Implementing a Watershed Plan

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Village of Algonquin

January 10, 2024

You've got a Plan… now what?

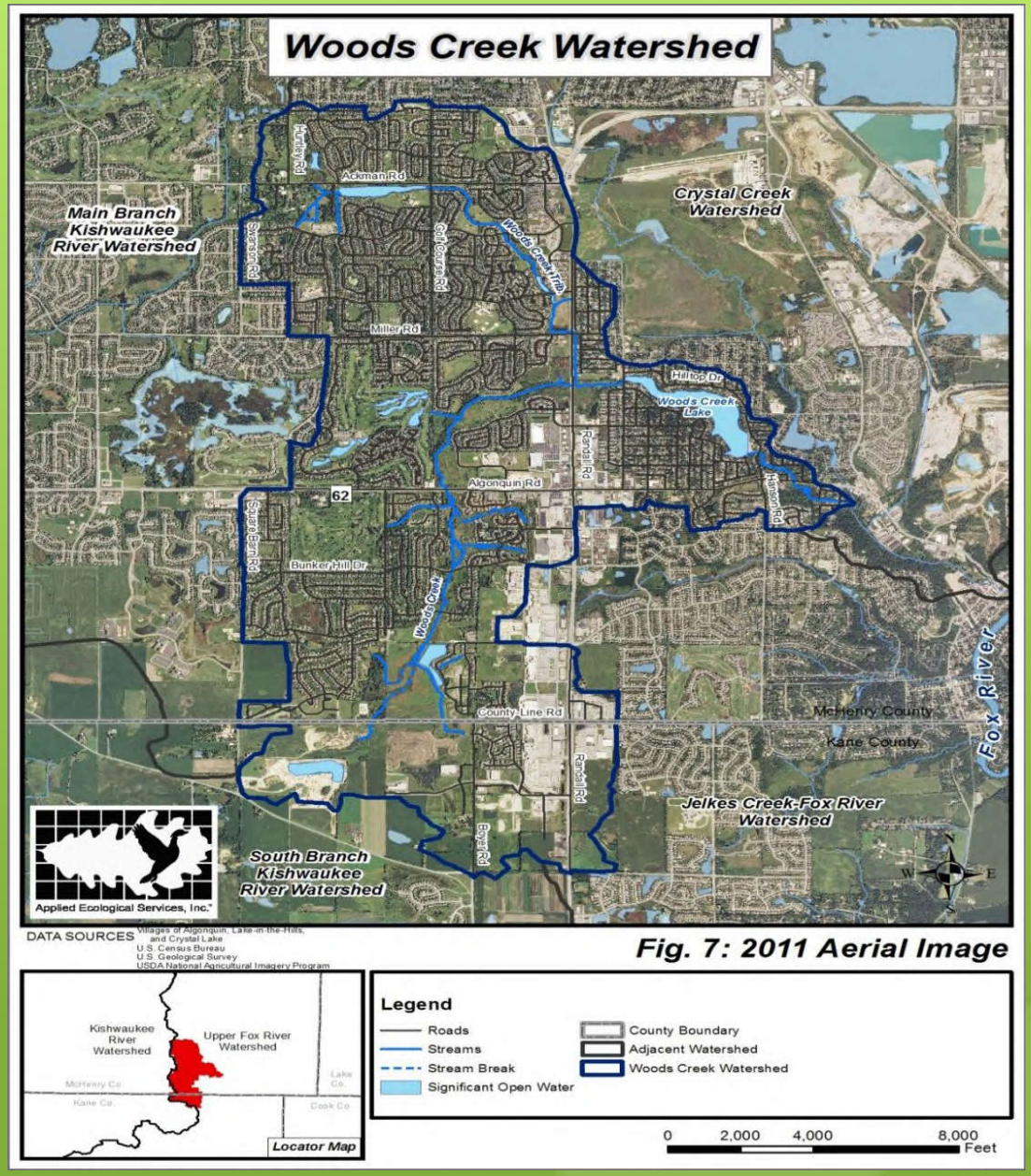


Fig. 7: 2011 Aerial Image

Don’t let the plan sit on the shelf

Do something with it!!

