having once been a vacant and virgin wilderness, ripe for the picking, has had to face major criticism. As Oren Lyons and others have explained in "Exiled in the Land of the Free," the continent was fully occupied by many species that were not only present, but present and abundant; natives had practiced resource management that was conservative and cooperative with the forces of nature. For immigrants, abundant salmon and other resources were a pleasant surprise, yet the immigrants rarely identified what policies helped that to happen. In hindsight we can now see that human activity for many previous generations had conserved the regional fishery which included Onondaga Creek.

Despite barriers, water warming, sediment, toxins, sewage, and over-fishing, the wider region continues to support a "cool water" fishery that includes bass, carp, walleye, and channel catfish that tolerate warmer water. The region lost much of the clear and well-oxygenated water that runs over riffles and chills in deep pools, water that once supported "cold water" fish such as the salmon and brook trout that were so enthusiastically described in the historical accounts.

Onondaga Creek has been further exposed to shocks of brine and sediment, and its list of fish species is limited at this time (see separate page).

Like any fishable water in New York, the creek is under a minimum state health advisory for consumption of fish, the most permissible volume being no more than one-half pound of fish per week. The creek downstream of the Dorwin drop structure may have fish access from Onondaga Lake, and thus falls under the following more restrictive health advisory for fish from Onondaga Lake.

- Walleye, eat none (mercury)
- Carp, channel catfish and white perch, eat no more than one meal a month (dioxins, PCBs, mercury)
- all other species eat no more than one meal a month (mercury)
- women of childbearing age and children age
 15 or younger should eat no fish whatsoever.

For further reading about the fish natural history, local history, or native perspectives on resource management:

Beauchamp, William M. (1908) Past and Present of Onondaga County, New York. New York: S.J. Clark Publishing Co. p 42-50.

Clark, Joshua H. V. (1849) Onondaga: or Reminiscences of Earlier & Later Times. Stoddard and Babcock. Syracuse, NY.

Lyons, Oren et al. (ed.) (1992) Exiled in the Land of the Free. Clear Light Publishers.

Patterson, Neil. (Undated) "The Fish." p.44-50, in Words That Come Before All Else. Haudenosaunee Environmental Task Force.

Tango, Peter J. and Neil H. Ringler. (1996) "The Role of Pollution and External Refugia in Structuring the Onondaga Lake Fish Community." Lake and Reservoir Management, 12(1):81-90.

Webster, Dwight A. (1982) "Early History of Salmon in New York." New York Fishery and Game Journal, 29 (1): 26-44.

Whitford, N. E. (1906). History of the Canal System of the State of New York together with Brief Histories of the Canals of the United States and Canada. Albany, Brandow Printing Company.

For access to newspaper clippings:

http://poststandard.newspaperarchive.com/DesktopDefault.aspx

The Fish in Onondaga Creek Today

Barriers to Upstream Movement

- 1. Near Spencer Street, a cover to a sewer line passing under the creek acts as a ledge, forming a small waterfall. Under most conditions, the ledge is enough of a barrier to prevent most fish from moving upstream into the creek from Onondaga Lake. The ledge is low enough that a mature salmon could leap it. The Onondaga Lake water level occasionally rises higher than the barrier; during those brief times, fish can move freely back and forth between the lake and the creek.
- 2. Near Dorwin Avenue, a drop structure installed as a flood control measure prevents all fish from migrating further upstream, as it does not have a fish ladder, and is too long a stretch for a salmon leap. One-way downstream movement of fish is possible at both the Dorwin and Spencer barriers.
- 3. The Onondaga dam is designed to permit continuous water movement under non-flood conditions, and is not identified as an obstacle to fish movement.

Fish species: (Danehy 1994) Locale

Blacknose dace Rhinichthys atratulus near headwaters, in tributaries
Longnose dace Rhinichthys cataractae above mudboils, and at Hemlock

Creek chub <u>Semotilus atromaculatus</u> widely distributed

White sucker <u>Catostomus commersoni</u> dense at downstream main stem

Slimy sculpin <u>Cottus cognatus</u> various locations

Brown trout Salmo trutta

Fish stocking (2004) for Onondaga Creek and its tributaries Number – length

Brook trout <u>Salvelinus fontinalis</u> native species

Furnace Brook 200 - 9 in., 200 - 10 in.

Cold Brook 50 - 11 in. Webster's Pond 250 - 9.5 in.

Brown trout Salmo trutta European sp. imported in 1880s, tolerant of warmer water than native trout

Rainbow trout Oncorhynchus mykiss Pacific Northwest sp. brought to New York in 1800s

tolerant of warmer water than native trout

Webster's Pond 490 - 10.5 in., 10 - 14 in.

In 2004, all fish stocked (as listed) were raised at Carpenter's Brook Fish Hatchery, operated by Onondaga County. The stream portions are stocked directly by the county, and Webster's Pond is privately stocked with fish purchased from Carpenter's Brook by the Angler's Association of Onondaga. The NYS Department of Environmental Conservation website includes a summary list of fish stocking [does not distinguish between state and county hatcheries or public and private stocking].

http://www.dec.state.ny.us/website/dfwmr/fish/fishspecs/trouttxt.html

Species re-establishment in Onondaga Creek; current research S. Coghlan and N. Ringler (2005) salmon; K. Limburg (2005) sturgeon

August 10, 2005 revised Fish in Onondaga Creek/Onondaga Lake Cleanup Corp.



HYDROLOGICAL OPTIONS -

Dam Modification:



Redesign or modification of existing dam

BEST MANAGEMENT PLANS

Rural Best Management Plan:



Strategies for preventing/reducing non-point source pollution in runoff, including created wetlands and vegetated filter strips, barnyard run-off control systems (prevents waste from becoming runoff), roof water management systems, manure diversions (similar to barnyard runoff control), no-till planting (tractors or farm equipment that plants crops without tilling (grinding and aerating) the soil.

Urban Best Management Plan:



Strategies for managing stormwater and CSOs, including 'green' practices like rain gardens, urban tree plantings, green roofs (plants on roofs that soak up rainwater), rain barrels, vegetated swales, pocket wetlands, permeable pavements (pavement that allows infiltration of water). All decrease the amount of pollution added to waterways and reduces strain on storm- and wastewater infrastructure.

STREAM CHANNEL MODIFICATION

Bridge/Culvert Modification:



Modify or replace a culvert that acts as a barrier to fish migration or is undersized, causing water to backup during floods.

Reconnect 'Lost' Tributaries:



Reconnecting a tributary that has been re-routed to stormwater or sewer pipes back to main stream channel.

Stream Daylighting:



A stream or part of a stream that currently is underground is deliberately uncovered and reestablished in its old channel or in a new channel threaded between existing structures.

Create Floodplain and Dechannelize:



The practice of returning a steam channel to as natural a condition as possible, given current constraints, while creating a stable, non-erosive channel.

Recreate Multiple Stream Channels:



Change a single channel into compound channels, to even stream flow across the length of stream.

Create Stream Meander:



Create curves in the stream. This is a change from a channelized system to a more natural system.

FLOODPLAIN REALIGNMENT

Flood/Stormwater Retention Basin:



Basin that retains stormwater for infiltration, pollution reduction and downstream water quality improvements, somewhat like Meadowbrook Detention Basin.

Wetland Re-creation:



Reconnection of wetland drainage systems to other wetlands and creek floodplain, increasing vegetation diversity and viability, and functioning to increase flood storage and erosion control.

-BIOLOGICAL OPTIONS-

Plant Riparian Shade Trees:



Improves and protects water quality and wildlife habitat by moderating stream temperature, stabilizing streambanks, adding organic matter to aquatic systems, filtering pollutants and providing flood storage.

Plant Native Species (Trees Shrubs...)



Native species are well adapted to the climate and are insect and disease resistant, leading to a self-sustaining ecosystem, preferred as habitat and food sources by native wildlife.

Restore Native Floodplain Species:



Plants, mammals, fish, birds

Trout/Eel/Salmon Habitat Restoration:



p m

Create aquatic habitat conditions that relate to biological requirements and preferences of these particular organisms.

Create/Restore Wetland:



Either emergent wetland with cattails and grassy/shrubby vegetation, or forested wetland with tree species adapted to wetland soil types, for example white cedar,

Create/Restore Upland Area:



Higher areas upslope of streams, wetlands and riparian zones.

Manage/Restore Upland

Alternatives to Hard Surfaces:



Shrubs, Rocks and Gravel, Plants, Trees.

Remove/Control/Monitor Invasive Vegetation:



Control or remove invasive vegetation.

-RECREATIONAL OPTIONS

Safety Measures:

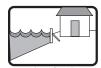


Can include high water warning lights, signage, fencing.

Improve Lighting:



Flood Proof Buildings:



Flood-proofing individual structures with barriers, door dams and other measures.

1 1000-F1001 Buildings

Fishing Access Point:



Create public fishing access.

Pedestrian Bridge:



Bridge restricted to motor vehicles, intended for pedestrian/bike use.

Whitewater Park:



Intended for kayaking/canoe access, can include construction of stream features that enhance whitewater recreation.

Whitewater Point

Signage:



Can include educational kiosks, nature trail, and directional types of

Removal of Chain Linked Fence:



Removal of Overgrowth Above/Around Creek:



Increase access to creek by removing excess invasive vegetation.

Natural Fence/Barrier:



Shrubs, trees or vegetation next to the creek, as a barrier. Similar to a hedgerow that people put on their front lawns.

Kayaking/Canoe/Boating Access Point:



LAND MANAGEMENT TYPES

Bio Preserve:



Natural vegetation, few social encounters, herd paths/trails, designed to preserve native plant and animal communities.

Scenic Use Area:



Natural vegetation, some social encounters, herd paths/trails, some visitor facilities, designed for outdoor recreation.

Multiple Use Park:



Offer open space and recreational opportunities, includes visitor facilities and site improvements, altered from natural environment, Many social encounters (ex. Onondaga Lake County Park)

Urban Creek Preserve:



Similar to a Bio Preserve but set in an urban environment. Undeveloped greenspace with minor improvements, facilities. It may be used to connect other greenspace and corridors.

Cultural/Historic Site:



Buildings, sites, land of cultural or historical importance, open to visitation

Urban Ecopark:



A partnership of the public, private, and non-profit sectors. It exemplifies sustainable development: waste products from one industry become raw materials for another. This incorporates ideas like reduce, reuse recycle into an intensive facility/industrial area, with opportunities for parkland, systems that filter and clean water, and collect precipitation. People can live or work in this area. Essentially it a large-scale system that works to provide greenspace, eliminate waste, reduce pollution, and create jobs.

LAND AQUISITION

Private land Easement:



Land Easement

Includes conservation easements. a legal agreement between a landowner and an organization or government that prevents development or preserves scenic, natural values of the land.

Creation of Public Park Land:



Land purchased by a municipality or organization, managed and kept in a natural state, accessible to the public.

TRAILS

Paved or Gravel Foot/Bike Path:



Natural Trail:



A natural looking trail with small interpretive/educational signs.

Onondaga Creek Working Group Stream Ecology Field Trip, September 7th, 2005, 3:00pm – 6:00pm

Meeting location: Elmwood Park gravel parking lot off of Glenwood Avenue

1. Administrative Items:

- A. Minutes approval for August 3, 2005 meeting
- B. Schedule next Working Group Meeting: Wednesday October 5?

 Meeting Format: Landscape Design/Public Access Field Trip (see homework)
- C. Items for Onondaga Creek Works
- D. Upcoming events (listed below)

Upcoming Events List

Date	Event	Contact Organization
Sep 10 and Sep 17 8:30am – Lunch Time	4 th Annual Onondaga Creek Cleanup Volunteer for either land or boat crew. Pizza Party to follow. Registration is required – call 424-9485, ext 0.	Cornell University Cooperative Extension (CUCE)

2. Field Trip Schedule

Route/Stops	Time	Route/Parking for Bus	Estimated Time
	Spent		
Stop 1 and meeting location:	75 min	Access the gravel parking lot via the	3:00pm – 4:15pm
Elmwood Park gravel parking		lower entrance to Elmwood Park, off	
lot		Glenwood Avenue, between Clyde	
		and Craddock Streets.	
Elmwood Park to the Onondaga	15 min	Glenwood Avenue to south on Valley	4:15 – 4:30pm
Nation School		Drive/Route 80. Left on Gibson	
		Road. Left on 11A to school parking	
		lot.	
Stop 2: Onondaga Creek banks	75 min	Park at the Onondaga Nation School	4:30 – 5:45pm
behind the Onondaga Nation			
School			
Onondaga Nation School to	15 min	Right on 11A to Gibson Road to right	5:45 – 6:00pm
Elmwood Park		on Rt. 80 (Valley Drive). Valley	
		Drive to left on Glenwood Avenue.	

OPTIONAL Stop: Onondaga	30 min	Park at the Zen Center	(depending on
Creek banks by the Zen Center			time available)

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Draft Goals for the Onondaga Creek Revitalization Plan -- REVISED

Introduction: The goals are organized under the drivers refined at the August 2007 Working Group meeting. The goals are inspired directly by, or verbatim from, the options developed at the February, March and April 2007 Working Group meetings.

1) Water quality

- Achieve Class B standard throughout watershed (fishable, swimmable*, plus fish propagation
 and survival). *Targeted swimmability should be achieved, where feasible. Not all stretches of
 creek need to be swimmable.
 - o Achieve water quality that supports diverse fish and wildlife.
 - o Achieve water quality that supports contact recreation.
- Water should be clear and attractive, free of garbage.

2) Human health and safety

- Achieve Class B standard so that human contact with water is safe (see water quality goal).
 - o Fish caught in Onondaga Creek should be consumable (or "safe to eat"?).
 - Avoid adding pollutants to creek by using innovative runoff and stormwater management. Examples are: stormwater filtration (rain gardens) and storage (rain barrels/tanks), LEED¹ standards in building design.
- Minimize potential for drowning, damaging floods, and liability. To achieve this goal, the following objectives are proposed:
 - o Create floodplain in City of Syracuse and Nedrow
 - o Slow stream velocity
 - Provide re-naturalization of shoreline and wetland areas (see ecological health and habitat goals)
 - All of the above are intended to create recreation opportunities (see access, recreation and use goals)
- In the City, make a new policy for Onondaga Creek fence that balances the need for safety and access. Objectives:
 - o Use natural barriers of native plant species
 - o Establish dialog with affected communities
 - o Work with municipal land managers to maintain both new and old fencing

3) Ecological health and habitat

- System-wide, increase native diversity of riparian vegetation canopy to increase wildlife and bird diversity.
- System-wide, restore cold water fish habitat, at a minimum, no alterations to creek corridor should degrade habitat further or impede either down- or up-stream passage of cold water species. Objectives:
 - o Eel restoration is specific objective
 - Set sub-goals for stretches where cold water fish habitat restoration is most and least plausible

 1 The U.S. Green Building Council's website defines their Leadership in Energy and Environmental Design (LEED) Green Building Rating System as "the nationally accepted benchmark for the design, construction, and operation of high performance green buildings" (usgbc.org/LEED). Onondaga Environmental Institute 1 of 2 September 5, 2007 $\frac{1}{2} = \frac{1}{2} = \frac{1}$

Comment [MP1]: Sam noted at the WG meeting that the state already considers OC fish to be consumable, the recommendation is for infrequent consumption of small portions. Should we qualify "consumable"?

- Increase wetland viability and wetland vegetation diversity, restoration by reconnecting drainage systems for wetland areas to other wetlands and creek
- Use native species in restoration projects

4) Access, Recreation and Use

- Throughout the watershed, establish a system of trails and linkages that serve to connect rural and urban neighborhoods (the concept of the creek as a "spine"). Objectives:
 - o Use unified, standardized signage for directing people to destinations
 - o In the City, establish bike/walkway
 - Reclaim and daylight tributaries for to enhance connectivity (see ecological health and habitat goals)
- Add to, maintain and protect open spaces, near Onondaga Creek and its tributaries
 - Tailor open space format to benefit surrounding communities, from preservation of scenic and natural areas to developing urban ecoparks
 - o Incorporate creative multi-use options in recreation/access planning
 - Think broadly and take advantage of existing spatial opportunities, for example, tailor ecopark themes to specific areas
- Make creek access a priority in land use decisions, both for urban and rural land. Objectives:
 - Incorporate access for boating, fishing and wading/swimming, picnicking and benches, depending on area
 - Develop a process to achieve creek access from private land that is acceptable to land owners
 - o Create appropriate creek-driven development
- Establish land management practices and coordinate municipal recreation/access projects to support a naturalized, attractive creek. Objectives:
 - o Identify appropriate uses and enforce against illegal activity
 - In urban and rural areas, use native species in riparian zones, instead of mowed grass, crops (see ecological health and habitat goals)
 - o Practice surface runoff mitigation in urban areas (see human health and safety goals)
 - Plan to separate paved trail from directly beside stream, increase areas of floodplain forest, riparian vegetation in between trails and creek
 - o Use materials other than concrete or concrete blocks in stream channel
- Throughout watershed, governments adopt a new commitment to Onondaga Creek revitalization
 - o Local governments should take steps to recognize creek as a critical area
 - o Use tools available to municipalities to prioritize creek and tributary protection

5) Education

- Provide diverse education experiences and opportunities for multiple audiences
 - o Via signage, including marking watershed boundaries
 - Via outdoor education centers
 - o Via strengthening existing community facilities for watershed education
 - Via interpretive trails
 - o Via gardens with diverse vegetative types
 - Via community creek restoration projects and clean-ups
 - o Via watershed-specific curricula materials

Comment [MP2]: Knowlton recommended mentioning tributaries here

Comment [MP3]: I am struggling with the phrasing here.

Specific fishing advice for Onondaga Creek:

In Onondaga Creek and tributaries south of Dorwin Avenue (the Syracuse southern city line), the general advisory for eating fish applies:

"Eat no more than one meal (one-half pound) per week of fish from the state's freshwaters."

For Onondaga Creek north of Dorwin Avenue, in the city of Syracuse, to the outlet at Onondaga Lake, adhere to the advisory that applies to Onondaga Lake:

"Observe the following restrictions on eating fish from these waters and their tributaries to the first barrier impassable by fish."

"Women of childbearing age, infants and children under the age of 15 should not eat any fish species from waters listed below" (listing includes Onondaga Lake, see reverse side):

Species	Recommendation	Chemical(s) of Concern
Walleye	Eat None	Mercury
Carp, Channel Catfish, and White Perch	Eat no more than one meal per month	Dioxin, PCBs, Mercury
All other species	Eat no more than one meal per month	Mercury

Why are there two different recommendations for Onondaga Creek?

There is an impassable fish barrier at Dorwin Avenue¹. Fish can go downstream, but can't swim upstream from the city beyond Dorwin Avenue. Fish living in Onondaga Creek north of Dorwin Avenue may visit the lake. Therefore, the same restrictions that apply to Onondaga Lake, apply to Onondaga Creek north of Dorwin Avenue.

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¹ Per telephone communication from Dave Lemmon, NYS Department of Environmental Conservation, Region 7 Fisheries Division in Cortland, NY, to Meredith Perreault on May 25, 2005.

