Central South Branch Kishwaukee River Municipal Green Infrastructure Workshop

Cecily Cunz, AICP – Senior Environmental Plann



Agenda

How to Incorporate Green Infrastructure in your Community through...

Policy changes

Implementing your projects

Funding opportunities



Programmatic Measures: general remedial, preventive, and policy watershed-wide Management Measures that can be applied across the watershed by various stakeholders.

Site Specific Measures: actual locations where Management Measure projects can be implemented to improve surface and groundwater quality, and green infrastructure.

Programmatic Measures

Policy & Education Recommendations

- Ordinance and Policy Recommendation
- Native Landscaping
- Pavement Alternatives
- Street Sweeping
- Rainwater Harvesting & Re-use
- Green Infrastructure Planning
- Conservation Design & Low Impact Development

Ordinance & Policy Recommendations

Plan Adoption & Implementation

- Watershed partners adopt plan and incorporate into comp. plans and ordinances
- Ordinance updates based on completed ordinance reviews

Green Infrastructure Network

- GIN incorporated into comp. plans and development reviews
- Developers protect and restore degraded natural areas
- Donate to public entity for long term management with dedicated funding

Ordinance & Policy Recommendations

Groundwater

- Infiltration requirements and impervious surface reduction within developments
- Road Salt
 - Consider alternatives to existing programs & emerging research from IL Tollway
- Native Landscaping/Natural Area Restoration
 - Allow native landscaping within local ordinances
 - Require developers to meet natural area performance standards

Native Landscaping

Using native plants around homes & businesses



Pavement Alternatives (ie. Permeable Pavers)

Allow water to percolate
Provide for infiltration
Can be used for parking lots, parking aprons, private roads, fire lanes, residential driveways, and bike paths



Street Sweeping

- Removes pollutants from roadways before they can enter streams
- Bi-weekly street sweeping can provide sufficient results



Rainwater Harvesting & Re-use

Downspout disconnection
Reduction in stormwater runoff
Utilizes rain barrels or cisterns
Often used for irrigation



Green Infrastructure Planning



- Key to achieving watershed health
- Protect unprotected green infrastructure parcels through acquisition, regulation, and/or incentives
- Incorporate conservation or low impact design standards on green infrastructure parcels where development is planned
- Limit future subdivision of green infrastructure parcels
- Implement long term management of green infrastructure

Conservation Design & Low Impact Development

Naturalized Buffe

AKA cluster or opens space design
Preserves natural areas and features
Maintains density by allowing smaller lots clustered around natural resources



Stormwater Managemei

et Sloped for Sheet Ru

-30' Collector Street

On Street Parking

R.O.W.

Greenstrip

Sidewal

Site-Specific Measures

Site-Specific Management Measures

Stream & Riparian Area Restoration

Detention Basin Retrofits

Other Management Measures

Streambank & Riparian Area Restoration



- Improve stream channel using pool-riffle complexes
- Stabilize streambanks using native vegetation, bioengineering, and hard armoring where necessary
- Increase buffers along streams and restore riparian areas
- Can reduce sedimentation and nutrients by 90%

Waterbody Buffers

Land adjacent to any water body including ponds, lakes, streams, and wetlands. SEWRPC recommends 75% minimum of stream length naturally vegetated with 75-foot-wide buffer. Goal for this watershed plan is 50 feet along both banks.



Riparian function, pollutant removal, & wildlife benefits for buffer widths (Source: SEWRPC) 2010).

Streambank & Riparian Area Restoration Sites

- 103,428 If categorized as Critical/Priority Areas
- Install native stream buffers where missing
- Restore degraded riparian areas to higher quality
- Spot stabilize banks using bioengineering, regrading where necessary



Example Stream & Riparian Area Restoration



Detention Basin Retrofits

- Replace turf grass with native vegetation
- Establish native buffers
- Can reduce sedimentation by 78%, up to 30% of nitrogen, and 45% of phosphorus



Detention Basin Retrofit Sites

- 7 detention basins are categorized as High Priority/Critical Areas.
- 19 are categorized as Medium Priority.
- General recommendations include naturalizing slopes and buffers.



Example Detention Basin Retrofits



Other Management Measure Sites

Potential projects include:

- 13 Swale retrofits
- 4 Natural area restorations
- 2 Green alley retrofits
- 1 Rain garden retrofit



Other Management Measure Sites



18B Swale Retrofit



20B Natural Area Restoration

Other Management Measure Sites







44H Natural Area Restoration

Critical/Priority Areas

- Projects recommended for IEPA 319 Grant Funding.
- Generally, those projects that would create the most water quality improvement.
- Also includes implementing mulch till, reduced till, or no till on an additional 16% of agricultural lands currently practicing conventional tillage



Site-Specific Action Plan Table

GENOA

ID#	Location	Units (Acres	Existing Condition	Management Measure Recommendation	Pollutant Reduction Efficiency			Priority	Owner &	Sources of	Cost Estimate	Implementation
		or Linear Feet)			TSS (tons /yr)	TP (lbs/yr)	TN (lbs/yr)		Responsbile Entity	Technical Assistance		Scheudle (Years)
DETENTION BASIN RETROFITS & MAINTENANCE (SEE FIGURE 52). Technical and Financial Assistance Needs: Technical assistance needed to implement detention basin retrofits is relatively low while financial assistance needs are moderate. Private landowners will need the greatest assistance.												
43A	See Figure 52	2.1	Wetland bottom basin strip invasives present with mowed turf slopes in average ecological condition.	Design and implement a project to remove turf, plant sides slopes and buffer with natives and maintain for three years to establish	13	22	141	Medium	Private Owner / Genoa- Kingston High School	Ecological Consultant/ Contractor	\$43K to design and construct. \$7K to implement three year M&M.	5-15 Years
43B	See Figure 52	4.1	Wetland bottom basin with naturalized side slopes, invasives present in average ecological condition	Design and implement a project to remove invasives, plant sides slopes and buffer with natives and maintain for three years to establish.	15	25	158	Medium	Private Owner / Genoa- Kingston High School	Ecological Consultant/ Contractor	\$82K to design and construct. \$14K to implement three year M&M.	5-15 Years
44C	See Figure 52	2.3	Dry-bottomed mowed turf grass basin in poor ecological condition.	Design and implement a project to remove turf, plant sides slopes and buffer with natives and maintain for three years to establish.	5	22	132	Critical Area/ High	Private Owner	Ecological Consultant/ Contractor	\$46K to design and construct. \$8K to implement three year M&M.	1-10 Years

Enough information on each project to pursue grant funding!

Potential Funding Sources

Potential grants cover water quality, restoration, agriculture, flooding & stormwater management, recreation and trails, and wildlife
 Includes IEPA, IDNR, USFWS, USACOE, IEMA, USDA/NRCS, NFWF, US Forest Service, Conservation Fund, and many others



Recommended projects can be tailored to each funding priority

Emphasize what's in the NOFO

Example: a stream and riparian area restoration might be funded under water quality, restoration, or flooding or pieces from several different grants