Implementation can make a big difference… Souwanas Creek before & after

Crystal Creek – before and after

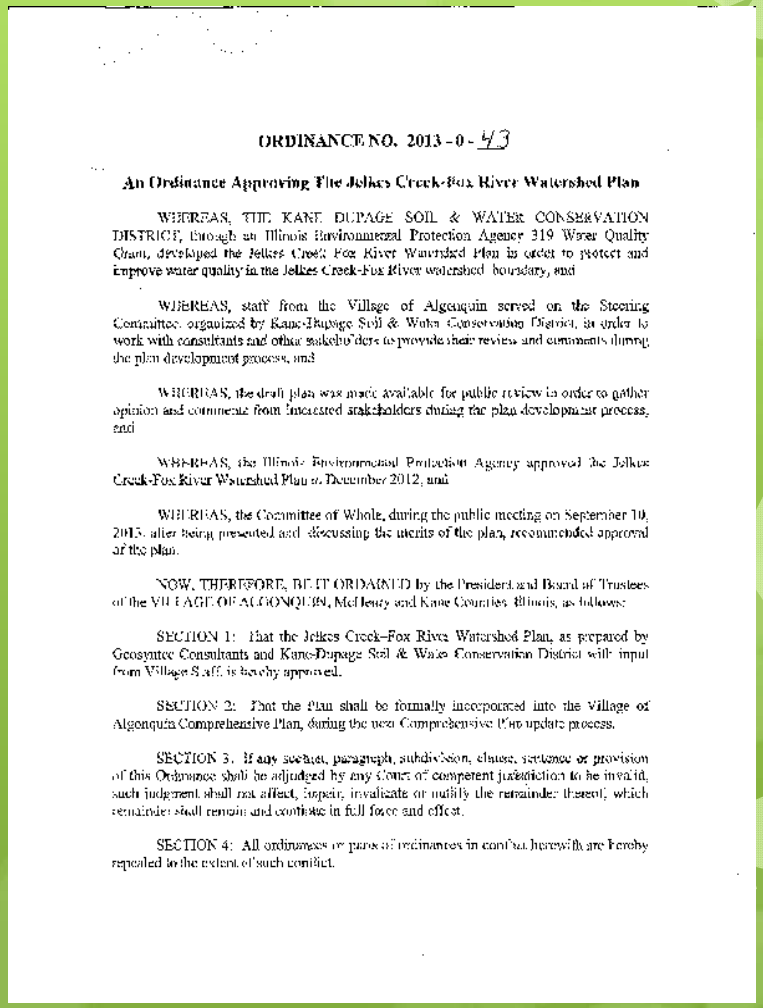
Turf grass detention conversion

3 Key Steps to Implementation

- Must have codes and policies to enforce what's in the plan
- $$ Money $$
- A cheerleader

Change & Create Municipal Codes Step 1…

- Have the Board adopt your Watershed Plan(s)
- You can't enforce implementation if it's not part of your Code



ORDINANCE NO. 2013 - 0 - 43

An Ordinance Approving The Jelkes Creek-Fox River Watershed Plan

WHEREAS, THE KANE DUPAGE SOIL & WATER CONSERVATION DISTRICT, through an Illinois Environmental Protection Agency 319 Water Quality Grant, developed the Jelkes Creek Fox River Watershed Plan in order to protect and improve water quality in the Jelkes Creek-Fox River watershed boundary, and

WHEREAS, staff from the Village of Algonquin served on the Steering Committee, organized by Kane-Dupage Soil & Water Conservation District, in order to work with consultants and other stakeholders to provide their review and comments during the plan development process, and

WHEREAS, the draft plan was made available for public review in order to gather opinion and comments from interested stakeholders during the plan development process, and

WHEREAS, the Illinois Environmental Protection Agency approved the Jelkes Creek-Fox River Watershed Plan in December 2012, and

WHEREAS, the Committee of Whole, during the public meeting on September 10, 2013, after being presented and discussing the merits of the plan, recommended approval of the plan.