Sorting Public Input into Categories/Themes GOALS/DREAMS from first four forums

Categories developed at Onondaga Creek Working Group meeting, July 12, 2006 (Highlighted codes are listed under more than one category)

1. Environmental Issues

Codes:
Arboretum

Bird watching area

Clean creek

Clean creek – improves lake

Clean water

Coexistence/involvement of human and natural

environment Ecosystem health

Environmental health example for city and region

Farm runoff – none Fish - edible Fish – local market

Fish – reestablish extirpated/cold water fishery

restoration/restore salmon, whitefish Fish and aquatic wildlife - teeming Fisheries – fix brine leaching

Fisheries - habitat Fisheries - reestablish

Flowers Forested

Give room to spread out

Green areas Greenway

Know water quality before vision is made

Litter free

Logiams and deadfalls – fewer

Meanders – allowed with adequate precautions

Meanders – not everywhere

Meanders – restore from headwaters to downtown

Midland – no periodic flows

Monitoring

Monitoring – volunteer Mudboils issues

Native species – fish, plants and fauna

Native habitat

Native plants to replace others

Natural creek

Natural flow regime Naturalized creek Naturalized habitat

Nature area Nature trail

Pollution - eliminate Pollution - prevention Reintroduce species Relationship to nature

Re-naturalized

Restoration – length of creek

Restoration – long term and short term efforts

Restoration – meanders

Restoration – habitat, native flora, fish and fauna

Restore – to healthy space Restore ecological function Restore water quality Restored – clean and safe

Restored waterway with flood control

Riparian – protected Riparian buffer zone Riparian corridor Riparian habitat Sediments issues Smell – none

Trees

Trees - that flower

Trout – naturally reproducing in headwaters

Watershed management Wetland development

Wetlands

Wetlands – urban/ near Kirk Park

Wildlife – protected Wildlife – viewing Wildlife habitat in city

2. Recreation/Culture/Community Interaction

Codes:

Access – for canoe/kayak Access – free of charge forever

Access – public

Access – redesign West street

Access – safe Access – wide Accessible corridor

Arboretum

Banks – get rid of steep banks

Banks – fewer eroding

Canoe

Children at creekside Communities – link Community garden Community involvement

Disabled access, including for fishing

Education - environmental

Education – for inner city youth/city schools

Educational resource

Establish civic and government support

Events

Families – place for them to play

Ferry or tourboat Festivals – annual

Fishing areas Fun place to be

Government leaders – change consciousness

Grassroots base of support

Ice cream shop

Kayak – deepen at Dorwin Kayak - whitewater park Kayak - where feasible

Launch – boat, canoe, on Southside of city MOST – use for educational displays

Motor vehicles - none

Multi-use

Multi-use – downtown, from Armory to Lake Natural downtown lunchhour walking place, not

concrete

Needs public interest Open air library

Paddle

Participation by residents

Path - Bike

Path – cleaned and maintained by local government

Path – connected/continuous Path – length of creek

Path - cross country Path - flowered

Path – from downtown to Onondaga Lake Park

Path - hike Path - jog

Path - nature appreciation Path - non-motorized

Path – quiet

Path – shops, cafes, restaurants in urban parts

Path - walk

Path – with banners

Path – with natural areas outside of city

Path – with security Path – year-round Path –rollerblade/skate

Paths – separate walk and bike

Picnic area Play place

Quiet place for students Rental – bike, boat, canoe

School activities/projects on creek

Skate on the creek Snack places Tourist attraction Wine and snack stops

Youth skills

3. Infrastructure H

Codes:
Benches
Bridges

Buildings – remove those over creek

Channels – remove CSO's – eliminate Fences – removal Fences – where needed Fences – with gates

Fences - not removed unless protective measure

taken

Historic structures – keep

Infrastructure - existing has to coexist with design

Infrastructure - revitalize streets and curbs

Lights

Lights – at Dorwin Ave
Midland – no periodic flows
MOST – connect RTF
Real time water level gauges
Sewage - No sewer overflows
Stone walls – removed

Stormwater management

Unlined

4. Health and Safety

Codes:

Contaminated sediments – remove

Environmental health example for city and region

Flood control – natural through wetlands Flooding – allowed in adjacent region

Flooding – protect against Health – improve

Healthy

Midland – no periodic flows Motor vehicles – none Police presence

Pollution - eliminate Pollution - prevention

Safe

Safe – youth jobs Safe - access Safe edge conditions Safe – for children Safety - Robbers Slow water down

Trespassing

5. Development

Codes:

Americorps involvement in restoration work

Asset – economic

Asset – for city, downtown, community

Business district – vibrant City – catalyst for revitalization City – creek as centerpiece

City – creek as ecological and civic corridor

Commerce

Commercial/residential – some, where appropriate

Concession stands
Connected to downtown
Connected to neighborhoods
Connection to restored canal section

Connective corridor from Nation to lake

Designed wisely Economic development Employment for Southside Housing values - improve

Multi-use

Multi-use – downtown, from Armory to Lake

Neighborhood development Neighborhood renewal catalyst

Park development Park facilities

Preserve character of different sections

Property lines established

Regional park

Residential – improvements in SW of city

Restaurants

Revitalize downtown and residential neighborhoods

Un-altered areas should remain so Undeveloped areas – should be present

Useable

Useable – immediately

Varied land use

6. Miscellaneous

Codes:

Attractive

Beautify

Beauty - maintain/protect natural, scenic beauty

Cherish as treasure Democratic space

Diversity – human and land use

Embrace diamond in the rough

Enrich surrounding neighborhoods

Feel good about water

Healing to city

Local resource

Neighborhoods working together

Noise - none

Place – where people want to be near

Plan – harmonize with Onondaga Nation values

Property lines established

Return to people as vital natural resource

Sense of place

Spiritual renewal

Unifier of communities

Urban sites rediscovered as important sources of creek water

View with pride and respect

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Wetlands on the West Branch of Onondaga Creek - "SON 11"

What on earth is "SON 11"?

SON 11 is the wetland identification code assigned to the wetland the Working Group will visit on the West Branch of Onondaga Creek. The New York State Department of Environmental Conservation (DEC) is required to map wetlands protected by the Freshwater Wetlands Act. See the reverse side of this page for a **map** of SON 11's designation outline. The Working Group will view SON 11 from Route 80 and Red Mill Road. The US Geological Survey quadrangles serve as the base maps for regulated wetlands. SON 11 is represented on the South Onondaga quadrangle.

A Description of SON 11 from Alexander and Rhodes, 1980¹

"Physical SON 11 occupies the long, wide valley of the West Branch of Onondaga Creek paralleling Cedarvale Road... SON 11 receives the accumulative drainage from many wetlands along the valley and the surrounding hills. It becomes an important part of the Onondaga Creek drainage system. SON 11 is divided into four parts by a series of north-south roads. From west to east they are: Red Mill Road, New York Route 80 and Hitchings Road.

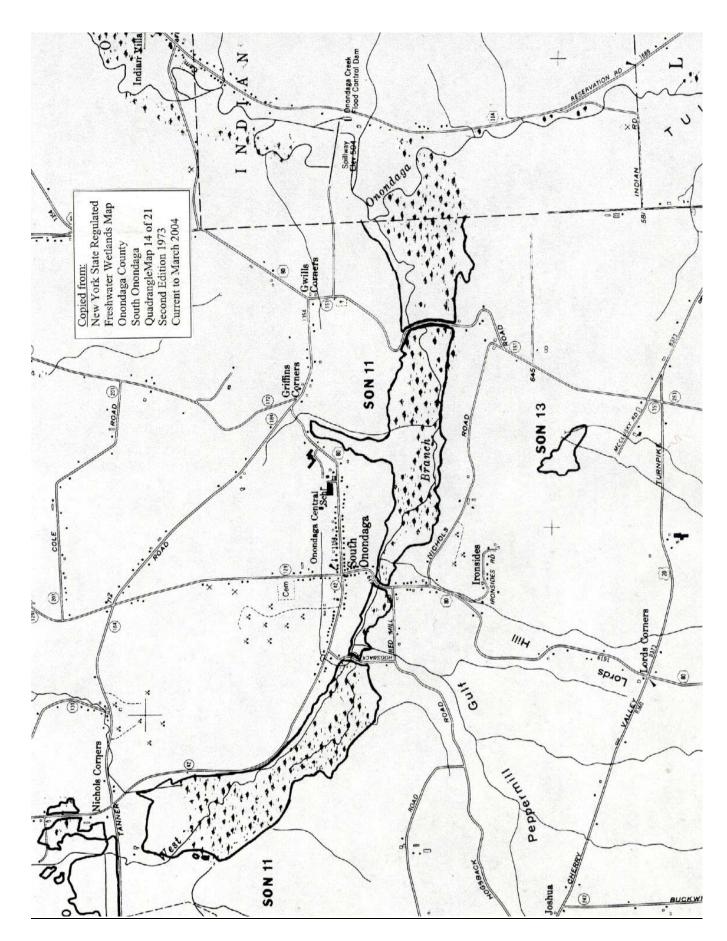
<u>Biological</u> SON 11 is a large, highly diverse wetland complex. The area west of Red Mill Road consists primarily of large areas dominated by deciduous trees and emergents. Smaller parts of this wetland contain open water, deciduous shrubs, dead trees and wet meadow vegetation mixed with trees and emergents. The small wetland section to the east of Red Mill Road is primarily wooded (deciduous trees and shrubs) although a small stand of emergents is also present. The two wetlands east of New York Route 80 are similar to the western section with the addition of coniferous trees (Northern white cedar) as another dominant habitat type.

The upland surrounding SON 11 is as variable as the wetland habitats. Mature forest and successional vegetation (herbaceous and woody) are located along much of the northern border of SON 11. Much of this perimeter is located on steep-sided slopes. The western end is located adjacent to a golf course, a cultivated field and some successional areas. The southern and eastern boundaries reflect the northern border in many ways. Mature woods, successional fields, conifer plantations, and some residences line these borders, the latter at road crossings.

<u>Cultural</u> SON 11 and its associated upland areas form a diverse area that has aesthetic, biological and hydrologic value to residents and passers-by alike. It is primarily a natural area that serves as a refuge for wildlife, an undeveloped retention basin for flood waters and a source of visual diversity..."

Onondaga Lake Cleanup Corp. SON 11 Fact Page

¹ Rhodes, Charles A. and Maurice M. Alexander. (1980). *Onondaga County Wetlands Inventory*, 1976-1978. Syracuse: Onondaga County Environmental Management Council, Volume 3: *Southern Towns*.



ONONDAGA CREEK REVITALIZATION MEETING TWO

- Introductions of new members
- Brainstorming Exercise
- Bill Kappel USGS "up the creek"
- Ted Endreny ESF "down the creek"
- Future schedule and definitions

ONONDAGA CREEK REVITALIZATION FUTURE SCHEDULE

- Working Group Meetings (5-7 each block)
 - Block 1: getting acquainted w/Onondaga Creek
 - Block 2: review of technical work products
 - Block 3: creek revitalization planning
 - Final product: Creek Revitalization Conceptual
 Plan

Major Drivers for Onondaga Creek Revitalization Developed at Working Group Meeting, January 3, 2007

Water Quality: Water quality standards/parameters determine stream health which drives allowable uses

- Means different things in different parts of stream
- Cumulative aspect
- Stream classification 'pushing up' quality looking at targets
- Public perception worse than it really is?
- What is relation to original/historical baseline; segment-to-segment
- Some things can be improved, but do we also look at things that are less healthy (discharging sewer plants) look at in targets
- Can distribute goods and bads
- Have distinct segments in creek

Human Health and Safety: Water quality affects human health indicators/standards which drives allowed uses as well as allowed risk and liability

- Ability to be in contact with water vs. risk
- How do other places handle risk and liability?
- Towns are afraid of liability
- Safety as far as recreational users and residents
- Improvements to human health

Ecological Health and Habitat Quality: Biological revitalization via ecological management for 1) historical species habitat restoration, e.g., salmon restoration or 2) targeted species/habitat creation, e.g., creek shade creation for cold water fisheries.

- Bank and habitat restoration where possible
- Knowing what historical condition/baseline were; but we do know what species were supported
- Cumulative effects
- What do we plan for change? Projecting forward some sections may need more help
- Shade for fish plan for tree height
- Creek transition through dam problem created. Can we make the Army Corps come back to reevaluate it?
- Managing Onondaga Creek to have greater populations of certain species; instead of what was here; looking globally what can we do to help all areas?
- Selected purchase of land
- Monitoring
- Invasive species

Politics and Community Involvement: Revitalization goals depend on decision making and economic development to create economic and social benefits to neighborhoods plus equity (major concern), and involvement activities and design elements cause 1) community increasing involvement and 2) change in usage patterns

- To bring money in
- Different governing body of Onondaga Nation
- Importance of balancing economics and revitalization realizing that revitalization brings economic benefits
- Signage at Nation think of creek holistically healthy revitalization from one end to the other
- Neighborhood goals
- Gentrification can happen affecting property values and taxes is this good or bad? How can it be managed and equitably planned? Managed through loans and homestead rules; can change the character dramatically old houses torn down value of old housing stock
- Knowing what's happening where the chance to influence what's coming up for easements, access

- What kinds of community involvement?
- Digital, interactive web-based involvement with web cams and information
- Adopt-a-creek
- Activities along the waterway for example, teaching children to recognize bird calls; moving display would help here help foster appreciation for the water
- Signage for basic awareness of creek, for example at tributaries, and connection to watershed to illustrate watershed boundaries
- Logo identifier of creek
- Fishing spots, making accessible (however, keep contamination in mind, they are deadly); fish for practice, fish from bridges fishing close to home
- Connect to creek schools lots of schools nearby
- Note similarity to Adirondacks altitude climbs a lot to Onondaga Creek headwaters
- Inventory of community groups along creek
- Sustainable involvement short-term projects plus long-term projects

Economics: Revitalization can yield direct and indirect economic benefits, property value increase and reinvestment

- To have economic benefits
- Increase property values and investment

Quality of Life: Revitalization should lead to increase in 1) community safety and security; and 2) community information sharing and knowledge

- Safety and security
- Access, plus fishing access for public
- Continuity are we looking at multiple styles in sections? Neighborhood nuances should be there make it personal, aid the perception; can help "buy-in" and ownership
- Interpretive educational material balance identify creek; identify neighborhood
- Knowing what's happening where-locations of fishing, ice cream identify with signage on trails by creek
- What about quality of life for other creatures? Has to be balanced
- Interpretive center covers whole valley, displays for school children, seniors multiple centers?
- Choose sites wisely; know what's going on in area before making decisions
- Moving displays for each community to share knowledge, good for everyone to be knowledgeable
- Plantings, planning

Physical/Visual Access and Use: Increase in physical/visual creek access leads to 1) increase in recreational and other creek uses, and 2) continual visual connection

- Importance of recreation
- Parking increasing access will parking be a problem?
- Creekwalk how to get a continual visual connection to creek when the path steers away from the creek?
- Need multilevel access to accommodate flooding
- Canoeing/kayaking

Major Drivers for Onondaga Creek Revitalization Hydrology Options/Drivers Matrix February 7, 2007 Working Group Meeting

	Option 1: Do Nothing (Mentioned but not discussed in detail)	Option 2: Dam Modification	Option 3: Stream Channel Modification	Option 4: Flood Plain Realignment	Option 5: Best Management Practices
Water Quality: Water quality standards/parameters determine stream health which drives allowable uses		Neutral: Potential for greater flow but water is still backing up.	Positive: Even flow across channels.	Positive: Dropped sediment on floodplain instead of in channel.	
Human Health and Safety: Water quality affects human health indicators/standards which drives allowed uses as well as allowed risk and liability		Very Positive: Averts flood risk.	Positive: maintain equal volumes across lengths of creek Proper modifications can avoid bottlenecking water	Neutral: pro acts like a floodplain. Con: Any remaining housing/land use in floodplain is at risk.	Very positive: Reduces rapid and peak runoff, detention prolongs steady release over time over time, reduces flood risk.
Ecological Health and Habitat Quality: Biological revitalization via ecological management for 1) historical species habitat restoration, e.g. salmon restoration or 2) targeted species/habitat creation, e.g., creek shade creation for cold water fisheries.		Neutral: Pro: Allows flexibility in regulating downstream flow. Con: Back-up water can change fishery to warm water.	Positive: Assuming appropriate structures are used in stream.	Positive: Encourages pools and wetlands. Contributes to habitat development.	Positive: Control water quality and volume from upstream.

	Option 1: Do Nothing	Option 2: Dam Modification	Option 3: Stream Channel Modification	Option 4: Flood Plain Realignment	Option 5: Best Management Practices
Politics and Community Involvement: Revitalization goals depend on decision making and economic development to create economic and social benefits to neighborhoods plus equity (major concern), and involvement activities and design elements cause 1) community increasing involvement and 2) change in usage patterns		Neutral: Pro: Flood controls cause the creek to work better. Good for community. Con: Political inertia/resistance Fear of flooding in community.	Pro: Dechannelization will slow flow and cause the creek to work better and be more accessible. Con: How much is the cost? Who pays for this? Are home relocations possible?	Pro: Dechannelization will slow flow and cause the creek to work better and be more accessible. Con: How much is the cost? Who pays for this? Are home relocations possible?	Neutral: Don't cost much, but lots of work is needed to make successful. Also need a cumulative effect to show signs of impact.
Economics: Revitalization can yield direct and indirect economic benefits, property value increase and reinvestment		Short Term: High Cost Long Term: Benefits received from changes (i.e. municipal costs to manage downstream flooding).	Short Term: High Cost Long Term: Any benefits received from changes. Substantial environmental benefits can lead to livelihood benefits and land development. Negative: Gentrification in existing neighborhoods.	Short Term: High Cost Long Term: Any benefits received from changes. Substantial environmental benefits can lead to livelihood benefits and land development. Negative: Gentrification in existing neighborhoods.	Short Term: Cost Long Term: Any benefits received from changes. Relatively low cost with appreciable environmental benefit. Negative: Gentrification in existing neighborhoods.
Quality of Life: Revitalization should lead to increase in 1) community safety and security; and 2) community information sharing and knowledge		Neutral: Fear of floods.	Positive: If access and safety is improved.	Positive: If access and safety is improved.	Positive: If access and safety is improved.
Physical/Visual Access and Use: Increase in physical/visual creek access leads to 1) increase in recreational and other creek uses, and 2) continual visual connection		Neutral: No new access.	Positive: If appropriate access is provided.	Positive: If appropriate access is provided.	Complementary Positive: Changes from above make water look better downstream.

Onondaga Creek Working Group Creek Options May 2, 2007 Meeting

Synopsis: The Working Group discussed a number of creek options in the past three months. These options are listed below. For specific details on each option, please refer to previous handouts.

Hydrology Options:

- Option 1: Do Nothing: This option maintains the present system of management
- Option 2: *Dam Modification:* This option ranges from complete dam removal to small modifications in flow release detention and storage retention during/before high water periods.
- Option 3: Stream Channel Modification: This option focuses on modifying the stream channel.
- Option 4: *Floodplain Realignment:* This option includes creation of a larger upstream floodplain, and changes to adjacent land management along Onondaga Creek.
- Option 5: *Best Management Practices:* This option includes practices like storm water management, upstream erosion control, stream bank restoration, and increasing forestry initiatives.

Biology Options

- Option 1: Increase diversity of riparian vegetation canopy to increase wildlife and bird diversity ("build it and they will come").
- Option 2: Restore cold water fish habitat:
- Option 3: Increase wetland viability and wetland vegetation diversity, restoration by reconnecting drainage systems for wetland areas to other wetlands and creek.

Site Specific Biology Options

- Option 1: Determine goals by stream segment:
- Option 2: Address impact of current flood control methods on creek ecology:
- Option 3: Enhance vegetation/riparian areas in channelized creek corridor:
- Option 4: Create 'ecoparks' in city: improves access for people and filtration/water quality.

Land Use/Open Space Options

Option 1: Establish 'connectivity' (trails and linkages)

Option 2: Include access to the creek in land use decisions (for both public and private land)

Option 3: Change/develop land management practices to support a naturalized, attractive creek

Option 4: Make compatibilities with existing municipal plans

Recreation/Safety/Access Options

Option 1: Initiate a critical reconsideration of 'The Fence' and explore creative, equitable new solutions

Option 2: Make physical improvements to creek channel to improve recreation/safety/access

Option 3: Coordinate recreation/safety/access improvements to support a naturalized, attractive creek

Option 4: Creative multi-use options, for example, microturbines in stream for electricity generation

Site Specific Recreation/Safety/Access Options

Ballantyne to Inner Harbor

Option 1: Improve people-friendly transportation opportunities

Option 2: Maximize existing attractions

Option 3: Establish an urban creek preserve

Dorwin/Nedrow/Ballantyne Area

Option 1: Change/develop land management practices to support a naturalized, attractive creek

Option 2: Establish connectivity

Option 3: Create land uses that combine flood control with recreation opportunities

LaFayette/Tully

Option 1: Purchase/coordinate easements on public and private lands

Option 2: Establish protected areas for fragile/special places

Onondaga Creek Hydrology Working Group Meeting Discussion Hydrology Options February 7, 2007 Working Group Meeting

DRAFT prepared by Robert Griffiths on 02/26/07 Updated on March 27, 2007

Synopsis: The Working Group discussed three general methods of dividing the stream. Onondaga Creek can be looked at: 1) above the dam; 2) below the dam; and 3) as a system/watershed. Of these, five viable options were discussed for hydrology. Working Group discussed additional topics, including global warming, risk, and the Onondaga Nation.

Option 1: Do Nothing: This option maintains the present system of management

- This option was briefly discussed, but mentioned as a viable option.
- Working group noted the current dam can resist a 100 year flood.
- Current channelization seems mostly sufficient, except flooding recurs at Franklin Street.

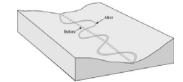


Option 2: Dam Modification: This option ranges from complete dam removal to small modifications in flow release detention and storage retention during/before high water periods.

- Jurisdiction of the dam is complex: Permits acquired through USACE and NYSDEC, yet the dam resides on the Onondaga Nation.
- The dam should be reconfigured to allow adjustable releases of water.
- Expect high costs initially, but there is a potential for funding in the future.

Option 3: Stream Channel Modification: This option focuses on modifying the stream channel.

 Dr. Endreny suggested stream channel modification methods including "Compound Channel Changes" and possibly incrementing restoration up- or downstream, on a segment-bysegment basis.



- These methods attempt to even stream flow across the length of stream; current conditions have a wide degree of variability in flow.
- Hydraulic and sediment data are needed for segment by segment stream channel reconfiguration.
- Will result in changes along the streambanks and within adjacent land.
- Meadowbrook was discussed as a poor example of channel modification for mostly aesthetic reasons. Dr. Endreny notes impairments to ecological function are also a concern; rip-rap used on steep banks discourages riparian vegetation, subsequently reducing shading and protective cover for the stream.
- Open space areas within the city are the most likely candidates for channel modification.

Option 4: Floodplain Realignment: This option includes creation of a larger upstream floodplain, and changes to adjacent land management along Onondaga Creek.

- Differs from *Stream Channel Modification* because this option focuses on land outside the immediate stream corridor.
- Creates greater storage capacity in upstream tributaries to relieve strain of high water periods in main channel, supports stream channel modifications (Option 3).
- Dependent on land ownership and land use patterns throughout the stream corridor.
- Many vacant parcels along the stream and its tributaries exist.
- In Syracuse, the population is currently half the historic high point.
- Changes in land ownership and eliminating buildings and development may be necessary to accommodate stream changes.
- Meadowbrook retention basin is considered a positive example of managing water, recreation, and wildlife.

Option 5: Best Management Practices: This option includes practices like storm water management, upstream erosion control, stream bank restoration, and increasing forestry initiatives.

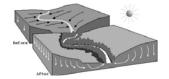
- Could be applied in rural and urban areas.
- Low cost, proactive approach.
- Potential for disagreement between stakeholders. Some groups prefer to have increased sediment.

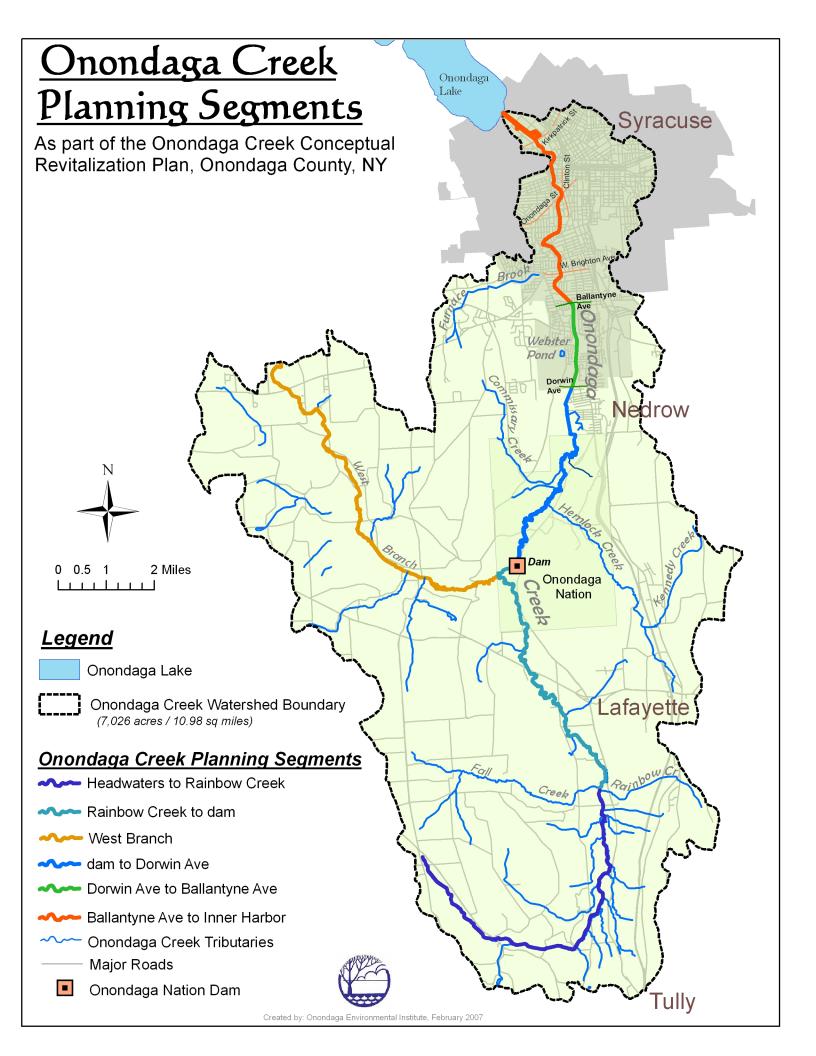


- o Stream bank stabilization.
- o Continued efforts by OCSWCD reducing overall sediment entering stream.
- o Increase riparian area vegetation and forest cover.
- o Innovative storm water management such as raingardens.
- Stormwater regulations need to be imposed.

Other major points of discussion relating to all options:

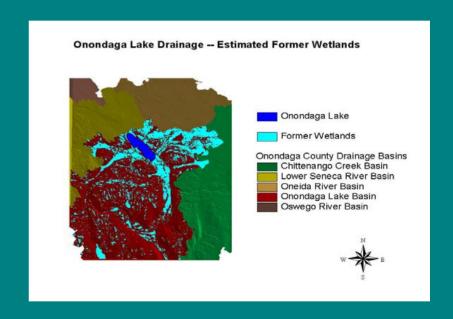
- Onondaga Nation: Jeanne Shenandoah stated that they would be open to discussion of many ideas; however, they preferred options that would allow the Creek to be as natural as possible.
- Global Warming: Working Group discussed the greater seasonal variations and associated wide fluctuations in precipitation that will occur as a result of global warming. There may also be periods of drought and storms of higher intensity.
 - o Binghamton, NY experienced major flooding in the summer 2006.
- Risk: There will be risk involved with any changes. We will need to accept and mitigate this risk as long as the creek is present.
- Government inaction needs to be overcome.





July 6, 2005 South Onondaga to Meadowbrook

Historical Context loss of wetlands
 throughout Onondaga
 Creek watershed from 1800's to now



- First stop-South
 Onondaga Marsh at
 Route 80 -looking
 west
- What type of wetland is this?



- First stop South
 Onondaga Marsh at
 Route 80- looking
 west
- What functions does this wetland provide?



- First stop South
 Onondaga Marsh at
 West Branch of
 Onondaga Creek
- What riparian features are here?



- First stop Onondaga
 Creek West Branch looking east
- What riparian features can be seen in this view?
- What wetland functions?



- Second stop Redmill
 Road wetland crossing
 looking west
- What type of wetland is this?
- What functions may be provided by this wetland?



- Second stop at Redmill Road wetland crossing looking east
- What type of wetland is this?
- What functions are provided here?



- Third stop Meadow Brook Retention Basin
- What functions was this designed for?
- What other nondesigned functions are provided by this created wetland?



- Third stop Meadow Brook Retention basin
- What design features do you like from this created wetland?
- Could we use them along Onondaga Creek?



Onondaga Creek Conceptual Revitalization Plan Working Group Homework

Ms. Speer and Mr. Takahashi are continuing to work on the website. They need your assistance! Text is needed for the "About the Creek" section of the website, which describes the creek by segment.

Name:
Note: Unless specified that you wish to remain anonymous, we will credit you for your contribution on the website.
Please write a few sentences about your section of the creek. What does it look like? What is its history? What can be found there?
Do you have a specific memory about that section of the creek that you would like to
share?

Watershed Recommendations, categorized by **Onondaga Creek Revitalization Plan Goals**

What do you think of this first, overall recommendation??

Overall recommendation:

The OCRP project team recommends continuing the Onondaga Creek Working Group into an advisory/steering committee to implement creek revitalization. To move into this next phase, Working Group members will have to make a number of decisions, including:

- 1. Determine what kind of model is appropriate for the next phase of the Working Group.
- 2. Define functions of the group, including new members and structure.
- 3. Define funding mechanism or how to maintain sustainability of effort over the long-term.
- 4. Ascertain ways to gain government backing and support, see 4. E. Intermunicipal task force.

1) Water quality

- A. Achieve Class B standard throughout watershed.
 - Achieve water quality that supports diverse fish and wildlife.
 - Achieve water quality that supports contact recreation. Action Items:
 - 1. Petition DEC to reclassify entire watershed to at least class B.
 - 2. Implement performance-based best management practices (BMPs) throughout watershed. Assessment of BMP programs is recommended. See appendix _____ for additional recommendations and a list of management measures and practices based on US EPA guidance documents.
 - 3. Recommend continued water quality assessment in Onondaga Creek watershed for full range of water quality parameters. Identify issues/areas of concern from water quality assessment, and then formulate corrective measures.
 - 4. Recommend complete sewer study for all jurisdictions in the Onondaga Creek watershed.
 - 5. Recommend intermunicipal stormwater management study/comprehensive plan, to meet Phase II requirements for all jurisdictions in the Onondaga Creek watershed. The study should include these components:
 - a. Conduct assessment and characterization of system: storm and sewersheds,
 - b. Identify and map the subwatersheds that go to specific stormdrains/CSOs, determine locations where stormwater BMPs will make a substantial difference to water quality.
 - c. Develop a menu of stormwater BMPs that fit specific situations; this menu should emphasize application of innovative, 'green infrastructure' techniques, such as green roofs, permeable paving and rain gardens, see appendix ____ for more information; d. Include maintenance procedures in planning, especially improved street and storm
 - sewer cleaning.
 - e. Identify steps to implementation.
 - 6. Multiple governments have jurisdiction within the Onondaga Creek watershed. Forms of cooperative intermunicipal decision-making about sewer/stormwater management should be explored to make real, lasting improvements to water quality.

What do you think of #6??

B. Water should be clear and attractive, free of garbage.

Action items:

- 1. Expand cleanup efforts
 - a. Establish programs for adopt-a-creek with citizen groups, with city/county/town cooperation.
 - b. Expand and boost funding for CCE creek cleanup program, tie in with partners like OCRRA
- 2. Establish county-wide comprehensive littering education program, including schools. See action items under 5) Education. The Onondaga Creek corridor can be a pilot study area. Formulate and fund stormwater/anti-litter education as one comprehensive program, applied to Onondaga Creek corridor. Use existing material and expand to tailor to the creek corridor. See appendix for a list.
- 3. Implement anti-dumping enforcement/education campaign by municipalities/county.
- 4. To protect water clarity, find management solutions and financial resources for continued mudboil maintenance, including exploring options for public/private partnerships. See Onondaga Creek Working Group's site-specific recommendations, section 5.3.

2) Human health and safety

A. Achieve Class B standard so that human contact with water is safe (see water quality goal).

- o Fish caught in Onondaga Creek should be consumable (or "safe to eat"?).
- Avoid adding pollutants to creek by using innovative runoff and stormwater management. Examples are: stormwater filtration (rain gardens) and storage (rain barrels/tanks), LEED standards in building design.

Action Items:

- 1. Recommend funding pathogens study for whole watershed.
- 2. Recommend fish-flesh study as part of water quality assessment to gauge extent of toxicity in Onondaga Creek fish populations.
- 3. Conduct creel or perceptual survey of Onondaga Creek fish consumption. If warranted by survey, initiate fish consumption education in the city.
- 4. Adhere to the LEED Green Building Rating System for Neighborhood Development (LEED-ND) to address stormwater retrofits in existing buildings and neighborhood design. The LEED-ND goal is to establish standards for assessing and rewarding environmentally superior development practices. Benefits to human health are inherent in these development practices. For more information and resources, see appendix _____.

 5. Address safety as creek access increases, by investigating notification or warning systems for periods when flood stage water and combined or storm sewers are flowing, increasing potential human contact with pathogens and dangerously high water. Examples are included in appendix _____.
- B. Minimize potential for drowning, damaging floods, and liability.
 - Create floodplain in City of Syracuse and Nedrow
 - Slow stream velocity
 - Provide re-naturalization of shoreline and wetland areas (see ecological health and habitat goals)
 - All of the above are intended to create recreation opportunities (see access, recreation and use goals)

Action Items:

1. Conduct stream network analysis: assess loading of tributaries, conduct hydraulic analysis and determine options from the resulting information. Options should include

structural and non-structural ways of re-accommodating flood waters, including reducing bank grade and increasing storage capacity, especially identifying and using upstream storage opportunities,

- 2. Implementation of projects should be based on the above analysis and consider the entire creek hydraulic regime.
- 3. Implement education campaign for flood education/natural functions of streams/wetlands/floodplains. See action items under 5) education.

C. In the City, make a new policy for Onondaga Creek fence that balances the need for safety and access. Objectives:

- Use natural barriers of native plant species
- Establish dialog with affected communities
- Work with municipal land managers to maintain both new and old fencing Action items:
- 1. Recommend a study of historic/indigenous plant species to determine what can serve as alternative natural barriers to chain-link fencing.
- 2. Based on study results, install a natural barrier demonstration site, involving community participation and existing partners, such as CCE's CommuniTree Stewards and Onondaga Earth Corps. Plan for community-based maintenance.
- 3. Safety programs should be linked to fencing alternatives and creekwalk development. Incorporate with planting programs effective lighting for safety. Study examples of environmentally-sensitive lighting use in U.S. and Canada, for example, use of motion-activated lights. Recommend set-up of neighborhood watch programs, and blue-light emergency phone systems along creekwalk.

3) Ecological health and habitat

A. System-wide, increase native diversity of riparian vegetation canopy to increase wildlife and bird diversity.

Action items:

- 1. Conduct study of Onondaga Creek usage as a migratory corridor, including past and present use, plus recommendations regarding future use.
- 2. Implement vegetation survey, cataloging both current and historic species.
- 3. Identify 'hot spots' where there is an immediate need to control exotics in the creek corridor; implement pilot control programs in hot spots. Use existing programs as resources or as models, especially those of Adirondack Park Invasive Plant Program, The Nature Conservancy Weed Information Management System, and Finger Lakes Partnership for Regional Invasive Species Management (PRISM) program.
- 4. Formulate a plan for restoration of native plants to accompany exotic species control. Establish cooperation between local organizations and schools to maximize funding and information resources, such as NYS DEC eradication programs/pilot programs, include flora and fauna.

- B. System-wide, restore cold water fish habitat, at a minimum, no alterations to creek corridor should degrade habitat further or impede either down- or up-stream passage of cold water species. Objectives:
 - American Eel restoration is specific objective
 - Set sub-goals for stretches where cold water fish habitat restoration is most and least plausible

Action items:

- 1. To achieve this goal, address the complete life-cycle habitat needs of cold water fish species (see list below), thus moving towards overall ecological recovery of creek system. Survey fish habitat conditions, especially bottom material and stream edge conditions throughout corridor.
 - a. Recommend an American eel habitat assessment study and cooperation with state and federal efforts for American eel conservation.
 - b. Recommend studies for restoration or conservation of cold water fish species, including lake sturgeon, Atlantic salmon, and brook trout. All studies undertaken should be in cooperation with regional agencies and initiatives, such as the USGS Tunison Laboratory of Aquatic Science and the Eastern Brook Trout Joint Venture.
- 2. However, a technical answer to contamination question needs to be found before returning species to the Onondaga Creek system. Corresponding to the recommendation under Human Health and Safety, conduct system-wide assessment of contamination, including contaminant identification, risk level, and potential for contamination of fish.
- 3. Recommend broad, inclusive stakeholder involvement in restoration, conservation and contamination studies, communicating results and decision-making.
- 4. Recommend research of historic aquatic & riparian fauna in system, including support of academic research.
- C. Increase wetland viability and wetland vegetation diversity, restoration by reconnecting drainage systems for wetland areas to other wetlands and creek

Action items:

- 1. In preparation for wetland reconnection, identify and survey existing wetlands of system, as part of stream network analysis. Survey should include wetlands 1 acre size and larger, soils and land use data.
- 2. Recommend community education about naturally functioning wetlands, particularly disease vectors and risk and runoff storage/flood risk reduction.
- D. Use native/indigenous species in restoration projects

Action items:

1. Plant selection should consider what is appropriate to local system. Use of native species is encouraged, use of non-native species should be justified. Plants selections should serve multi-functional purposes, for example, filter runoff and provide bird habitat. High-use sites need special consideration. No invasive species should be used.

4) Access, Recreation and Use

A. Throughout the watershed, establish a system of trails and linkages that serve to connect rural and urban neighborhoods (the concept of the creek as a "spine"). Objectives:

- Use unified, standardized signage for directing people to destinations
- o In the City, establish bike/walkway
- Reclaim and daylight tributaries to enhance connectivity (see ecological health and habitat goals)

Action items:

- 1. Recommend creating a plan or study for multiple uses in the whole watershed, based on the above watershed goals and recommendations. Recreation needs, like trails, must be planned to balance with habitat/ecological needs.
- 2. Recommend a continual coordination of groups and stakeholders to establish multiuse standards and to assist guidance and integration of ecological and recreation projects.
- B. Add to, maintain and protect open spaces, near Onondaga Creek and its tributaries
 - Tailor open space format to benefit surrounding communities, from preservation of scenic and natural areas to developing urban ecoparks
 - o Incorporate creative multi-use options in recreation/access planning
 - Think broadly and take advantage of existing spatial opportunities, for example, tailor ecopark themes to specific areas
- C. Make creek access a priority in land use decisions, both for urban and rural land. Objectives:
 - o Incorporate access for boating, fishing and wading/swimming, picnicking and benches, depending on area
 - Develop a process to achieve creek access from private land that is acceptable to land owners
 - Create appropriate creek-driven development

Action item:

- 1. Consider impacts to access sites in decision-making and plan to minimize human disturbance. Access points need to be suitable for the area and coordinated with multiple use study recommended above. Multiple types of access should be considered, including visual access.
- 2. Increase fishing access based on local assessment (see appendix).
- D. Establish land management practices and coordinate municipal recreation/access projects to support a naturalized, attractive creek. Objectives:
 - o Identify appropriate uses and enforce against illegal activity
 - o In urban and rural areas, use native species in riparian zones, instead of mowed grass, crops (see ecological health and habitat goals)
 - Practice surface runoff mitigation in urban areas (see human health and safety goals)
 - Plan to separate paved trail from directly beside stream, increase areas of floodplain forest, riparian vegetation in between trails and creek
 - Use materials other than concrete or concrete blocks in stream channel

- E. Throughout watershed, governments adopt a new commitment to Onondaga Creek revitalization
 - Local governments should take steps to recognize creek as a critical area
 - Use tools available to municipalities to prioritize creek and tributary protection
 Action Items:

What do you think of these action items?