NOW, THEREFORE, BE IT ORDAINED by the President and Board of Trustees of the VILLAGE OF ALGONQUIN, McHenry and Kane Counties, Illinois, as follows:

SECTION 1: That the Jelkes Creek–Fox River Watershed Plan, as prepared by Geosyntec Consultants and Kane-Dupage Soil & Water Conservation District with input from Village Staff, is hereby approved.

SECTION 2: That the Plan shall be formally incorporated into the Village of Algonquin Comprehensive Plan, during the next Comprehensive Plan update process.

SECTION 3: If any section, paragraph, subdivision, clause, sentence or provision of this Ordinance shall be adjudged by any Court of competent jurisdiction to be invalid, such judgment shall not affect, impair, invalidate or nullify the remainder thereof, which remainder shall remain and continue in full force and effect.

SECTION 4: All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

Change & Create Municipal Codes

Step 2…

- Preferably adopt your County Stormwater Ordinance (Village of Algonquin uses Kane County)
- This will help you collect fees and provide guidance
- Get rid of old outdated stormwater ordinances that may be in different parts of your code or development ordinances.
- These often conflict and cause confusion

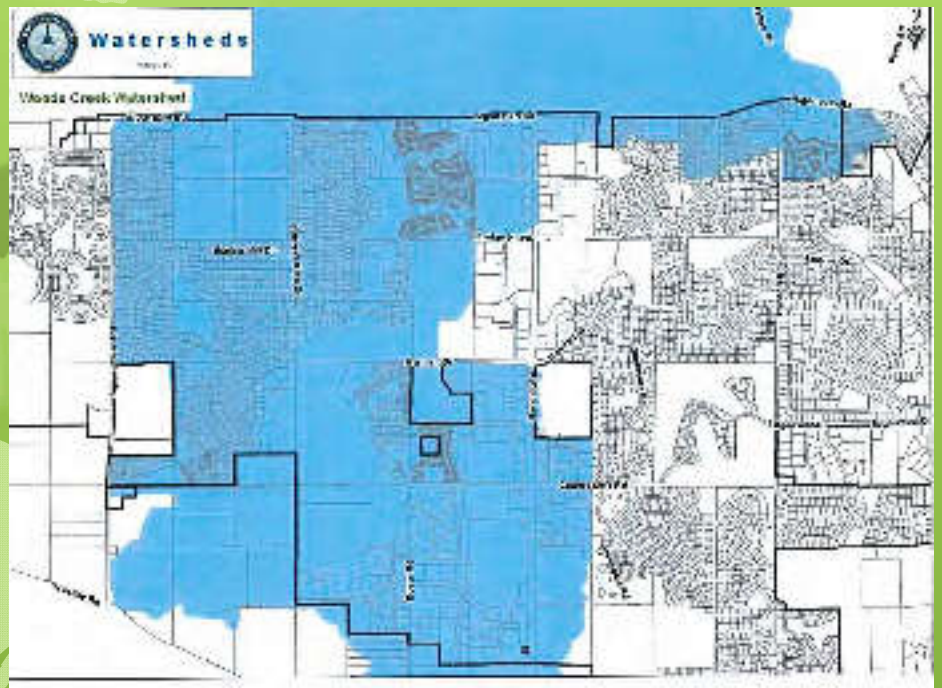
Change & Create Municipal Codes

Step 3…

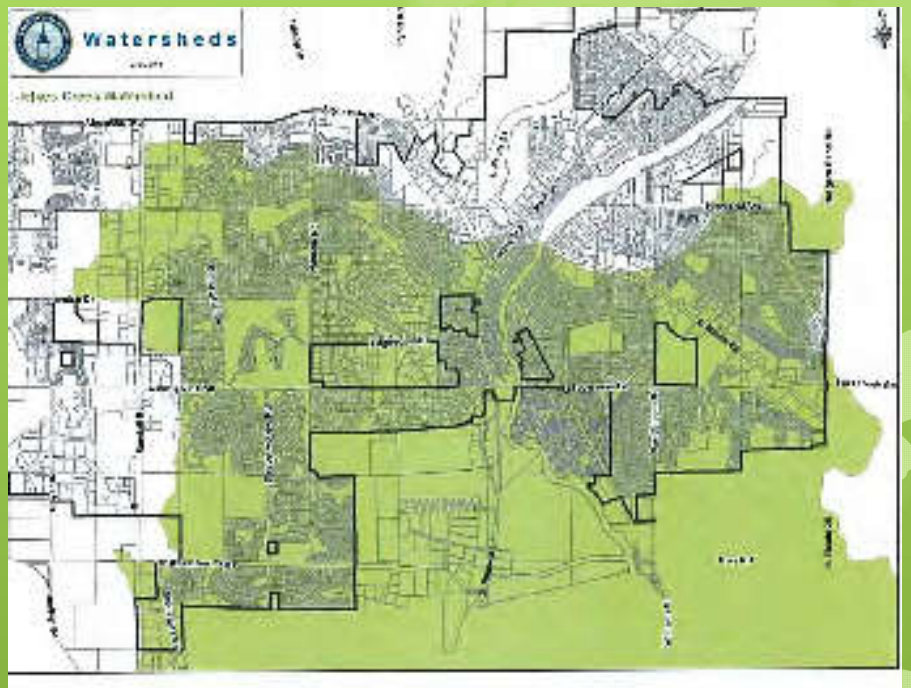
Watershed Protection Overlay District
Algonquin Section 21.13

- Creates a means for implementing the adopted Watershed Plan
- Sets the boundaries of the Watershed
- Allows for establishment of a fee