- 1. Recommend development of a model for intermunicipal coordination and cooperation (see section 8.3). Selected model should provide holistic planning for Onondaga Creek, which may include functions such as:
 - a. Identify synergies or conflicts between existing projects and conceptual revitalization plan
 - b. Identify funding and education opportunities for municipalities, for example, technical assistance with stormwater regulation compliance
 - c. Identify municipal project cooperation/coordination
 - d. Identify and recommend useful models for municipalities to implement creek revitalization and protection, for example, buffer laws and conservation easements.
- 2. Recommend that defining, selecting and implementing this intermunicipal model be one of the first tasks of the Working Group continuation. Role of intermunicipal entity should be clearly defined, whether it is relies on voluntary compliance or has the power to wield 'carrots and sticks' to further creek revitalization.

5) Education

- A. Provide diverse education experiences and opportunities for multiple audiences
 - Via signage, including marking watershed boundaries
 - Via outdoor education centers
 - Via strengthening existing community facilities for watershed education
 - Via interpretive trails
 - Via gardens with diverse vegetative types
 - Via community creek restoration projects and clean-ups
 - Via watershed-specific curricula materials

Action items:

- 1. Working Group continuation should coordinate education efforts of different organizations to identify needs and sources of funding, for example, outdoor education funding through City school rebuilding program.
- 2. Recommend creation of a creek stewardship program modeled on the Sligo Creek Stewards program in Silver Spring, Maryland.
- 3. Recommend creation of a creek-based sustainability program, through SUNY ESF.
- 4. Address in-school education:
 - a. Local teachers need a clearinghouse for creek information and existing curricula.
 - b. Litter education is needed in schools, as a cooperative effort with community groups and non-profits, and stream steward programs.

Meredith's remaining questions:

Is it an oversight to leave these issues out? Community involvement in design of recreation and access, concentrated animal feeding operations (CAFO's), climate change, USGS watershed pollution model

Is there enough 'action' in our action items? Seems to call for lots of studies.

Flip Charts - Onondaga Creek Working Group Meeting: June 6, 2007

Draft Prepared by Julia M. Renn June 12, 2007

Rural Segments

- Fishing access and opportunities off Rt. 20 across the road from Henderson property. *May require private land easement.
- "Save the County" land parcel by Henderson property used for trail bike/footpath? Natural Interpretation
- Tully Farms road fishing access site
- Watershed signs at Rt. 20 stream intersection
- Nichols Rd. Creek intersection:
 - Fishing access and parking easement
- Cardiff Giant signage on Tully Farms Rd.
- *Rural Best Management Practices for all agricultural and residential lands surrounding creek corridor
- Otisco Rd. Bridge Construction
- Mud Boil Site From Honeywell to Onondaga County or NYS Park?
- Maintain Mud boil Site as settling basin
- Mud boil area- Looking into/explore purchasing for access/interpretive trail

Main Branch-Otisco to Vesper

- Tully Farms Road Where creek crosses road Picnic/fishing access
- Subsidence ponds explore access for fishing. Discuss liability issues with Honeywell
- Mark St. Laurence / Chesapeake Divide on 81 with a sign
- Class I trout stream impacted by mine- sold by Clark Concrete to ? (John knows name)

Rainbow Creek

- Landslides Development pressure east of I81 may contribute to it
- Explore conservation easement w/Blue Hole landowner. If it saves them taxes, they would be interested
- Identify criteria for certain areas to figure out how to protect- certainly easy with Honeywell
- Identify and mark off Fellows Falls area –Bio Preserve

Mixed Segments

- Create meander/wetlands on both sides of creek (East and West)
 - Purchase land easement
 - o Fisheries access at somewhere in first segment
 - Issues: steep banks, no current access roads
 - Add a bridge for pedestrians closer to Kelly park
 - Nature/Interp. Trail ->work into
 - Limited Vehicle Access/Parking
 - Urban BMP -> in and around residential (Add this to whole Mixed Section)
- Roswell to Dorwin
 - Drop Structure at Dorwin
 - Fix or modify
 - o Dorwin Spring

- o Historical Site-> old castle ~ 1700/1800
- Dorwin to Fiscoe

(continued on reverse)

- Above Dorwin -> look into ways to avoid/stop mowing
 - Flood channel ->issue may not be feasible
- Entire Section
 - o Urban BMP
 - Manage restore uplands
 - Daylight and improve tribs through entire area
- E. Seneca to Ballantyne
 - East Side -> Faith Heritage
 - West Side -> Zen Center
 - o Bike and/or Kayak Rental/Service Area near/on Seneca
- Furnace Brook
 - Some type of Riparian Buffer for entire brook
 - o Daylight
 - Old Mill -> Near ball field in Elmwood
 - Elmwood Bike Trails
 - *PROTECT AND MANAGE ENTIRE STREAM AS A COLD WATER FISHERY
 - o Manage/include urban BMP and stream buffer along entire brook
 - o Identify criteria (goals and drivers) and apply to other existing practices/ projects

City Stream Segments

- WG needs to review Armory Square northward
- Discussion around Midland Need for green space –
- At MOST (Armory RTF) use the facility as a "Living Machine" and/or facility that school groups could visit - an engineered ecosystem - need for input into Armory design
- Highlight the viaduct at Warehouse and at W. Genesee—Historic importance of Erie Canal over Onondaga Creek
- Signage Interpretative and Historic markers
- Parking Lot at Armory Facility should be converted into park space green space widen creek
- Green Roof on Armory RTF-connect to MOST
- Habitat improvements with channel modification at the RTF
- Parking along the creek walk needs to be addressed (no surface lots v. tourist ie motorists)-> need a traffic study-> do not try to accommodate parking demand in creek zone
- Carbon monoxide output in cold weather- no add during inversion conditions
- Remove the old Holiday Ford building over creek and develop plaza with viewing of National Grid (NIMO art deco) - green space with restaurant and apartment promenade – preserve vista – create a view - vantage point
- Bike Paths connect along creek walk (spine) Appendages to spine lateral paths away from creek to neighborhoods
- Natural filtration Get H20 into the ground percolation
- West Street needs to be opened up with cross connections reconnected. Bring back intersections
 pick up
- Prime development space along creek links to comprehensive plan and other plans (Syracusethenandnow.net/Our future/Comprehensive Plan)
- Between Genesee St and Erie Bld. Establish linear park and edge next to creek
- Habitat improvements multiple channel bypass @ Evans St./ near office building

•	Concepts for access should apply to DENSTINY-all the way to lake-overall creek "preserve" criteria (qualities that constitute the "preserve" need to be addressed along the entire creek corridor)

Onondaga Creek Working Group Meeting, April 4, 2007 Land Use/Open Space and Access/Recreation/Safety Options

DRAFT Prepared by Meredith Perreault, April 10, 2007 and revised on April 25, 2007

Synopsis: The options below are a synthesis of ideas discussed by the Working Group. They are based on meeting and flip chart notes.

System Wide Options

Land Use/Open Space

Option 1: Establish 'connectivity' (trails and linkages)

- The creek can become an overarching, system-wide connection between rural and urban areas (conceptualizing the creek like the vertebrae of a spine). Keep the creek corridor as open space, but support nearby land uses, including destination areas.
- Use signage to direct people to destinations; link to neighborhood centers, like schools. Coordinate with services are nearby restrooms/restaurants open for creek corridor users?
- In the city: since the creek corridor is mostly in public ownership, establish a bike and walkway to connect people. Integrate park and open space in the city into a continuous corridor. Layout connections to other parts of city (work with groups like Bike-CNY); including looking at linkages should downtown sections of I-81 be removed.
- For ecological *and* land use connectivity, examine potential for daylighting and re-claiming tributaries and remnants of original creekbed to the current channel.

Option 2: Include access to the creek in land use decisions (for both public and private land)

- Research resolutions to public/private access. For example, in Tully area, people are fishing on private land without permission; owners prefer not to post land, ignoring it seems best, but is there a more agreeable solution?
- Incorporate options such as boating support, fishing platforms in planning.

Option 3: Change/develop land management practices to support a naturalized, attractive creek

- Address what is known as "use-activity compatibility", for example, allowing or prohibiting ATV use on paths.
- Strengthen municipal enforcement/education efforts to discourage illegal activity, especially dumping, littering.
- Use native species in creek corridor management, as opposed to mowed grass.

Option 4: Work with municipalities, such that the Onondaga Creek Revitalization Plan is incorporated into existing municipal plans, or existing municipal plans are compatible with the OCRP.

Recreation/Safety/Access

Option 1: Initiate a critical reconsideration of the urban creek corridor fence and explore creative, equitable new solutions

- Examine how other cities manage safety/access liability. Determine level of liability in Syracuse and New York State.
- Establish a consistent and workable fencing policy and management. Work with municipal land managers to maintain existing fencing while it is needed (prior to revitalization/redesign).
- New fencing options should be considered in every future creek improvement project: by providing a real and suggestive barrier of lower fencing/vegetation, then there is no reason to

- expect the average person to drown. Use rocks, other materials to separate people from creek in areas, examples of alternatives can be found on Buffalo River.
- As fencing alternatives are considered, create dialog with affected community. Balance the need for security with improved physical and visual access to Onondaga Creek.

Option 2: Make physical improvements to creek channel to improve recreation/safety/access

• Change cross section of streambank to increase safe access, from steep slopes to more gradual slopes, incorporating added floodplain and room for meanders.

Option 3: Coordinate recreation/safety/access improvements to support a naturalized, attractive creek

- Plan to separate paved trail from directly beside stream, increase areas of floodplain forest, riparian vegetation in between the trail and creek.
- As in biology options, use materials other than concrete or concrete blocks in stream channel.

Option 4: Incorporate creative multi-use options in recreation/access planning

- Take advantage of existing spatial opportunities: tailor ecopark themes to specific areas.
- Think broadly, for example, incorporating microturbines in stream for electricity generation

Site Specific Options

Ballantyne to Inner Harbor

Option 1: Improve people-friendly transportation opportunities

- From Brighton to Ballantyne, two streets for cars on both sides of Onondaga Creek are not needed.
- For trail, separate bike and pedestrian traffic.
- Incorporate botanical garden plans into revitalization options. This existing plan assumes there is a creek-long trail connecting Upper/Lower Onondaga/Elmwood parks.
- Use linkages and creek trail as commuting route.

Option 2: Maximize existing attractions

- Incorporate familiar landmarks in linkages to Onondaga Creek trails.
- Incorporate city viewscapes into creek trails, make opportunities for seeing historic/architecturally interesting buildings to appreciate both natural systems, <u>plus</u> built landscape

Option 3: Establish an urban creek preserve

- North of Kirk Park, use vacant land banked by City of Syracuse to form basis of "creek preserve" that guides land use.
- Use creek preserve status in Newell area to add meanders and create a more natural looking channel.

Dorwin/Nedrow/Ballantyne Area

Option 1: Change/develop land management practices to support a naturalized, attractive creek

- In floodplain area, vegetation and trees needed, planning for more naturalized appearance, more forest than park.
- Focus on improving water quality and fishing opportunities in this section. Build on better water quality conditions higher in the watershed.
- Plan for managing/restoring/creating wetlands south of Dorwin Avenue.

Option 2: Establish connectivity

- Add walkways to cross creek
- Plan for varying opportunities to access and enjoy creek from continual path.

Option 3: Create land uses that combine flood control with recreation opportunities

- Detention basins, holding ponds that prevent flooding and is a recreation area
- Plan for managing/restoring/creating wetlands south of Dorwin Avenue.

LaFayette/Tully

Option 1: Purchase/coordinate easements on public and private lands

- Purchase small areas of land for canoe access, use easement incentives similar to Upper Delaware River.
- Research available means for farmers to get paid for easements and absolved of use liability.
- Work with Onondaga County in planning Route 20 duck and wildlife area (across from Save The County land)

Option 2: Establish protected areas for fragile/special places

- Blue Hole in LaFayette and Fellows Falls in Tully need to be placed under protection.
- Establish cooperative relationship with Honeywell, as major landowner in southern watershed, to protect creek and associated fragile lands in their ownership.
- Municipalities should exercise their right to regulate land use through zoning regulations to protect creek and associated fragile lands.



Onondaga Creek Working Group Meeting, April 4, 2007 Land Use/Open Space, Access/Recreation/Safety, Options FLIP CHART TEXT

DRAFT Prepared by Meredith Perreault, April 6, 2007

System Wide Options

Land Use/Open Space

- Tully area now have lots of people fishing without permission; don't want to post, ignore it seems best.
- Integrated park/open space in City.
- Resolve public/private.
- For city mostly public ownership bike and walkway to connect people
- Examine "use-activity compatibility" ATV use on paths
- Discouraging illegal activity dumping/garbage
- Use native species
- Overarching, system-wide connection between rural and urban creek like vertebrae
- Keep it open space, but support land uses, including destination areas
- Examine potential for connecting tributaries and remnants, traces for creek health
- Enhance mowed areas to be more natural vegetation and creek channel (pipes as constraints in some areas)
- Make compatibilities with existing municipal plans
- Following example of Ottawa (access? Myrna)
- Think about services are restrooms/restaurants open?
- Direct people to where things are with signage
- Link to neighborhood centers schools
- Look at linkages to where 81 comes down
- More linkages layout connections to other parts of city –work with groups like Bike-CNY
- Boating support, fishing platforms

Recreation/Safety/Access

- Examine how other cities manage safety/access; liability how much liability is there really? Jim can only remember 2 people drowning, especially by falling in.
- Fencing only in some places/neighborhoods why is this? Fence is falling apart. Kids will look for barriers to jump over it's their nature. Holes in fence by play areas.
- Change cross section changes slope to make it safer. Need more space to spread it out.
- Fence needs to be part of dialog- the more you improve, the more liable you are.
- Electricity generation microturbines in stream.
- Why can fence not be at Franklin and why is it in other neighborhoods?
- Fence can be left out as the creek is improved?
- Channel's blocks are popped out by tree roots. Once one block goes, many go. (This is why City is anti-tree in the channel)
- Real and suggestive barrier of lower fencing/vegetation no reason to expect the average person to drown.
- Need to feel secure walking along short chain fence (is a little weird)
- Separate paved trail from right by stream areas of floodplain forest, plants, riparian
- Use rocks, other materials to separate people from creek in areas like Buffalo River examples
- Take advantage of spatial opportunities: ecoparks different ones in different areas.
- As people are attracted to area options and amenities expand
- Widen the profile if you can't do meanders

Site Specific Options

Ballantyne to Inner Harbor

- From Brighton to Ballantyne don't need 2 streets on both sides
- Separate bike and pedestrian traffic
- Newell area meanders more natural looking channel
- Botanic garden plans uppler/lower Onondaga Park use street extension to Elmwood assumption in plans are that there's a creek-long walk use it as a jumping off point, connect to other areas, making streets as parkways
- North of Kirk Park lots of vacant land banked by Vito Sciscioli
- Banked lands "creek preserve" that guides land use
- In City use linkages and creek trail as commuting route so you can go to places that matter
- Myrna's point bring people boost to city
- City viewscapes make opportunities for seeing these wonderful buildings natural systems, <u>plus</u> built landscape

Dorwin/Nedrow/Ballantyne Area

- Stonedust path city grant request turned down
- Vegetation and trees needed think more of forest than park
- Think about wetlands south of Dorwin
- Detention basins, holding ponds prevents flooding and is a recreation area
- Walkways to cross creek
- More naturalized
- Different ways to access creek different kinds of space use continual path with different points of access
- Have to clean it first! This is the place to start water quality as major driver.
- Fish edibility people eat fish and Snavlin's
- Creek gets healthier south of Dorwin

LaFayette/Tully

- Toughest access section
- Blue Hole (LaF) and Fellows Falls need to be under protection (mining impact?) before they are gone
- Purchase small bits of land for canoe access Upper Delaward River; easement incentives
- Talk with Honeywell find out what's going on. Selling land for development including Fellows Falls
- Municipalities can have more impact on land use/ use with existing zoning
- Farmers got paid for easements and abloved with liability
- County has access by Rt 20 going to do duck and wildlife area across from STC land

Onondaga Creek Working Group December Homework

- 1. What's your opinion on the Onondaga Creek "planning segments"? Study the map and see if the segments make sense to you. Keep in mind that we'll plan meetings (mini-forums, stakeholder meetings) according to these segments. Here is a list:
 - 1. <u>The Inner Harbor</u> (From the Lake shoreline to Kirkpatrick St.)
 - 2. The Business District (From Kirkpatrick St. to the intersection of Clinton St. and Onondaga St.)
 - 3. <u>The Southside</u> (from the intersection of Clinton St. and Onondaga St. to West. Brighton Ave.)
 - 4. <u>The Valley</u> (From West Brighton Ave. to Dorwin Ave. {The City Limits})
 - 5. <u>Nedrow</u> (From Dorwin Ave. {The City Limits} to the Onondaga Nation Boundary)
 - 6. <u>Onondaga Nation</u> (The Onondaga Nation)
 - 7. <u>West Branch</u> (The west branch of Onondaga Creek to the Onondaga Nation)
 - 8. Tully Valley (South of The Onondaga Nation)

What do you think?

2. Considering these planning segments, which segment(s) do you think should have the first Onondaga Creek Goals and Issues meetings? In other words, where should we start?

3. For the stream segment you live or work in, please recommend two specific potential meeting locations. Who should we contact at the locations you recommend?

4. For the stream segment you live or work in, can you recommend two existing groups (clubs, associations, church groups) that might be willing to host an Onondaga Creek Goals and Issues meeting as part of their regular meeting schedule?
5. Lastly, review the "Stakeholders" list. Please add groups that are missing. You can add groups, by listing below, emailing Meredith (majonon@verizon.net), or adding in the margins of the list. Please include contact information!
Thank you for your help! Please bring to the January Working Group meeting or drop in the mail to: Onondaga Lake Cleanup Corp, 102 West Division Street, Third Floor, Syracuse, NY 13204, Attn: Meredith
C:\Meredith\Grants and Projects\FFY2003 CCWI Onondaga Creek Plan\Meetings\Working Group Meetings\Working Group Meeting_07DEC05\Homework.doc

- Optional History Readings for the Onondaga Creek Working Group Available at area public libraries (listed in italics after each title)
- Bartram, J., L. Evans, et al. (1973). <u>A journey from Pennsylvania to Onondaga in 1743</u>. Barre, Mass., Imprint Society. *Onondaga Free Library (reference copies)*
- Beauchamp, W. M. (1908). <u>Past and present of Syracuse and Onondaga county, New York, from prehistoric times to the beginning of 1908</u>. New York, Chicago, Clarke S.J. Publishing Company. *Central Library, Betts Branch, Petit Branch, Baldwinsville, Fayetteville Onondaga Free and Manlius Libraries (reference copies; nonfiction shelves at Central Library)*
- Bruce, D. H. (1896). Onondaga's centennial: gleanings of a century. Boston, The Boston History Company. Central Library, Betts Branch, Hazard Branch, Mundy Branch, White Branch Libraries (reference; nonfiction shelves at Central Library)
- Chase, F. H. (1924). <u>Syracuse and its environs: a history</u>. New York and Chicago, Lewis Historical Publishing Company, Inc. *Central Library, Betts Branch, Hazard Branch, Mundy, Paine, Petit, Soule, Liverpool, Manlius, Fayetteville, Onondaga Free Libraries (reference; nonfiction shelves at Central Library and Hazard Branch)*
- Clark, J. V. H. (1849). <u>Onondaga: or Reminiscences of Earlier and Later Times; and</u>
 Oswego. Syracuse, NY, Stoddard and Babcock. *Central Library, Manlius, Onondaga Free, Fayetteville, White Branch, Baldwinsville, Solvay, Liverpool*(reference; nonfiction shelves at Central Library)
- Hand, M. C. (1889). From a forest to a city. Personal reminiscences of Syracuse, N. Y. Syracuse, Masters & Stone. Central Library, Fayetteville, Liverpool and Onondaga Free (reference; nonfiction shelves at Fayetteville)
- Hasbrouck, M. J. (1942). <u>Early Onondaga in letters to young students</u>. Syracuse, N.Y., Bardeen's Inc. *Central Library, Hazard Branch and Fayetteville (reference; nonfiction shelves at Hazard Branch and Fayetteville)*
- Munson, L. S. (1969). <u>Syracuse The City That Salt Built</u>. New York, Pageant Press International Corp. *Most library branches have this one Central, Betts, Beauchamp have it on the nonfiction shelves, LaFayette and Onondaga Free have it as reference.*
- Whitford, N. E. (1906). <u>History of the Canal System of the State of New York together</u> with Brief Histories of the Canals of the United States and Canada. Albany, Brandow Printing Company. *Central Library (reference)*

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Will the people you know find this plan acceptable?

- People value H2O resources they visit. For recreation habitat multiple uses.
- Fishing- children low cost cleanup small & dumping hazard to health
- Increase property values safety, flooding (city)
- Who's going to pay for it?
- Neighborhoods in south plan would be opposed (Tully) no walking trails on private land limited access fishing access-OK-fisherman go up & down is OK.
- Honeywells are potential private land owners would resist
- Money an issue walking & fishing is accepted (Nedrow) few people walk farmers use trails – few fishermen
- Advantage high energy costs local recreation could increase
- Rail Trails valuation of homes went up with access to trails
- Town LaFayette Onondaga Nation to north Kennedy Creek
- Municipal park events fishing access could be worked out
- 2-3 areas in Town of LaFayette Rt 20 crossing possible swimming (?) to fishing
- To South creek changes dramatically; has an Adirondack feel
- People in Valley neighbors don't want people in their backyard people don't like change
- Most of city has run back on creek- industry follows creek corridor creek has been lowered people afraid to access – not many have a positive view – report can help change attitudes.
- Stormwater management is backwards runoff vs retain.
- Municipal industry owner along creek were receptive of concepts presented in plan (Amy)
- Informal trail exists build it and they will use it. (Ollie)
- Need a trail from Ballantyne to Nedrow build it and they will use it
- Falls 30' how many people know about it?

Discussion on draft list of pilot projects

- Combine projects
- Living Fence
 - No fence I want access
 - Ballantyne to Onondaga Lake never going to take down
 - Living fence "demonstrate" effectiveness
 - Alter perimeter (morphology) make creek safer
- Mowing
 - o Reduce moving remo (?)
- Shade tree
 - Willows shade 40' a week/ Kelly Park South
- Green infrastructure
 - o runoff
 - state paid green infrastructure (Dunbar, industrial ____? downtown)
- Litter education program

- 7 cows died from beer can chopped up (aluminum can't magnet) chopper for silage – cows swallow magnets to prevent metal from going into reticulum
- o plastic bags cows & dogs
- o look of creek invites littering
- Native plant restoration exotics control
 - o hot spots invasive have hold
 - o loosestrife control w/ beetles (Amy)
- Rural BMPs sediment controls
- Trail demonstration connection trail
 - o add bikes & it's a canoe route (Ollie) fishing access, picnic grounds

Slide 1 – Watershed Recommendation 1

- Balance participants/strategic participants
 - Water authority
 - Elected official
 - o Do we represent correct people to move forward?
 - Power to implement
- Dynamics-geographical-representation citizens
 - o Grassroots
- Politics –personal use- politicians are always welcome
- Mechanisms for bringing people in depending on need/geographical region
- Possibly split into two entities:
 - Gov't/agency
 - o Citizen
- Keep gov't and citizen communication exchange at same table
- Oneida Lake Group interest officially appointed individual act as liaisons to elected officials

Slide 2 – Intermunicipal Agreements

- How much power do they have
- Build alliances buy in
- Question re: Bronx River Alliance
 - o Board requires resources \$, people, represent constituency
- Key player/ OnCo whole watershed
 - Onondaga Nation
- Explored option:/cannot be forced on anyone, can be divisive
- Pilot. Initiative /Brings funds/division of power
- State/City/Towns/Onondaga Nation/County
- Concerns were addressed engineering, farms, city, towns, On Nation sensitivity to issues

Page 6 (slide 3)

- People representing constituencies might have subversive agenda's
- Congress, state or local level- Onondaga Nation
- Formalize process/interactive w/gov'ts
- Can WG interview?
- Can this evolve? Or set up immediately
- Could be imposed, if are not careful
- Greenway throughout county
- Zoning change/opposition
- Home rule/need consensus

Creekwalk – City Syr & Engineering – plan project around meanders

DRAFT

Onondaga Creek Working Group Field Trip Ideas for 2005:

Please select and rank the three field trips that you would prefer to attend during upcoming Working Group meetings. Assign a number from 1-3 to each field trip, where:

1 = Least interesting 2 = Somewhat interesting 3 = Most interesting

Field Trip Focus	Suggested Place(s)	Rank Three from 1-3
The Water's Edge: The Importance and Functions of Riparian Areas	Furnace Brook/Elmwood Park	
The State of Onondaga Creek's Fish Communities	Tributaries of West Branch of Onondaga Creek classified as trout streams	
Mudboils Up Close	Mudboils remediation site in Tully valley, <i>could be combined with</i> Wetland Field Trip	
The Importance and Functions of Wetlands	Accessible wetland along Onondaga Creek or tributaries, could be combined with Mudboil Field Trip	
Methods of Physical Restoration: Addressing Erosion Issues and Streambank Stability	Onondaga County Soil and Water Conservation District's streambank stabilization project sites in Tully valley	
Opportunities for Landscape Design/Public Access	Kirk Park, Lower Onondaga Park and proposed Botanical Garden design area	
Syracuse Creekwalk Design- Learn about the Extension from Franklin to Armory Square	Franklin Square Creek Walk, could be combined with Urban Storm Drainage Field Trip	
Where the Creek and the City Meet: Planning Urban Storm Drainage and Access Your Suggestion:	Downtown Syracuse, north of Armory Square, could be combined with Creekwalk Field Trip	

Onondaga Creek Working Group Field Trip Ideas for 2005:

Ranking Summary:

1st Place: Wetlands
2nd Place: Landscape Design/Public Access
3rd Place: Fish Communities

Field Trip Focus	Suggested Place(s)	Total Points	Rankings
The Water's Edge: The Importance and Functions of Riparian Areas	Furnace Brook/Elmwood Park	14	5 th place
The State of Onondaga Creek's Fish Communities	Tributaries of West Branch of Onondaga Creek classified as trout streams	19	3 rd place
Mudboils Up Close	Mudboils remediation site in Tully valley, could be combined with Wetland Field Trip	13	Tie for 6 th place
The Importance and Functions of Wetlands	Accessible wetland along Onondaga Creek or tributaries, <i>could be</i> <i>combined with Mudboil Field Trip</i>	26	1 st place
Methods of Physical Restoration: Addressing Erosion Issues and Streambank Stability	Onondaga County Soil and Water Conservation District's streambank stabilization project sites in Tully valley	16	4 th place
Opportunities for Landscape Design/Public Access	Kirk Park, Lower Onondaga Park and proposed Botanical Garden design area	21	2 nd place
Syracuse Creekwalk Design- Learn about the Extension from Franklin to Armory Square	Franklin Square Creek Walk, could be combined with Urban Storm Drainage Field Trip	13	Tie for 6 th place
Where the Creek and the City Meet: Planning Urban Storm Drainage and Access	Downtown Syracuse, north of Armory Square, could be combined with Creekwalk Field Trip	13	Tie for 6 th place
Your Suggestion:	-Canoe trip (2 write-ins) -Created wetlands, detention basins for stormwater control, flood control (2 write-ins) -Midland facility trip -Stormwater trip -METRO trip -Recreation/restoration examples		

Onondaga Creek Field Trip, May 4th, 2005, 3:00pm – 6:15pm

Route/Stops	Time	Route/Parking for Bus	Estimated Time
	Spent		
Inner Harbor to Gatehouse Road	30 min	Interstate 81 to LaFayette Exit (Rt. 20) to south on Tully Farms Road to Gatehouse Rd and Rt. 80	3:00pm – 3:30pm
Stop 1: Gatehouse Road	15 min	Gravel paved corner of Rt. 80 and Gatehouse Rd.	3:30pm – 3:45pm
Gatehouse to Dam at Onondaga Nation	25 min	North on Tully Farms Road	3:45pm – 4:10pm
Stop 2: Dam at Onondaga Nation	15 min	South side of dam	4:10pm – 4:25pm
Dam to Dorwin Ave	10 min	11A to South Salina, left on Dorwin Ave.	4:25pm – 4:35pm
Stop 3 : Kelly Brothers Park – <i>restrooms/pickup stop</i>	15 min	Parking along side road into park	4:35pm – 4:50pm
Dorwin Ave to Lee's Feed on Milburn (Pause)	15 min	Dorwin to South Salina, left on Seneca turnpike, right on Milburn	4:50pm – 5:05pm
Milburn to Kirk Park	10 min	Continue on Milburn to north on Valley Drive, right turn on Atlantic, left on Raymond to north on Onondaga Creek Blvd. to Kirk Park Drive to Kirk Park	5:05pm – 5:15pm
Stop 4 : Kirk Park Footbridge – <i>pickup stop</i>	15 min	Parking alongside road across from footbridge	5:15pm – 5:30pm
Kirk Park to Midland RTF construction site (Pause)	10 min	Kirk Park to left on South Ave, right on Centennial, veer to the right, right on Rich St, to West Castle, to left on Midland Ave	5:30pm – 5:40pm
From Midland construction site, to Walton (drive by Creek crossing on Walton)	15 min	North on Midland to right on W. Onondaga to left on West St to right on Fayette to left on Walton, circle around MOST/Armory to Franklin	5:40pm – 5:55pm
From Walton to Inner Harbor	5 min	North on Franklin, under 690, to left on Evans to right on Maltbie, to right on Spencer to left on Solar to left on Kirkpatrick to Inner Harbor	5:55pm – 6:00pm
Stop 5: Inner Harbor	15 min	Parking lot	6:00pm – 6:15pm

(Bus returns to Kirk Park and Dorwin Avenue to drop off pickups, 6:15pm – 6:30pm)

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Constructed Treatment Wetlands

Natural wetland systems have often been described as the "earth's kidneys" because they filter pollutants from water that flows through on its way to receiving lakes, streams and oceans. Because these systems can improve water quality, engineers and scientists construct systems that replicate the functions of natural wetlands. Constructed wetlands are treatment systems that use natural processes involving wetland vegetation, soils, and their associated microbial assemblages to improve water quality.



How do treatment wetlands work?

atural wetlands perform many functions that are beneficial to both humans and wildlife. One of their most important functions is water filtration. As water flows through a wetland, it slows down and many of the suspended solids become trapped by vegetation and settle out. Other pollutants are transformed to less soluble forms taken up by plants or become inactive. Wetland plants also foster the necessary conditions for microorganisms to live there. Through a series of complex processes, these microrganisms also transform and remove pollutants from the water.

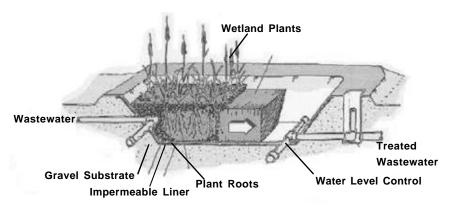
Nutrients, such as nitrogen and phosphorous, are deposited into wetlands from stormwater runoff, from areas where fertilizers or manure have been applied and from leaking septic fields. These excess nutrients are often absorbed by wetland soils and taken up by plants and microorganisms.

For example, wetland microbes can convert organic nitrogen into useable, inorganic forms (NO_3 and NH_4) that are necessary for plant growth and into gasses that escape to the atmosphere.

Why build them?

Wetlands are some of the most biologically diverse and productive natural ecosystems in the world. While not all constructed wetlands replicate natural ones, it makes sense to construct wetlands that improve water quality and support wildlife habitat. Constructed wetlands can also be a cost-effective and technically feasible approach to treating wastewater. Wetlands are often less expensive to build than traditional wastewater treatment options, have low operating and maintenance expenses and can handle fluctuating water levels. Additionally, they are aesthetically pleasing and can reduce or eliminate odors associated with wastewater.

A Popular Idea Designing and building wetlands to treat wastewater is not a new concept. As many as 5,000 constructed wetlands have been built in Europe and about 1,000 are currently in operation in the United States. Constructed treatment wetlands, in some cases involving the maintenance of important wetland habitat, have become particularly popular in the Southwest, where the arid climate makes the wetland habitat supported by these projects an especially precious resource.



Wetland plants and associated microorganisms treat wastewater as it flows through a constructed wetland system.

How are they built?

Constructed wetlands are generally built on uplands and outside floodplains or floodways in order to avoid damage to natural wetlands and other aquatic resources. Wetlands are frequently constructed by excavating, backfilling, grading, diking and installing water control structures to establish desired hydraulic flow patterns. If the site has highly permeable soils, an impervious, compacted clay liner is usually installed and the original soil placed over the liner. Wetland vegetation is then planted or allowed to establish naturally.

Design and Planning Considerations:

If planned and maintained properly, treatment wetlands can provide wastewater treatment and also promote water reuse, wildlife habitat, and public use benefits. Potentially harmful environmental impacts, such as the alteration of natural hydrology, introduction of invasive species and the disruption of natural plant and animal communities can be avoided by following proper planning, design, construction and operating techniques. The following guidelines can help ensure a successful project:

- Construct treatment wetlands, as a rule, on uplands and outside floodplains in order to avoid damage to natural wetlands and other aquatic resources, unless pretreated effluent can be used to restore degraded systems.
- Consider the role of treatment wetlands within the watershed (e.g., potential water quality impacts, surrounding land uses and relation to local wildlife corridors).
- Closely examine site-specific factors, such as soil suitability, hydrology, vegetation, and presence of endangered species or critical habitat, when determining an appropriate location for the project in order to avoid unintended consequences, such as bioaccumulation or destruction of critical habitat.
- Use water control measures that will allow easy response to changes in water quantity, quality, depth and flow.
- Create and follow a long-term management plan that includes regular inspections, monitoring and maintenance.



This hog operation in Taylor County, lowa, uses a wetland system constructed on a series of hillside terraces to filter and purify wastewater. Water quality tests indicated that the effluent from the treatment wetland was cleaner than that required for wastewater treatment plants.

Tres Rios Project Improves Water Quality

In 1990, city managers in Phoenix, Arizona, needed to improve the performance of their 91st Avenue Wastewater Treatment Plant to meet new water quality standards issued by the Arizona Department of Environmental Quality. After learning that upgrading their treatment plant might cost as much as \$635 million, the managers started to look for a more cost-effective way to polish the treatment plant's wastewater discharge into the Salt River. A preliminary study suggested that the city consider a constructed wetland system that would polish effluent, while supporting high-quality wetland habitat for migratory waterfowl and shorebirds, including endangered species, and protecting downstream residents from flooding at a lower cost than retrofitting their existing treatment plant. As a result, the 12-acre Tres Rios Demonstration Project began in 1993 with assistance from the U.S. Army Corps of Engineers, the Bureau of Reclamation and EPA's Environmental Technology Initiative and now receives about two million gallons of effluent per day. The demonstration project was so successful that the city and the Bureau of Reclamation asked EPA for help in expanding the project to a full-scale, 800-acre project. For more information on the Tres Rios Constructed Wetlands Project, visit, http://phoenix.gov/TRESRIOS/

> EPA 843-F-03-013 Office of Water August 2004

Wetland Resources

Treatment Wetlands (2004), Robert H. Kadlec and Robert L. Knight, Lewis Publishers, Boca Raton, Fl.

Guiding Principles for Constructed Treatment Wetlands: Providing for Water Quality and Wildlife Habitat (2000), United States Environmental Protection Agency, EPA 843-B-00-003. Available online at www.epa.gov/owow/wetlands/constructed/guide.html

Constructed Wetlands Handbooks (Volumes 1-5): A Guide to Creating Wetlands for Agricultural Wastewater, Domestic Wastewater, Coal Mine Drainage and Stormwater in the Mid-Atlantic Region (1993-2000), United States Environmental Protection Agency. Available online at www.epa.gov/owow/wetlands/pdf/hand.pdf

Handbook for Restoring Tidal Wetlands (2000), Joy B. Zedler, CRC Press, Boca Raton, FL.

The Post-Standard

'Syracuse's Yellowstone' to mark 75 years

September 26, 2002

<u>Dick Case</u> Neighborhoods

Larry Rutledge came to Syracuse in 1987 from a big tract of land in Parish, where he had a trout stream, woodland and a place to ski cross country.

"When I looked for a place to live, I never thought I'd find something like my country place in the city," he's saying the other day as we walk through a corner of southwest Syracuse. "I found a house with access to a trout stream, woodland and a place to put on my cross-country skis. I couldn't believe it."

We're touring the 65 acres along Furnace Brook that we call Elmwood Park and Larry calls home. His house is on Elmwood Avenue, and his heart's in this piece of urban wilderness that's been a city park for 75 years.

Saturday, Larry and his colleagues in the Elmwood Park Neighbors Association invite us to revisit or discover their favorite city landscape and enjoy the views.

"Celebrate Elmwood," from noon to 4 p.m., will observe the rededication of the park and completion of \$600,000 worth of improvements over the last year. Larry, who's a property manager for Transitional Living Services, can't stop talking about it.

"We want to celebrate not just Elmwood, but all the city parks," Larry says, standing at the dam next to the old stone mill that's been here since the 1850s. "We feel great about the resurgence in the parks by our city officials and by the people who use them."

The main work we notice in Elmwood is the way the streambed has been dredged and repointed. Some of the features created by WPA crews during the Great Depression were covered with silt and loose stones.

A pathway created by those same anonymous workers has been rediscovered on the park's northern side. Across the way, volunteers are clearing brush to reveal more of the park's nearly 70-year-old stonework.

Larry points to a wall of boulders that curves around the edge of a slope: "That was one of the things that enchanted me about the park when I first moved here."

Neighbors called this "The Gully" years ago. It was carved by an ancient brook at the time of the glaciers. Early settlers harnessed the water to power mills along the stream. The first mill, on the same lot as the present landmark, made cannonballs for the War of 1812.

Later, this was a private amusement area - once called "Dreamland" - before Elmwood village came into the city and the land was bought for a park.

That was in 1926, when the city bonded to buy "Dreamland" and Sunstruck Hill near Teall Avenue, now Sunnycrest Park. A newspaper writer toured the gully and pronounced it "Syracuse's Yellowstone."

"Yellowstain" may have been a better name in recent years. I remind Larry Rutledge about a walk in Elmwood seven years ago, when a neglected park cried out for help. Yes, things have changed, thanks to a commitment by city officials and prodding by the neighborhood association, which Larry leads as president.

"Until the AmeriCorps crews came in here, you'd never seen anyone working in the park. There was only one garbage can," he recalls. "Those volunteers were a big help in cleaning up and encouraging us to organize. Those kids really impressed us."

Larry says the association also appreciated encouragement back then from Lyle Halbert, then the city parks planning director.

"The parks people asked us to be their eyes and ears," he explains. "They've also involved us in the planning process."

We check out the new Elmwood playground, finished this spring. "The kids love it. We really need this," Larry says.

The brook laps by us as we walk. A county work crew picks up trash across the stream. We hear the birds, and kids on the Corcoran High School playing fields at the end of the park. There's a couple walking a dog.

"There are six neighbors who come into the park with our dogs almost every day with a plastic bag to pick up trash," Larry says. "A neighborhood Cub Scout pack (48) helped us clean trash out of the dam. Weekends, some of us are clearing out the brush so you can see the stone stairways on the south side.

"You used to be able to sit up there and look out at the park. You know, they had flower beds in there."

Last summer, crews sprayed a mixture of seeds and fertilizer on the park's north slope, hoping to control erosion that fed silt into the stream. Larry isn't sure the new cover took completely. Some repointed stones in the steam have tumbled back into the water.

We remind ourselves of nature's ways. Those old WPA workers made their park out of a raw stream that still resists taming.

Larry had some good news about the old mill, which we may have thought was part of the park because of the location. Actually, it was private until 2000, when Elmwood Fish and Game Club sold the landmark to the city. They'd had the mill and one-acre lot for 57 years.