Watershed Overlay Districts



Map 2 Woods Creek Watershed Boundary



Map 3 Jelkes Creek Watershed Boundary

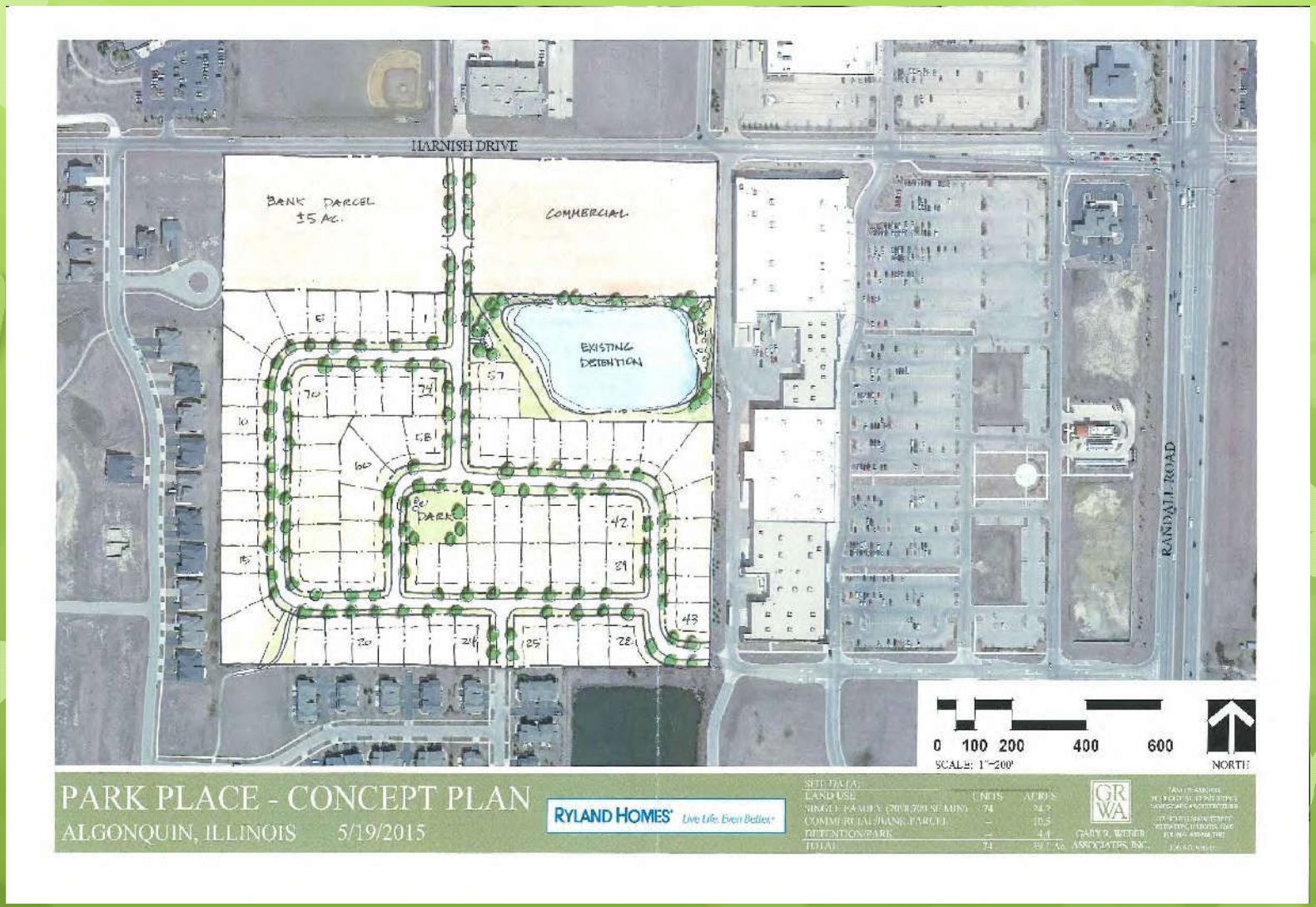
Change & Create Municipal Codes

Step 4…

- Write Conservation Design Standards & Procedures as part of your Planning, Zoning & Development Ordinance

- This is what triggers conservation design & allows you to reference the Watershed Protection Plans to have development pay for and install your projects

Proposed Development



c. To preserve the hydrologic condition and infiltrative capability of the soil by minimizing mass grading and impervious surfaces;

d. To preserve natural groundwater recharge functions and protect the quality of surface water and groundwater;

e. To minimize stormwater runoff and associated flooding and erosion;

f. To preserve significant archaeological sites, historic buildings, and their settings;

g. To provide connectivity to surrounding developments and promote interconnected trails, greenways, and wildlife corridors;

h. To reduce infrastructure costs and the cost of public services required for new development and enhance property values;

i. To protect habitat and maintain an ecologic balance;

j. To promote green building practices and LEED certification;

k. To encourage and explore alternative energy;

l. To promote infill development or redevelopment first; and

m. To view valuable natural areas as nonbuildable areas.

3. Applicability: The following regulations are intended to apply to proposed developments/redevelopments 1 acre or larger in size that contain and/or abut sensitive natural resource areas (automatic or cumulative triggers as listed below). In addition, petitioners may voluntarily choose to apply as a conservation development and thereby conform to all of the applicable requirements of this Section. Such applications also are eligible for the relevant density bonuses and related benefits offered.

These regulations are mandatory for a parcel if either an Automatic Trigger or a Cumulative Trigger, as defined below, is met. Note that all such natural resource areas that exist on the site are eligible to meet the open space requirements of this Section.

a. Automatic Triggers:

I. The site is located within an approved watershed plan; then the requirements of the watershed plan shall be followed;

II. The site contains or abuts within 200 feet of designated McHenry County Natural Area Inventory (MCNAI) sites;

Green Infrastructure Network

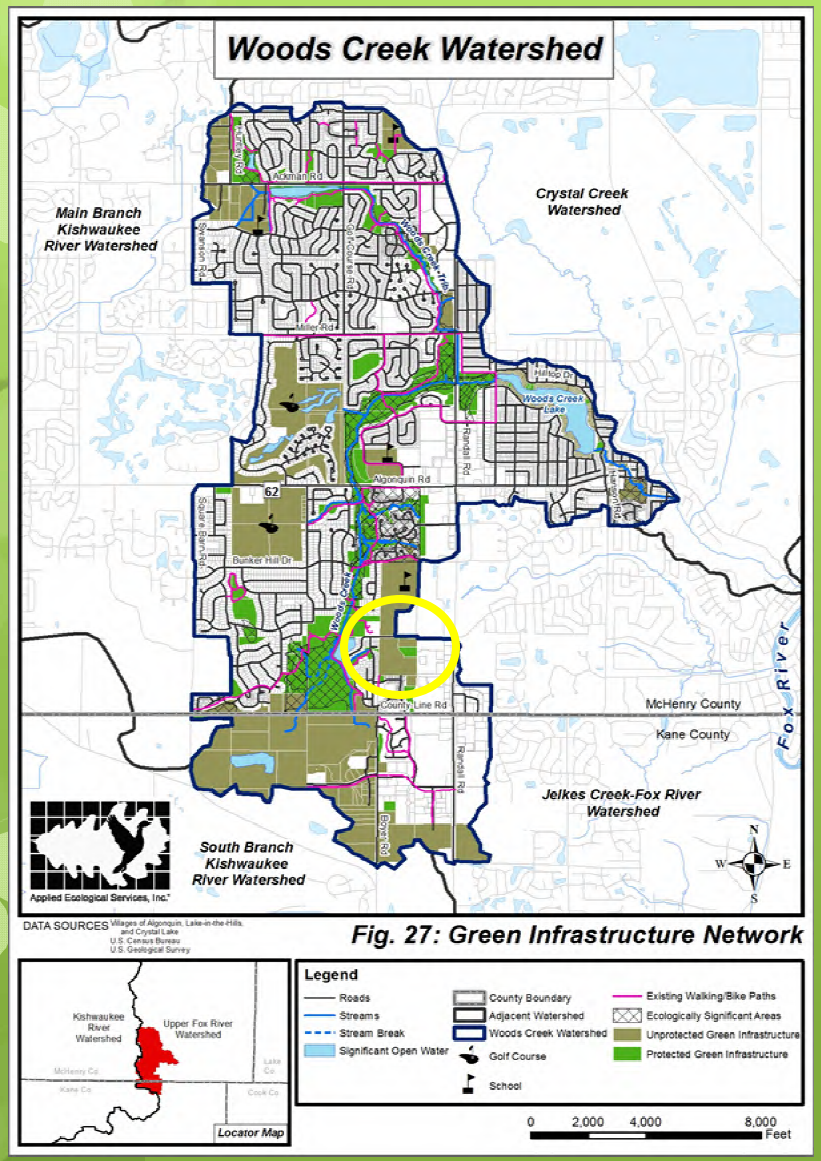


Fig. 27: Green Infrastructure Network

Priority

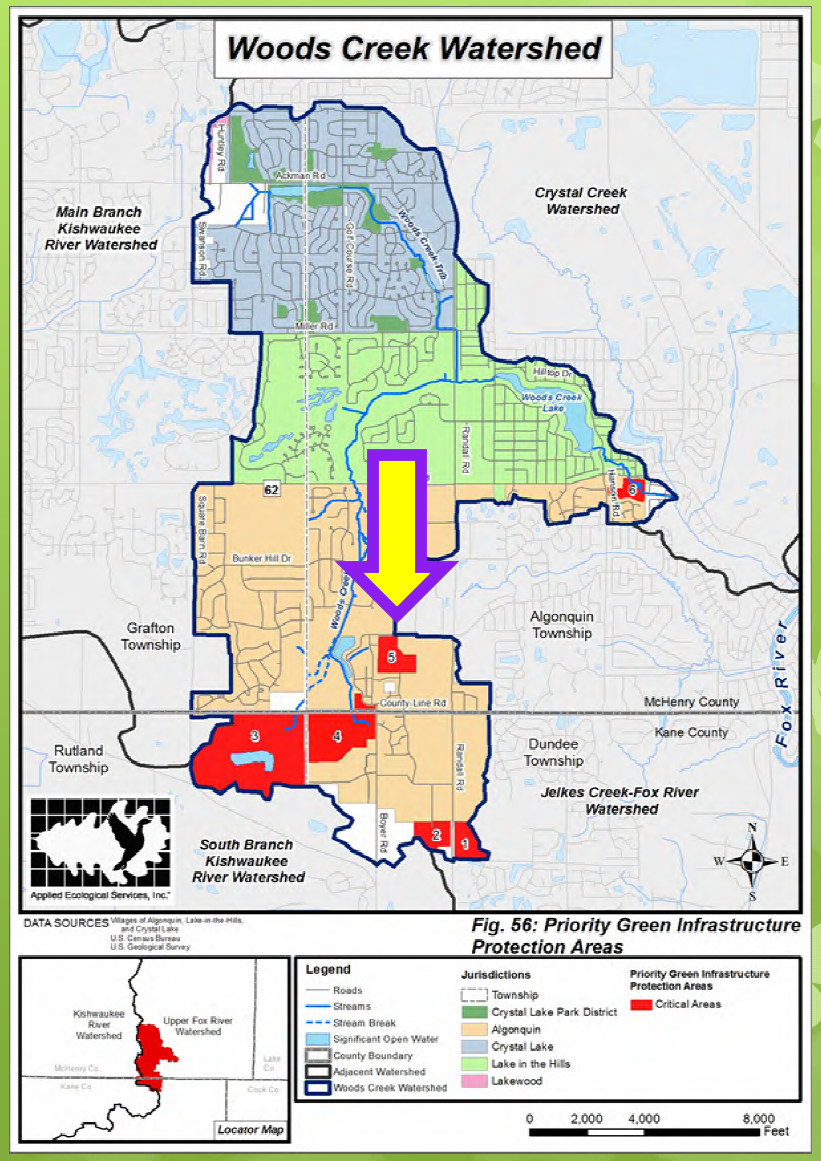


Fig. 56: Priority Green Infrastructure Protection Areas

WETLAND RESTORATION (See Figure 52)

Technical and Financial Assistance Needs: Wetland restoration projects are typically complex and require high technical and financial assistance needs to protect land, design, construct, monitor, and maintain the restoration.

ID#	Location	Units (size/ length)	Owner (public or private)	Existing Condition	Management Measure Recommendation	Pollutant Reduction Efficiency	Priority	Responsible Entity	Sources of Technical Assistance	Cost Estimate	Imple Sc (
1	Northeast corner of Randall & Longmeadow Pkw. (see Figure 52)	12.1 acres	Private agricultural land	Potentially feasible wetland restoration site located on private agricultural land that is a planned future annexation/development area for Algonquin. Site is located within the Green Infrastructure Network in an area important for groundwater/aquifer recharge. Note: site is considered a "Critical Area".	Incorporate wetland restoration into future development plans by using area as wetland detention. Implementation: 1) determine feasibility, 2) design and permit; 3) construct and plant; and 4) conduct short and long term maintenance and monitoring to ensure establishment.	Wetland Detention: TSS=3 tons/yr; TN=24 lbs/yr; TP=4 lbs/yr	Critical Area	Future developer; Algonquin	Ecological Consultant/ Contractor; USACE; NRCS/ SWCD; IEPA	$181,500 to design/permit/install/ maintain wetland	A deve c