Besides keeping an eye, and an ear, on the park, Larry's association also keeps in touch with the Elmwood neighborhood. Recently, members worked with the city and Home Headquarters on demolishing two vacant houses on Elmwood Avenue. The lots will be added to the park.

The work had an unexpected benefit: Workers found an old millstone under a porch of one of the homes. "It's to be part of the nature center," Larry says.

We're sitting at the edge of the dam now. I ask Larry about the importance of park friends.

"We realize we can't have a healthy park unless the neighborhood is healthy," he explains.

Just now, Elmwood, bathed in autumn light, looks decent.

"I think it's more neighborly now," according to Larry. "It feels friendly and safe. I think that encourages more people to use the park, and use it respectfully."

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Onondaga Creek Working Group, March 7, 2007 Biology/Ecology Option Flip Chart Text

Decide what specific goals are wanted by stream stretch for ecology

Examine /work on changing flood control maintenance prescriptions in city

Think of long term restoration possibilities/benefits, increase linkages in tributaries/main stem and beyond

Bob Haley's idea: look at each segment of stream and then by looking at projects; can reconsider/evaluate. Find ways to use the creek that haven't been used before. Has to be flexible. Kathy S. – keep minds open and think of opportunities. Bob – we changed rules on creek which is why it shows different uses.

Drainage system for wetland areas

Recolonization of bare plots: natural or managed methods. Possible areas: Nedrow to Ballantyne (flood control concern) and Franklin Square. Both main channel and tribs. Use either herbaceous (shrubs, no maintenance) or tree plantings. Concern: trees breaking up and washing down the stream (which is the natural process).

Restoring/reconnecting small spring-fed tributaries. Good trout spawning and rearing habitat. Can cool down main reach.

Eel restoration

Meadowbrook style stonework (or multiple kinds of materials) in city can allow for vegetation better than concrete; slows water

Make decisions about how much space to give creek in any given reach. This is a starting point. Affects function and value – less space, less ecology function. Only aesthetics.

Make decisions about land use, utilities, in creek corridor – can modifications be made? Can they be worked around?

Eco parks in city – access and filtration.

Bob H- goals by stretch – keeping a list of desired goals and decide where we can meet by stretch. Vegetation, water quality, natural habitat for fish, social sense of different human access opportunities

Persuade old-school engineers to be flexible with management methods

More diverse canopy increases wildlife/bird diversity: "build it and they will come"

Overarching goal: cold water fish habitat restoration and sub-goals for stretches where it is not possible. Don't inhibit pass through – don't make it worse. Doesn't impede either upstream or down.

'Cherry pick' and area that is easy to do and build momentum. But don't forget that timing is really important – work with impending projects.

Onondaga Creek Conceptual Revitalization Plan: Draft Plan Outline, Version 8, February 3, 2008

Chapter #	Chapter	Chapter or Section Description	Maps	Corresponding Appendix
	Executive Summary	A public-friendly condensation of each of the following chapters into a few paragraphs each		
	Preface	Written by a prominent person – prefer someone familiar with project		
	Acknowledgements	2-3 pages – everyone involved		
	Table of Contents	List of chapters, tables, figures and appendices; TOC should reflect entire document, including appendices on CD		
	Forward	Description of what this document is		
1.	Introduction	Answers who, what, where, when, why		
1.1	What is the OCRP?			
1.1.1	Project area	Onondaga Creek watershed and more specifically, the creek corridor, this is simply a map	Regional context map, watershed map	
1.1.2	Need for a plan	Cite existing municipal plans, need for a plan specific to Onondaga Creek	Municipal boundaries map	
1.1.3	Philosophy of revitalization	Reclaiming the creek as a natural system over the long term; protection of public investment/corridor ownership		
1.1.4	Project goal	To create a conceptual revitalization plan based on community input and technical information		Original project workplan
1.1.5	Project sponsorship and funding	OLP and EPA		OLP Projects minutes
1.1.6	Project actors	Project Team and Working Group Lists for each		
1.1.7	Project Team and Working Group's mandate and authority			
1.1.8	Public participation	Role and rationale for public input		
1.2	Paradigm shift: nation-wide trend in waterway revitalization plans	Brief summary of trends, include reference to EPA watershed approach, check with Sam on CWA trends		Case Studies Document
2.	Physical setting and historical condition of Onondaga Creek	Illustrate what happened, create a timeline	Land use change maps Historic creek channel maps	
3.	Summary of State of Onondaga Creek Intro paragraph	Existing condition: describe where we currently are		Fact Sheets and Technical Chapter
3.1	Hydrology	Describe flow pattern throughout year. Flashy urban hydrograph, impervious cover.		Hydrology Fact Sheet
3.2	Water quality	Note crumbling urban sewer problem, bacteria contamination Areas of high temperature in summer.		Water Quality Fact Sheets

Chapter #	Chapter	Chapter or Section Description	Maps	Corresponding Appendix
3.3	Access	Restricted throughout watershed. Safety considerations and city liability need to be addressed.		Access Fact Sheet
3.4	Biota	Fish assemblages, vulnerable populations of brook trout in headwater streams, temperature & contamination.	Fish and habitat survey maps	Fish and Habitat Fact Sheets
3.5	Flood control	Flood control structures. Legacy of channelization compromising natural function.		Flood Control Fact Sheet
3.6	Mudboils	Need for continual maintenance and monitoring.	Features of interest map	Mudboils Fact Sheet
3.7	Land use/historic sites	Note development on creek banks in city, lack of buffer.	Land use/land cover map; historic sites maps	Land Use Fact Sheet
4.	Revitalization Plan Development	Methods summary needs to flow into recommendations		
4.1	Methods summary	Diagrams: Working Group, public input, public education activities		Details in appendix, including description of what we did and professional justifications/rationale
4.2	Public Input Summary	Aggregate goals and concerns		Solicitation of Issues and Goals report: ESF survey, public input detailed findings, written public input
4.3	Working Group goals			How we got to WG goals, through drivers process
4.4	Revitalization map series	Includes a set of maps with just symbols; and a set of maps of project bundles, include narrative of how maps were developed, maps will be 11x17 size, folded	Map series	Detail of revitalization map development
4.5	Incorporation of public and WG input into plan	Process diagram that covers every step and key to appendix		Meeting minutes as archival material
5.	Recommendations Intro paragraph			
5.1	Watershed recommendations	Use goals as categories, use WG goals/maps as a starting point		BMPs List; Youth Corps Education Model
5.2	What has to be accomplished to achieve goals matrix	This can include biotic, jurisdictional and policy issues		
5.3	Site specific recommendations	Description of bundles in urban, transition and rural sections		Bundles list
5.3.1	Top preference project bundles	Add an abbreviated goals analysis matrix for the top preference project bundles		Working Group preference results
5.3.2	Remaining bundles			

03 Feb 08

Chapter #	Chapter	Chapter or Section Description	Maps	Corresponding Appendix
5.4	Suggested timelines on top preference project bundles and watershed recommendations	Order of things to be accomplished		
6.	Other local initiatives			
6.1	Ongoing initiatives and planning opportunities for synergism with revitalization plan			Ongoing projects list
7.	Constraints and Data Gaps Identification	As examples: channelization is a constraint to renaturalization. This chapter includes legal/regulatory constraints.		
8.	Implementation Strategies			
8.1.	Opportunities in existing land use patterns Intro Paragraph			
8.1.1	Rural	Conservation easements and other land access mechanisms	Rural open space map	
8.1.2	Urban	Open space, parkland and vacant properties identification	Urban open space map	
8.2	Establishment of design and sustainability standards and monitoring parameters			
8.3	Regulatory and policy recommendations: statement of good examples	Watershed planning examples Intermunicipal cooperation examples		
8.4	Funding and resources	Determine recommendations first. Should include human/intellectual/organizational/physical resources		
8.4.1	Potential funding streams	• • • • • • • • • • • • • • • • • • • •		
8.4.2	Funding stream synergies			
8.5	Implementation coordination; formation of partnerships	Include all organizations; point out need for brokering; identify which organizations would do a particular task best; explain a couple of different models here.		
8.6	Continuation of community participation and collaboration			
8.7	Qualitative assessment of costs vs. benefits for top recommendations	This is a statement of trends, using South Platte as an example. Increase property values, increase recreational tourism, increased quality of life, increase health and safety, environmental benefits, etc.		Refer to Case Studies document
9.	Immediate Next Steps	· ·		
9.1	Process steps	Includes planning process steps		
9.2	Recommended pilot projects	List of 3-4 immediate projects that transform conceptual plan into workplans, emphasize community coordination and demonstration projects (living fence suggested)		

3 of 3



<u>Developing the Onondaga Creek Revitalization Plan</u> 2007 Working Group meetings

Working Group meeting dates 2007:	Topic	People to invite
January 3	 Sort out major ecological, economic and social drivers for revitalization, including community input Identify major stream sections for the plan 	
February 7	Hydrology – develop a menu of revitalization options that involve creek hydrology	Ginny Collins, SUNY ESF; Ted Endreny, SUNY ESF; Bill Kappel, USGS; Mark Schaub, OCSWCD; Carl Schwartz, USFWS
March 7	Ecology/Biology – develop a menu of revitalization options that involve creek ecosystem	Jake Bendix, SU; Catherine Landis, SUNY ESF; Dave Lemmon, NYS DEC; Don Leopold, SUNY ESF; Karin Limburg, SUNY ESF; Neil Ringler, SUNY ESF;
April 4	Land use, City design concepts/plans, Recreation, Open space, Safety and Access – develop a menu of revitalization options	Emanuel Carter, SUNY ESF; Diane Carlton, NYS DEC Julia Czerniak, SU; Myrna Hall, SUNY ESF; Cathy Keenan, NRCS; Kathy Stribley, SUNY ESF;
May 2 Additional date	Design charrette – Working Group splits into 4 design teams	Invite all of the above to return to participate on design teams
June 6	Identify key pieces of conceptual planIdentify research gaps	
July 11	 Revisit stakeholder organization input Identify funding possibilities 	
August, September	Working Group reviews draft plan, prepare for release to Onondaga Lake Partnership and public	

Onondaga Creek Working Group Design Treatments/Public Access Field Trip, October 4th, 2005, 3:00pm – 6:00pm AGENDA

Meeting location: O'Donnell Parking Lot between Walton and Fayette Streets, west of Onondaga Creek in Armory Square.

1. Administrative Items:

- A. Minutes approval for September 7, 2005 meeting
- B. Schedule next Working Group Meeting: Wednesday, November 2nd, 5:30pm, Betts Branch Library, 4862 S. Salina Street

Meeting Format: Field Trip Review and Discussion, Please bring your worksheet.

- C. Items for Onondaga Creek Works
- D. Upcoming events (listed below)

Upcoming Events List

Date	Event	Contact Person
October 14	Friends of Onondaga Creek Meeting	Ollie Clubb, 479-5983
5:30 - 7:30pm	Zen Center, 266 W. Seneca Turnpike	5111 2 51 3 656, 117 5 756

2. Field Trip Schedule

Route/Stops	Time	Route/Parking for Bus	Estimated Time
	Spent		
Stop 1 and meeting location: Urban	30 Min	O'Donnell Parking Lot between	3:00 – 3:30pm
Stormwater Management Design:		Walton and Fayette Streets, west of	
O'Donnell Parking Lot in Armory		Onondaga Creek in Armory Square	
Square			
Armory Square to Lower Onondaga	10 Min	Fayette St. to right on Clinton St.	3:30 – 3:40pm
Park		Right on W. Onondaga to Onondaga	
		Ave. to Centennial Drive.	
Stop 2: Onondaga Botanical Garden	30 Min	Parallel park on Centennial Drive	3:40 – 4:10pm
and Arboretum Design:			
Lower Onondaga Park			
Lower Onondaga Park to Tully Farms	40 Min	Right on South Ave to left on Valley	4:10 – 4:50pm
Road		Drive. Continue on Rt. 80 to left on	
		Rt. 20, Rt. 20 to Tully Farms Road.	
Stop 3: Using Willows in the Rural	30 Min	Tully Farms Road, between Otisco	4:50 – 5:20pm
Best Management Practices Project		and Solvay Roads	
Sponsored by the Onondaga Lake			
Partnership			
Return to Armory Square	30 min	Rt. 80 to north on I-81 to west on Rt.	5:20 – 5:50pm
		690. Exit at West Street. Left on	
		Fayette to parking lot.	

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Working Group Design Charrette, May 2, 2007

Urban Team - Ballantyne to Inner Harbor: Recommendations and Symbols Used

Ed notes that the urban team color coded their dots to correspond with the 3 types of cards.

H=Hydrology Cards(green dots); B=Biology Cards (pink dots); LU=Land Use/Access/Recreation cards (orange dots)

Street Brackets	East Bank or	Symbol card and Created cards/drawings
	West Bank	
Pacific to Medora Place	West	B= Trout/Salmon/Eel Habitat Restoration; Removal of Invasive Species; Restore
		Native Floodplain Species; Replant Native Vegetation. Create/Manage/Restore
		Wetland; Riparian Shade Trees;
		H=Create Stream Meander; Flood and Stormwater Retention Basin; Compound
		Creek; Compound Channel
		LU=Scenic Use Area; Bio Preserve; Natural/Interpretive Trail; Trail; Canoe/Kayak
		Access; Fishing Access
Pacific to W Matson Ave	East	LU=Multi Use Park; Pedestrian Bridge
West Ostrander to West Brighton	East	LU =Signage; Creation of Public Park Land; trail marks begin where Vale Street
		intersects with Kirk Park Drive and continue north on east bank.
West Brighton to West Colvin	West	B= Manage/Restore Upland;
		H=Stream Daylighting of Furnace Brook (dash marks from base of Elmwood Park to
		creek just north of Elmhurst);
		LU=Alternative Hard Surfaces for Streambank; Natural/Interpretive Trail; Remove
		Overgrowth; Arboretum is written in public creek-side parcel between West Brighton
		and Elmhurst
West Brighton to West Colvin	East	B=Trout/Eel/Salmon Habitat Restoration;
		H=Bridge/Culvert Modification (arrow and brackets on Elmhurst Avenue crossing);
		LU=Urban Ecopark; Urban Creek Preserve; trail marks continue north
West Colvin to West Kennedy Street	West	H=Flood and Stormwater Retention Basin;
		B=C/M/R Wetland; Trout/Eel/Salmon Habitat Restoration; Restore Native
		Floodplain Species; Replant Native Vegetation; Removal of Invasive Species;
		Riparian Shade Trees;
		LU=Remove Fencing; Botanical Garden written across west side of Kirk Park; and
		Upper and Lower Onondaga Park
West Colvin to West Kennedy Street	East	H=Create Stream Meander (s-line drawn thru Kirk Park to South Ave); Create
		Floodplain and De-Channelize Stream; Reconnect Wetlands with Creek;
		LU=Urban Ecopark (at South Ave &West Kennedy); trail marks terminate at South
***		Ave
West Kennedy to West Castle	East	H=Flood and Stormwater Retention Basin; Compound Channel;

		LU=Multiple Use Park	
Hovey to Bellevue	West	B=C/M/R Wetland; Removal of Invasive Species; Restore Native Floodplain	
		Species; Replant Native Vegetation	
Blaine to Tallman	East	LU= Trail; Pedestrian Bridge	
Bellevue to Tallman	West	LU=Natural Fence/Barrier (next to private parcels)	
Tallman to West Onondaga	West	B=Removal of Invasive Species; Trout/Eel/Salmon Habitat Restoration; Removal of	
		Invasive Species	
		H=Bridge/Culvert Modification, marked at West Adams and creek	
Tallman to East Onondaga	East	B=Alternative Hard Surfaces for Streambank; Manage/Restore Upland; Replant	
		Native Vegetation	
West Onondaga to Dickerson	West	H=Bridge/Culvert Modification, marked at West Onondaga, Gifford, and Dickerson	
		street crossings over creek	
Dickerson to Jefferson	East	H=Create Floodplain and De-channelize Stream	
		LU= Urban Ecopark (STP written in north corner Trolley Lot)	
Fabius to W Jefferson	West	LU= Pedestrian Bridges drawn in Fabius to Trolley Lot and Tully Street to Trolley	
		Lot	
W Jefferson to Erie	East	LU=Cultural/Historic Site; Remove Overgrowth	
Jefferson to Erie	West	LU=Multiple Use Park (at Walton)	
		H=Stream Dayligting (dashed line drawn from O'Donnel lot b/w Fayette &	
		Washington to just past Erie Blvd)	
Erie to West Genesee	East	LU=Creation of Public Park Land; Created card: "See West Street Corridor Master	
		Plan (on Syracuse Then and Now.org)" These may apply to west bank.	
Erie to West Genesee	West	LU=Multiple Use Park; Trail	
		H=Create Floodplain and De-channelize Stream	
		Dashed lines and arrows that may apply to Creation of Park Land card.	
West Genesee to Plum Street	East	LU= "Improve Primary Pedestrian Corridor, Old Fire Station" arrows drawn along	
		N. Franklin, Wallace Street, Butternut/Franklin/690 crossing, dashed lines along	
		both banks of creek from W. Gen to Evans St.; Improve Lighting (690/West Street	
		creek crossing); Cultural/Historic Site (at water tower warehouse)	
West Genesee to Plum Street	West	Bridge/Culvert Modification (at West Gen and West St)	
Plum Street to Kirkpatrick	East	Remove Overgrowth (near Post Office); Roundabout at West Court and Solar	
Plum Street to Kirkpatrick	West	Roundabouts on Kirkpatrick at Van Ren and N Geddes	
Inner Harbor to Onondaga Lake	Both	"Creek-based development concept?" and Removal of Invasive Species (aka	
		Destiny) with dashed lines encompassing Inner Harbor area	

Working Group Design Charrette, May 2, 2007 Rural Team – Map Sections completed May 2 (listed below): Recommendations and Symbols Used

H=Hydrology Cards; B=Biology Cards; LU=Land Use/Access/Recreation cards

Map Section: Vesper to Tully: Main Branch – Card Placement (nearby roads or parcels)	Symbol card and Created cards/drawings
Route 80 from Bailey Road to Octagon Road	LU =Headwaters Sign
Route 80 from Octagon Road to Downing Road	H = Implement Rural BMPs B = Plant Riparian Shade Trees
Route 80 from Downing Road to Mechanic Street	H = Create Stream Meander, Implement Rural BMPs B = Replant Native Vegetation, Trout/Eel/Salmon Habitat Restoration, Restore Native Floodplain Species
Woodmancy Rd and Route 80 Residential Area	H =Implement Rural Residential BMPs
Woodmancy Rd (~ ½ mile North of Route 80)	LU = Fishing Access (Honeywell Land)
Map Section: Otisco to LaFayette (Fall Creek) – Card Placement	Symbol card and Created cards/drawings
Bailey Rd and Route 80 Junction	LU= Headwaters Signage
Otisco Road from Route 80 to Barker Road	H= Rural BMP
Cook Road from Route 80 to Barker Road	H= Rural BMP
Otisco Road at Lafayette/Otisco Town Border	LU= Information from USGS: Topographic and Geological (What does this mean?)
Map Section: Emerson Creek (Emerson Gulf) - Card Placement	Symbol card and Created cards/drawings
Bishop Road and Dutch Hill Road Junction	LU = Headwaters Signage
Land Area Between Tully Farms Road and Route 11A	H= Rural BMP
intersected by Emerson Creek (Honeywell Land)	B =Replant Native Vegetation
	LU= Fishing Access
Land Area Between Tully Farms Road and Woodmancy Road intersected by Emerson Creek	LU= Biopreserve, Investigate Option of Reserve (Honeywell Land)

Working Group Design Charrette, May 2, 2007

Mixed Segments Team - Onondaga Nation to Ballantyne: Recommendations and Symbols Used

Map section completed on May 2: North border of Onondaga Nation to Ballantyne Road

H=Hydrology Cards; B=Biology Cards; LU=Land Use/Access/Recreation cards

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		H=Create Floodplane, Dechannelize Stream, and Compound Channel, Stream Meander LU= "Demonstration Site," Pools (more accessible Meachem/Clary Pool?), Trail (along both sides), Natural/Interpretive Trail, Signage (at creek/road intersections)
Fiscoe Ave to East Seneca Tpk	West	B="Continuous Upland Watershed Biopreserve" (forever wild?), Removal of Invasive Species (Webster Pond), Manage/Restore Pond Edge, Removal of Invasive Species (buckthorn), Bio Preserve (west of Hopper Rd.), Manage/Restore Upland (preserve land west of Hopper Rd.) H= Stream Daylighting (Kimber Brook, blue line) LU=Natural Fence/Barrier (where needed along whole stretch), Remove Fencing (new strategy of blocking private property and school zones instead of blocking people from creek), Canoe/Kayak Access Point (at East Seneca Tpk), Scenic Use Area (West of Hopper Rd.)
East Seneca Tpk to Ballentyne Rd	East	B=Restore Floodplain Species, Create/Manage/Restore Wetland (natural pools), Bio Preserve (east of S Salina), Create/Restore Upland Area (east of S Salina) H= Stream Daylighting (Cityline Brook, blue line), Create Stream Meander (continuation), Reconnect Lost Tributaries (Cityline Brook), Re-connect Wetlands with Creek (?) LU= Interpretive Trail (along old creekbed, blue line), Corridors (to reconnect neighborhoods to creek), Signage (identifying tributaries), Cultural/Historic Site (WPA),
East Seneca Tpk to Ballentyne Rd	West	B=Replant Native Vegetation, Bio-Preserve (west of Hopper, continued) H=Compound Channel, Stream Daylighting (Kimber), Reconnect Lost Tributaries (Kimber), Stream Extension (from Hopper, Blue line labeled "Hopper") LU=Trail, Natural/Interpretive Trail, Fishing Access (extension of Van Duyn elementary park space), Signage (extension of Van Duyn), Urban Ecopark (extension of Van Duyn), Connect neighborhoods east of W Seneca Tpk to creek.

To: Onondaga Creek Working Group

From: Meredith Perreault

Date: July 5, 2006

Re: Onondaga Creek Community Forum Data

Hi Onondaga Creek Working Group – I hope you are enjoying this beautiful summer.

I've enclosed reports from the first four Onondaga Creek Community Forums. At last, we have data that will help shape the Onondaga Creek Revitalization Plan. Try to look over the reports and **please bring them to the July 12 Working Group meeting**. If you don't have a chance to read beforehand that's OK - we will look at the reports at the meeting. Our goal is to understand what the public is telling us through the input gathered at the forums – what do we think are the major goals, dreams, and concerns for Onondaga Creek?

Here's a bit of explanation about the three reports enclosed. I tried to save paper - all of the documents are two-sided, and the print is small (!). The first report, "Goals, Concerns and Questions from Input Cards", is a compilation of the written responses received at the forums. The data is formatted in rows and columns – read across the row to see one person's written goals, concerns and questions. Or, to read just goals, read down the "Goals" column. To preserve confidentiality, no names have been used. Keep in mind all of the data is entered exactly as it is received.

Goals and concerns listed on flip charts comprise the two remaining reports. The flip charts were used to record goals and concerns verbally expressed at the forums. All of the data is grouped by forum. As a refresher, here were the forum dates:

April 19, 2006 Bob Cecile Community Center, Syracuse

May 3, 2006 City Hall Commons, Syracuse May 18, 2006 LaFayette Community Center

May 25, 2006 South Presbyterian Church, Syracuse

If you have any questions, feel free to call (472-2150 x22). Otherwise, see you Wednesday, July 12th, 5:30pm, at the Faith Heritage School library, 3740 Midland Avenue, Syracuse. Good news, I understand the school's library is air-conditioned! -Meredith Perreault

Projects in/near the Onondaga Creek corridor:	Value (funding source)	Time- line	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
Syracuse Inner Harbor Redevelopment	\$ 1,500,000.00						
On-going redevelopment of Inner Harbor into	for City Planning						
waterfront attraction, locally managed by City of	Study						
Syracuse's Lakefront Development Corporation. Inner	(Federal						
Harbor is owned by New York state.	Highway/TIP)	Danima					
2. Connective Corridor	\$ 6,700,000.00	Design					
Syracuse University (SU) initiative to link SU with	(Congressman	Fall 2007,					
downtown via a public walkway, bicycle path, and	Walsh, Senator	Construct Fall 2009					
shuttle bus circuit, crossing Onondaga Creek at Fayette Street.	Clinton & NIMO)	Fall 2009					
3. US Army Corps of Engineers (USACE) Preliminary	\$ 35,000.00						
Restoration Plan Report	(federal)						
In this 2006 report, USACE recommended moving to	(icaciai)						
a feasibility study phase for an Onondaga Creek							
aquatic habitat restoration project in Syracuse.							
Recommended site locations are Kirk Park and Lower							
Onondaga Park. If project were approved, estimated							
funding need is \$6,436,000.00 and would take 5 years							
to complete. Local/federal cost share would be 50/50.							
4. Onondaga Creek Walk Phase 1: Franklin to Armory	\$ 7,140,000.00	Construct					
Square	(Federal	2008					
Funded by state/federal transportation money, Phase	Highway/TIP)						
1 has been designed and is ready for construction by							
City of Syracuse.							
5. Onondaga Creek Walk Phase 2: Armory Square to Kirk	\$ 125,000.00	Complete					
Park Feasibility Study	7	by Fall					
Barton & Loguidice, engineering consultant for City of		2008					
Syracuse, is completing a feasibility study for the next							
phase of the creek walk							

Projects in/near the Onondaga Creek corridor:	Value (funding source)	Time- line	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
6. Clinton Street Regional Treatment Facility and Conveyances Onondaga County court-ordered combined sewage overflow (CSO) abatement project, planned for construction between Onondaga Creek and Museum of Science and Technology (MOST) in Armory Square. Author's assumption is that conveyances are planned from Oneida Street to facility and from Fayette Street to facility.	\$111,442,042.00 (federal and state)	Nov 2007 start					
7. Midland Avenue Regional Treatment Facility and Conveyances Onondaga County CSO abatement project under construction at Midland Avenue and Blaine/Oxford. Phase III conveyance pipeline from Newell Street to facility is in bidding process (?); construction scheduled from August 2007-January 2009. Conveyances planned along Onondaga Creek, through Kirk Park.	\$122,915,724.00 (federal and state grants)	2004-2009?					
8. Sewer Separation Project for CSO #050 Onondaga County sewer separation on Rockland Avenue and Onondaga Creek Parkway (west bank of Onondaga Creek near Kirk Park). Installation of 4200 feet of new sewer pipeline.	\$ 3,247,888.00 To contractor (federal and state grants)	2007-2008					
Sewer Separation Project for CSO #051 Onondaga County sewer separation slated for Colvin Street		Apr 2008 start					
Sewer Separation Project for CSO #022 Onondaga County sewer separation slated for Clinton Street		Apr 2009 start					
 Construction at McCarthy Island Southside Academy Charter School, managed by National Heritage Academies, is under construction on the Shady Willows/McCarthy Island site, at Onondaga Creek Blvd and Ford Ave. Home Headquarters, Inc., owner of the remainder of the site, has a pending green housing proposal. 							

Projects in/near the Onondaga Creek corridor:	Value (funding source)	Time- line	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
12. SUNY ESF "Restoration of Urban Waterways" project, Kirk Park (Endreny/Leopold & grad students) US EPA funded effort for channel design, riparian vegetation mapping and research plots, watershed and stormwater runoff modeling.	\$ 200,000.00 (federal- HUD) \$ 350,000.00 (federal – EPA)						
13. Onondaga Botanical Garden and Arboretum An arboretum and re-naturalization of the Onondaga Creek corridor planned in an arc from Upper Onondaga Park, south to Newell Street, and west through Elmwood Park. Current status: Imminent implementation; funding channeled through City of Syracuse.							
14. Gristmill Renovation at Elmwood Park on Furnace Brook Is this part of the Botanical Garden project?			,				
15. Annual Onondaga Creek Cleanups Volunteer creek channel cleanups coordinated by Cornell Cooperative Extension. Held on two weekends in September, launched from Kirk Park.	\$ 4,000.00						
16. Lincoln-Bellevue Neighborhood Development Project Partnership of organizations planning neighborhood open and agricultural space, housing and youth facilities. New housing planned on city parcels adjacent to the west bank of Onondaga Creek, on Midland Avenue. Estimated funding need is \$2,151,850.00, according to project proposal.							
17. Dorwin Avenue Bridge Rehabilitation City of Syracuse just signed contract with Fisher Associates. In preliminary design stage.		2007-2008					
West Fayette Street Bridge Rehabilitation City of Syracuse just signed contract with CDM Engineering.	\$ 863,000.00 (TIP/City Bond)	Design 07 Construct 2008					
19. Erie Boulevard Bridge Reconstruction City of Syracuse	\$ 3,905,000.00 (80% federal, 15% state, 5% local)	Design 2007 Construct 2009					

Projects in/near the Onondaga Creek corridor:	Value (funding source)	Time- line	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
20. Temple Street Bridge Reconstruction City of Syracuse	\$ 1,754,000.00 (80% federal, 15% state, 5% local)	Design 2007 Construct 2007					
21. West Seneca Turnpike Bridge Reconstruction City of Syracuse	\$ 2,543,000.00 (80% federal, 15% state, 5% local)	2007					
22. Flood Hazard Mapping Update of Onondaga Creek flood hazard maps for Federal Emergency Management Agency by URS Corporation. Maps are in draft form.							
23. Agricultural Environmental Management program (non-point source pollution reduction) On-going work with watershed farmers by Onondaga County Soil and Water Conservation District (OCSWCD) to reduce non-point source pollution of phosphorus to Onondaga Creek and tributaries, benefiting Onondaga County's court-ordered lake cleanup. Onondaga Lake Partnership (OLP) - sponsored.	\$ 3,123,000.00 (federal)	1998-2008					
24. Streambank Stabilization Project Upper watershed streambank and stream channel restoration by OCSWCD and USACE. Intended to reduce sediment loading and improve habitat. OLP-sponsored.	\$ 1,151,000.00 (federal)	2002-2005					
25. Mudboils Projects Includes remediation monitoring and control, maintenance of remediation works, and well and dam closure. OLP-sponsored, sub-contracted to USGS.	\$ 2,271,659.00 (federal)	1998-2010					
26. Watershed Land Trust Initiative (Stacey Smith) Research for Onondaga Creek watershed land trust(s) by coalition of interested citizens and organizations. Partnering with City of Syracuse Mayor's Office.							

Projects in/near the Onondaga Creek corridor:	Value (funding source)	Time- line	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
27. Near Westside Initiative Funding via federal Syracuse Neighborhood Initiative (SNI) funds and Syracuse University for affordable housing, commercial renovation, reconfiguring West Street, and attracting art/creative/green entrepreneurs. In addition, City of Syracuse is applying for \$10,000,000 state economic development "Restore NY" grant to help pay for several projects.	\$ 2,250,000.00 (federal) \$ 13,800,000.00 (Syr University)						
28. Syracuse City School Rehabilitation and Greening Clary School and Institute of Technology are two of the seven schools in Phase 1, project has 4 phases.	\$224,883,000.00 Phase 1 (7 schools)						
29. Pending Rural and Suburban Private Development? Old Bailey Farm property? Tully area? LaFayette area? West Branch?			>				
30. Spring 2004 SUNY ESF Design Studio Landscape Architecture Student designs for Onondaga Creek Corridor in City of Syracuse.							
31. W. Washington & S. Franklin Streets Development Relocation of O'Brien & Gere Engineering to downtown. Creekside facility will include mixed-use development on former parking lot. Federal SNI funds will assist development.	\$ 1,000,000.00 (federal) + private investment?						
32. King & King Architecture Relocation Plan for a sustainable LEED building at W. Jefferson Street, near SU Warehouse, on west bank of the creek.							
33.							
34.							

TIP = Transportation Improvement Program – federal transportation funds administered through the state

SNI = Syracuse Neighborhood Initiative

LEED = Leadership in Energy and Environmental Design Green Building Rating System

On-Going Water Quality Monitoring in Onondaga Creek watershed:	Water Quality	Human Health & Safety	Eco Health & Habitat	Con- nect- ivity	Educ- ation
Onondaga County Ambient Monitoring Program (AMP)					
Water quality monitoring of Onondaga Lake and tributaries as required by state and					
federal regulations, to assess compliance with state and federal standards. Find data					
on this website: http://www.ongov.net/WEP/we15.html					
US Geological Survey (USGS)					
Routine water monitoring associated with various field installations as part of AMP. In	-				
addition, USGS is monitoring non-point source pollution (nitrogen, phosphorus and					
suspended sediment) for a surface watershed model and other studies for the OLP.					
Find data on this website: http://waterdata.usgs.gov/nwis					
Project Watershed					
Adult and student volunteer water quality monitoring in multiple locations.					
Find data on this website: http://projectwatershed.org/watershed_manage/					
Onondaga Environmental Institute (OEI)					
Water quality monitoring funded by US EPA grants in cooperation with the Onondaga					
Nation.					
Upstate Freshwater Institute (UFI)					
Robotic water quality monitoring in association with OEI as part of above grants.					
Find data on this website: http://www.ourlake.org/index.html					

Planning/Visioning Projects:

Canopy/SUNY ESF Onondaga Creek Forum and Visions Workshop, 2003

Gathering of interested citizens and city and county officials for two-day forum to learn from success of South Platte River restoration and begin the process of identifying priorities/issues for Onondaga Creek restoration.

FOCUS Water and Waterways Strategic Plan, 2004

Strategic plan for local waterways to preserve and market them for personal and commercial use; improve for recreation, tourism and economic development.

American Institute of Architects Sustainable Design Assessment Team, 2006

Public meetings and workshops with visiting volunteer team of architects and others to assist community visioning and creation of a more sustainable future for Syracuse.

Onondaga Lake Visioning, 2006

OLP-sponsored project to assess technical and community vision for future of Onondaga Lake.

Onondaga Creek Community Forums Checklist for Working Group Members!

- Distribute flyers to local community bulletin boards and businesses in your area. Please list locations of posting at http://onondagacreek.myfastforum.org/ (or call Lindsay 472-2150 x 25) to efficiently avoid duplicating efforts!
- Make phone calls to key people (politicians, friends, active citizens, etc) in your area, inviting them to the closest Community Forum. Get at least 10 to attend!
- ☐ If you have access to email, check out the online "Get the Word Out!" Kit on our website www.esf.edu/onondagacreek/ and email everyone you know an invitation to the forums, with a link to the website and the flyers!
- ☐ Try to attend as many forums as you can! You will be instrumental in helping the forums run smoothly and will be able to hear firsthand what the community has to say about Onondaga Creek. Your understanding of local issues will greatly help the Project Team to interpret the community input.



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OCRP Working Group Design Charrette Guide: May 2, 2007 and June 6, 2007

Overview:

In May and June 2007, Working Group will complete a Design Charrette for the Onondaga Creek Conceptual Revitalization Plan. This guide is designed to give Working Group an overview of this upcoming process and a list of objectives that will be accomplished. The objectives of these meetings are to:

- Review *Options* for the Entire Creek
- Determine and Recommend Site Specific Options for Each Stream Stretch
- Prioritize Recommendations
- Create Visual Depictions (Maps, Cross Sections) of Working Group Recommendations

<u>May 2007:</u> Working Group will break into three teams based upon geographic location along the Creek. Teams will each focus on one of three segments: 1. Rural Segment; 2. Urban Segment; 3. Mixed Segment (both urban and rural issues). Each team will then plan specifically for their segment of the Creek. **Figure 1** shows a Watershed Continuum for Onondaga Creek and describes the specific stream segments.

Figure 1: Onondaga Creek Watershed Continuum

Continuum

Rural Segments

West Branch Onondaga Creek Headwaters to Rainbow Creek Rainbow Creek to Dam **Mixed Segments**

Dam to Ballentyne Avenue

Urban Segments

Ballentyne Avenue to Inner Harbor

June 2007: Teams will combine and discuss their recommendations with the entire Working Group in order to gain consensus for the over all plan. At this time, Working Group will combine team efforts from May into a draft plan. Facilitators and experts will assist in order to ensure compatibility of specific recommendations with respect to the entire system. If additional time is needed, Working Group will complete the design charrette in July.

Monthly Objectives:

May 2007:

- Review options for the entire creek
- Determine and recommend site specific options for each stream segment during the design charrette
- Create first version of creek revitalization maps using site specific options

June/July 2007 *:

- Provide additional time for teams to gain consensus on their planning segment
- Finish creek revitalization maps
- Look at biology/hydrology/recreation/access/safety cross sections impacts
- Combine Working Group teams and explain/discuss recommendations, show displays, answer questions

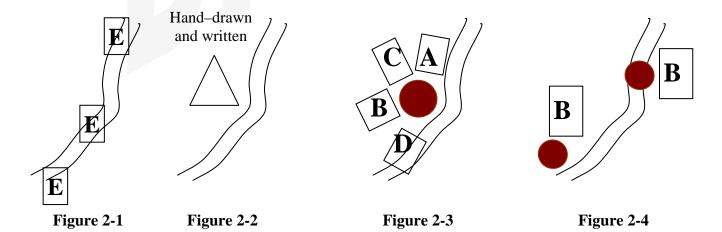
- Complete draft recommendations for Onondaga Creek
- Discuss timeline for recommendations/prioritize recommendations

Process and Responsibilities:

May 2007

- 1. Review *Options* for the Entire Creek: (5:30-6:00)
 - Working Group will review and discuss options from previous meetings.
 - Facilitators will aide Working Group with discussion and summarize discussion.
 - Resource experts/observers: observe meeting and assist with charrette when prompted
- 2. Review Design Charrette Process (6:00-6:20)
 - Rick Smardon/Meredith Perreault explain process to Working Group
 - Question Answer Session
- 3. Determine and Recommend Site Specific Options (6:20-7:30)
 - Working Group:
 - o Break into three team segments. Work on the section that is most important to you. In June, you can provide comments on alternative segments.
 - o Working with your team, place symbols on Creek Revitalization Map to depict recommendations. Verbalize your decision to team and facilitator.
 - o Place symbols anywhere there is a recommendation (This includes the creek, its tributaries, land use along the creek, and any other area that may affect the creek)
 - o Emphasize system wide goals with multiple symbols (Figure 2-1)
 - o If a symbol card is unavailable, then create/draw a new symbol (**Figure 2-2**)
 - o Multiple symbols can be used in one site. For example: WG may recommend creating a public park with a gravel bike trail, a wetland, and boating access to the creek. (Figure 2-3)
 - o Symbols can be used more than once (Figure 2-4)
 - o Use the Symbols Key/Ask a facilitator for help with any questions

Figure 2: Symbol Placement Guide



- Facilitators:
 - o Mark areas with multiple cards with a large dot in order to ensure accuracy of card placement
 - o Draw depictions on a flip chart when requested/ or to visualize an area with intensive change; Create rendering
 - o Aide Working Group members with drawing if necessary
- Resource Experts/Observers:
 - o Actively observe the Working Group design charrette process
 - o Recommend advice/clarify discussion to Working Group when prompted
- 4. Summary of Charrette Events/Additional Time (7:30-7:50)
 - Five minute summary of progress by each team
 - Additional five minutes for working group/facilitator summary/questions
 - This section will be used to gain an understanding of time needed in June

June/July 2007 *:

- 1. Review of May2007 Charrette/Additional Time for Teams to complete Creek Revitalization Maps (5:30 -5:50)
- 2. Explain/Discuss Team Recommendations: 10 Minutes/team (5:50-6:20)
 - Each team will discuss their Stream Segment Recommendations to the Working Group
 - Working Group will provide input and teams will take questions from the Working Group
- 3. Discuss Team Segments & Answer Questions: (6:20-6:50)
 - Discuss the three segments with the Entire Working Group
 - Identify Divergences
 - Discuss rationale, justifications, and thought processes behind each divergent element
 - Decide upon a reasonable compromise or find an alternative solution, vote if necessary
 - Working Group will discuss impacts of recommendations
- 4. Complete Draft Recommendations for Entire Creek (6:50-7:20)
 - Finalize recommendations and come to a consensus for Draft Plan
- 5. Prioritize Recommendations (7:20-7:35)
 - Working Group will prioritize the Draft recommendations with a dot tally.
 - Members will receive a total of thirty three dots (11 blue, 11 silver, 11 green).
 - Each color will represent a specific map Segment (Blue: Rural, Silver: Mixed, Green: Rural
 - Working Group will distribute each of the eleven dots on recommendations that they view as a priority.
- 6. Summary of Events/Additional Time (7:35-7:50)

* Note: If the design charrette is not completed in June, then Working Group will finish in July.

Facilitators/Resource Experts Responsibilities (May/June):

- Provide expert advice on Working Group recommendations
- Facilitate Working Group and team discussion
- Record specific comments from Working Group on Flow Charts, Flip Charts
- Facilitate Summary of recommendations in May
- Visualize Discussion: with Renderings

Onondaga Creek Working Group, January 4, 2006 River and Creek Revitalization around the Country: Web sites for Review

Today's case study:

Des Plaines River, Lake County, Illinois

Des Plaines River Wetlands Demonstration Project

http://www.wetlandsresearch.org/

Upper Des Plaines River Ecosystem Partnership

http://www.upperdesplainesriver.org/

Additional Case Study web sites for reviewing:

Anacostia River, Bladensburg, Maryland

Anacostia Watershed Network

http://www.anacostia.net/

Anacostia Watershed Society

http://www.anacostiaws.org/

Natural Resources Defense Council Fact Sheet

http://www.nrdc.org/water/pollution/fanacost.asp

Blackstone River, Uxbridge, Massachusetts

Blackstone River Coalition

http://www.zaptheblackstone.org/inner/whywehere/whywehere.htm

Blackstone River Watershed Association

http://www.thebrwa.org/

Blackstone Headwaters Hydrology Project

http://www.nichols.edu/headwaters/

Bronx River, Bronx, New York

The Bronx River Alliance

http://www.bronxriver.org/index.cfm

Guadalupe River, San Jose, California

The Guadalupe River Park and Flood Protection Project

http://www.grpg.org/FloodControl/

Friends of Guadalupe River Park and Gardens

http://www.grpg.org/Home.html

Mill Creek, Cincinnati, Ohio

Mill Creek Restoration Project

http://www.millcreekrestoration.org/index.cfm

Mill Creek Watershed Council

http://www.millcreekwatershed.org/home.html

Milwaukee River Basin, Milwaukee, Wisconsin

Milwaukee River Basin Partnership

http://basineducation.uwex.edu/milwaukee/index.html

Milwaukee River Basin Homepage

http://www.dnr.state.wi.us/org/gmu/milw/

Milwaukee Metropolitan Sewerage District (MMSD) Flood Management Projects

http://www.mmsd.com/floodmanagement/milwaukee_river_watershed.cfm#main_body

MMSD Lincoln Creek Environmental Restoration and Flood Management Project

http://www.mmsd.com/floodmanagement/milwaukee_river_watershed_lincoln_creek.cfm

River Revitalization Foundation

http://www.riverrevitalizationfoundation.org/homepage.html

General resource web sites:

Center for Watershed Protection, provides technical tools for watershed organizations. http://www.cwp.org/

River Network, nationwide environmental organization that builds and supports grassroots river and watershed groups.

http://www.rivernetwork.org/

Vermont River Management Program, Department of Environmental Conservation, Water Quality Division

http://www.vtwaterquality.org/rivers.htm

Working Group Meeting October 3, 2007, tally updated November 27, 2007 Project bundle "voting" results

Project Bundle	Мар	Votes
Urban Section		
Southside Area	F	21
Botanical Garden Area	F	20
Inner Harbor	F	18
Armory Square	F	12
Clinton Square	F	11
Franklin Square	F	8
Furnace Brook Daylighting Project	F	7
Transition Sections		
South Valley Area	E	31
North Valley Area	E	25
Valley Watershed Biopreserve	E	20
Furnace Brook Watershed	L	20
Rural Sections		
Onondaga Nation Area	D	14
Honeywell Lands South	B, I	13
Fall Creek Area (Blue Hole)	J	12
Mudboils Area	В	8
LaFayette Apple Festival	С	7
Rainbow Creek Area	M	7
Vesper/Headwaters Area	A	6
Kennedy Creek Area	K	6
South Onondaga Area (W Branch)	G,H	6
Fellows Falls Area	A	5
Honeywell Lands North	С	5
Central LaFayette Area	K	5
Pumpkin Hollow Area (W Branch)	G,H	5
Tully Farms Byway Signage Project	С	4
Headwaters Gravel Mine	В	2

 $\label{localized} $$\Oei2dc\h\02\ CCWI\2003\OCRP1\04$ Meetings\WorkingGroupMeetings\2007\WG_32_03OCT07\BundlVote_27Nov07.doc $$$

Onondaga Creek Revitalization Plan Abbreviated Goals Summary

1) Water quality

- Achieve Class B standard (fishable, swimmable)
- Water should be clear and attractive, free of garbage.

2) Human health and safety

- Minimize potential for drowning, damaging floods, and liability.
- In the City, establish a new fencing policy for Onondaga Creek fence that balances the need for safety and access.

3) Ecological health and habitat

- System-wide, increase native diversity of riparian vegetation canopy to increase wildlife and bird diversity.
- System-wide, restore cold water fish habitat
- Increase wetland viability and wetland vegetation diversity, restoration by reconnecting drainage systems

4) Access, Recreation and Use

- Establish a system of trails and linkages
- Maintain and protect open spaces
- Make creek access a priority
- Establish land management practices and coordinate municipal recreation/access projects to support a naturalized, attractive creek.
- Government commitment to Onondaga Creek revitalization

5) Education

Provide diverse education experiences and opportunities for multiple audiences

KEEPING GOALS IN MIND, PLEASE VOTE ON THE NEXT 3 PAGES



For map reference, please refer to your Revitalization Maps (full color, 11" x 17" size), either received at the July Working Group meeting or mailed to you. If you need another set, please call.

URBAN SECTION

MAP F: Inner Harbor to Ballantyne Road, Syracuse

Inner Harbor (Onondaga Lakeshore to Spencer Street)

- Public Access
- Habitat Enhancement
- Creek-wide migratory corridor throughout area

Franklin Square (Spencer Street to Highway 690)

- Trail & Habitat Enhancement
- Channel Enhancement
- Natural & Cultural Historical Interpretation
- Maintain continous riparian canopy cover

Clinton Square Area (Highway 690 to Fayette Street)

- Stormwater Management Demonstration Projects
- Art Deco Pocket Park
- Trail/Pedestrian Enhancements
- Floodplain Creation

Armory Square (Fayette Street to West Onondaga Street)

- Project Collaboration (Near Westside Initiative, etc.)
- Trail Enhancement
- Floodplain Creation
- Living Machine
- Public Access

Southside Area (West Onondaga St. to Kirk Park Northern Boundary)

- Renaturalization
- Channel Modification
- Trail/Greenspace Creation
- Public Access
- Stormwater Management Innovations

Botanical Garden Area (Kirk Park to Newell Street)

- Park/Greenspace Showcase Area
- Renaturalization
- Channel Modification
- Stormwater Management Innovations

Furnace Brook Daylighting Project (Underground portion of Furnace Brook, roughly Glenwood Avenue to Onondaga Creek Boulevard, near Elmhurst Ave.)

- Channel Modification/Reconnection
- Education/Interpretation

TRANSITION SECTION (PART-URBAN/PART RURAL)

MAP E: South of Ballantyne Road, Syracuse through Nedrow

North Valley Area (Newell Street to W. Cheltenham Road)

- Channel Modification
- Interpretive Trails
- Wetland Creation/Enhancement
- Stream Daylighting/Reconnection (City Line Creek, Kimber Brook, Cold Brook)
- Public Access
- Educational Collaboration (Clary, McCarthy, VanDuyn, Faith Heritage, Southside Charter, McKinley-Brighton, St James Schools)



South Valley Area (W. Cheltenham Road through Nedrow)

- Channel Modification Demo Projects
- Renaturalization
- Public Access
- Recreation Opportunities
- Riparian and Wetland Creation / Enhancement

Valley Watershed Biopreserve (Forested slopes of the western upland watershed divide throughout the Valley and Nedrow, includes Rand Tract)

- Land Acquisition/Biopreserve Creation
- Manage/Restore Upland Areas
- Trail Connections

MAP L: Furnace Brook, Town of Onondaga and Syracuse

Furnace Brook Watershed

- Urban Best Management Practices Area
- Brook Trout Management/Protection
- Renaturalization
- Trail/Park Enhancement & Connection
- Educational Collaboration (OCC, Corcoran)
- Historic signage for Furnace Brook and Onondaga Park Reservoir

RURAL SECTION

MAP D

Onondaga Nation

- Dam Modification
- Trails Enhancement/Connection
- Restore/Protect Native Floodplain & Aquatic Species
- Protect/Manage Wetlands/ Wetland Species
- Recreation/Wildlife Viewing Opportunities

MAP C (Route 20 to Otisco Road)

LaFayette Apple Festival Area (Route 20 to Webster Road)

- Open Space Creation/Linkages
- Recreation
- Rural Best Management Practices Demonstration Projects

Tully Farms Byway Signage Project (Webster Road to Nichols Road)

- Interpretive/Education Signage (Cardiff Giant, Landslide Area)
- Recreation

Honeywell Lands North (Roughly Nichols to Otisco Road)

- Riparian Enhancement
- Recreation
- Public Access

MAP B (Otisco Road to Route 80)

Mudboils Area (Otisco Road to Town of LaFayette line)

- Mudboils Maintenance/Sediment Control
- Park Creation
- Nature Trail Creation
- Public Access
- Investigate, find solutions for liability issue

Honeywell Lands South (Overlaps on Map I; I-81, across Tully Farms Road, to near Woodmancy Road)

- Recreation
- Park/Biopreserve Creation
- Native Species Enhancement
- Rural Best Management Practice Demonstration Sites



Headwaters Gravel Mine Area (North of Route 80 near Tully Farms Road)

 Investigate/follow-up on NYS Department of Environmental Conservation's permit conditions and enforcement

MAP A: Vesper to Tully, Mainstem

Fellows Falls Area (Woodmancy Road and Route 80 area)

- Biopreserve Creation
- Recreation
- Rural Residential Best Management Practice Demonstration Sites

Vesper/Headwaters Area (From Strong Road, along Route 80, to headwaters)

- Renaturalization
- Rural Best Management Practice Implementation
- Channel Modification

MAP M: Rainbow Creek

Rainbow Creek Area (In vicinity of mudslide)

- Biopreserve Creation
- Water Quality Protection
- Monitor Development Pressure, Work with Towns

MAP J (Fall Creek)

Fall Creek Area (North of Rt 80, near Town of Otisco border with LaFayette)

- Blue Hole Protection/Conservation Easement
- Water Quality Protection

MAP K: Hemlock and Kennedy Creeks

Kennedy Creek Area (Kennedy headwaters area, across I-81, to eastern border of Onondaga Nation)

- Stafford Park Habitat Enhancement
- Rural Residential Best Management Practices
- Riparian Protection/ Enhancement
- Trail Development; Linear Park

Central LaFayette Area (Near intersection of Route 20 and I-81)

- Trail Creation
- Education Collaboration (Grimshaw School)
- Urban & Rural Best Management Practices
- Biopreserve Creation for Headwaters Protection

MAPS G & H: West Branch of Onondaga Creek

Pumpkin Hollow - Cedarvale Area (Along Pleasant Valley to Cedarvale Road)

- Land Easements
- Wetland/Floodplain Species Protection and Restoration
- Biopreserve Creation

South Onondaga Area (Intersection of Route 80/Makyes/Cedarvale Roads)

- Rural BMPs Gravel Mine/Golf Course
- Renaturalization / Protection of Wetlands and Floodplain
- Land Easements
- Fishing Access / Park Creation
- Riparian Buffer Enhancement



Onondaga Creek Working Group Meeting, March 7, 2007 Ecology/Biology Options

DRAFT Prepared by Meredith Perreault, March 27, 2007

Synopsis: The options below are a synthesis of ideas discussed by the Working Group. They are based on meeting and flip chart notes. Based on Working Group suggestions, this draft distinguishes between streamwide and stream-segment-specific options.

In addition, ideas for developing an overall revitalization strategy/process were discussed, including:

1) Think of long-term restoration possibilities/benefits. 2) Make decisions about land use practices, utilities, in creek corridor – can modifications be made? Can they be worked around? 3) 'Cherry pick' an area that is easy to do to build momentum. But don't forget that timing is really important – work with impending projects.

System Wide Options

Option 1: Increase diversity of riparian vegetation canopy to increase wildlife and bird diversity ("build it and they will come").

Option 2: Restore cold water fish habitat:

- Eel restoration specifically mentioned;
- Set sub-goals for stretches where cold water fish habitat restoration is most and least plausible. At a minimum, no alterations to creek corridor should degrade habitat further or impede either down- or upstream passage of cold water species.

Option 3: Increase wetland viability and wetland vegetation diversity, restoration by reconnecting drainage systems for wetland areas to other wetlands and creek.

Site Specific Options

Option 1: Determine goals by stream segment:

- Keep a list of desired stream-wide goals and decide where and how goals can be met in specific stream segments. Goals can concern vegetation, water quality, natural habitat for fish, human access opportunities, drainage systems.
- Decision-making segment-by-segment must be open-minded and flexible.
- As a starting point, make decisions about how much space to give creek in any given segment. Affects function and value less space equals less ecology function.

Option 2: Address impact of current flood control methods on creek ecology:

- Evaluate and work on changing flood control management methods in city;
- Persuade 'old-school' engineers to be flexible with management methods;
- Restore/reconnect small spring-fed tributaries to Onondaga Creek. They are good trout spawning and rearing habitat. This can help cool water temperature in main reach.
- Design upstream retention and detention systems along tributaries as part of municipal drainage easements

Option 3: Enhance vegetation/riparian areas in channelized creek corridor:

- Recolonization of bare plots using natural or managed methods. Two suggested areas:
 1) Nedrow to Ballantyne (conflicts with current flood control practices) and 2) Franklin Square. This applies to both main channel and tributaries. Use either herbaceous (shrubs, no maintenance) or tree plantings. Concern: trees breaking up and washing down the stream (which is the natural process).
- Rather than concrete, use more aesthetic stonework (or multiple kinds of materials) in city to allow for vegetation; slow water flow.

Option 4: Create 'ecoparks' in city: improves access for people and filtration/water quality.

What Are Freshwater Wetlands?¹

Wetlands are transition areas between uplands and aquatic habitats. They are known by many names, such as marshes, swamps, bogs, and wet meadows. Standing water is only one clue that a wetland may be present. The Freshwater Wetlands Act identifies wetlands on the basis of vegetation because certain types of plants outcompete others when they are in wet soils, and so are good indicators of wet conditions over time. These characteristic plants include wetland trees and shrubs, such as willows and alders; emergent plants such as cattails and sedges; aquatic plants, such as water-lily, and bog mat vegetation, such as sphagnum moss.

To be protected under the Freshwater Wetlands Act, a wetland must be 12.4 acres (5 hectares) or larger. Wetlands smaller than this may be protected if they are considered of unusual local importance. Around every wetland is an adjacent area of 100 feet that is also protected to provide a buffer for the wetland.

The U.S. Army Corps of Engineers also protects wetlands under Section 404 of the Clean Water Act, irrespective of size. Although the definition is slightly different than the state definition, the Clean Water Act protects basically the same thing -- areas of water or wet soils that support typical wetland plants.

Why Are They Valuable?

For many years, people did not recognize the value of wetlands. Consequently, New York has lost almost half of its wetlands to such activities as filling and draining. However, wetlands are valuable to the people and environment of New York State. These are some of the functions and benefits that wetlands perform:

Flood and Storm Water Control: Wetlands are important in how water moves in a watershed. They absorb, store, and slow down the movement of rain and melt water, minimizing flooding and stabilizing water flow.

Surface and Groundwater Protection: Wetlands often serve as groundwater discharge sites, maintaining base flow in streams and rivers and supporting ponds and lakes. In some places, wetlands are very important in recharging groundwater supplies.

Erosion Control: Wetlands slow water velocity and filter sediments, protecting reservoirs and navigational channels. They also buffer shorelines and agricultural soils from water erosion.

Pollution Treatment and Nutrient Cycling: Wetlands cleanse water by filtering out natural and many man-made pollutants, which are then broken down or immobilized. In wetlands, organic materials are also broken down and recycled back into the environment, where they support the food chain.

Fish and Wildlife Habitat: Wetlands are one of the most productive habitats for feeding, nesting, spawning, resting and cover for fish and wildlife, including many rare and endangered species.

Public Enjoyment: Wetlands provide areas for recreation, education and research. They also provide valuable open space, especially in developing areas where they may be the only green space remaining.

DEC's Wetland Functions and Values: http://www.dec.state.ny.us/website/dfwmr/habitat/fwwprog2.htm US Environmental Protection Agency's Wetlands Homepage: http://www.epa.gov/owow/wetlands/ Izaak Walton League's American Wetlands Campaign: http://www.iwla.org/sos/awm/ New York State Wetlands Forum, Inc.: http://www.wetlandsforum.org/

¹ This information is copied from New York State Department of Environmental Conservation's (DEC) web page *A Brief Description of the Freshwater Wetlands Act and What it Means to Wetlands Landowners* at the following address: http://www.dec.state.ny.us/website/dfwmr/habitat/wetdes.htm (dated June 17, 2003). This web page also summarizes the New York State Freshwater Wetlands Act and regulated activities. Other wetlands web sites are:

Defining a Wetland²

How do you know it's a wetland? To define a wetland, three components should be evident:

- 1. **Water.** Wetlands have **water present** at the surface or the root zone.
- 2. **Soil.** Wetlands usually have **unique soils** different from the surrounding uplands (hydric soils).
- 3. Plants. Wetlands have plants that are adapted to wet conditions (hydrophytes).

Wetland Terms

Bog: A peat-accumulating wetland that has no significant inflowing or outflowing water and supports mosses that prefer acidic growing conditions, particularly sphagnum.

Fen: A peat-accumulating wetland that receives some drainage from surrounding soil and usually supports marshlike vegetation.

Marsh: A frequently or continually flooded wetland characterized by green-stemmed plants, like cattails, adapted to saturated soil conditions.

Peatland: A generic term of any wetland that accumulates partially decayed plant matter.

Swamp: Wetland dominated by trees or shrubs.

Wet Meadow: Grassland with waterlogged soil near the surface but without standing water for most of the year.

Types of Wetlands that might be seen in Central New York

Freshwater Marshes -

This is a diverse category of wetlands characterized by:

- 1. emergent, soft-stemmed aquatic plants such as cattails and reeds;
- 2. shallow water:
- 3. shallow peat deposits (peat is a soil with undecomposed organic matter present).

They occur at the edges of lakes, in slow moving streams and rivers, and in isolated basins. The Great Lakes coastal marshes are a characteristic example.

Northern Peatlands -

The Northern Peatlands are characterized by deep peat deposits. Bogs and fens are two major types of peatlands that can occur in old lake basins or like "blankets" across the landscape.

Riparian³ Forested Wetlands -

Riparian wetlands occur along rivers and streams. Riparian wetlands are occasionally flooded by their adjacent waterbodies, but are otherwise dry for some portion of their growing season. Riparian ecosystems are considered to be more productive than their adjacent uplands, because nutrients are added during seasonal flooding.

² The material on this page is adapted from William J. Mitsch and James G. Gosselink. (1993). *Wetlands*, 2nd Edition. New York: Van Nostrand Reinhold, pp 22; 32-40; 115.

³ <u>Riparian Zone</u>: The land adjacent to streams, rivers, and lakes. Healthy riparian zones filter nutrients and sediments, increase streambank stability, and provide shade that reduces stream temperatures. (US Environmental Protection Agency (June 2001). *Protecting and Restoring America's Watersheds*. US EPA Office of Water, EPA-840-R-00-001.)