2	Southern tip of watershed west of Randall (see Figure 52)	17.5 acres	Private agricultural land	Potentially feasible wetland restoration site located on private agricultural land that is a planned future annexation area for Algonquin. Site is located within the Green Infrastructure Network in an area important for groundwater/aquifer recharge. Note: site is considered a "Critical Area".	Incorporate wetland restoration into future development plans by using area as wetland detention. Implementation: 1) determine feasibility, 2) design and permit; 3) construct and plant; and 4) conduct short and long term maintenance and monitoring to ensure establishment.	Wetland Detention: TSS=8 tons/yr; TN=52 lbs/yr; TP=11 lbs/yr	Critical Area	Future developer; Algonquin	Ecological Consultant/ Contractor; USACE; NRCS/ SWCD; IEPA	$262,500 to design/permit/install/ maintain wetland	A deve c
3	Southwest corner of watershed (see Figure 52)	2.5 acres	Private agricultural land	Potentially feasible wetland restoration site located on private agricultural land adjacent to an existing wetland; land is future annexation/industrial development area for Algonquin. Site is located within the Green Infrastructure Network in an area important for groundwater/aquifer recharge.	Incorporate wetland restoration into future development plans by using area as wetland detention. Implementation: 1) determine feasibility, 2) design and permit; 3) construct and plant; and 4) conduct short and long term maintenance and monitoring to ensure establishment.	Extended Wet Detention: TSS= 86% TN= 55% TP= 68.5%	Medium	Future developer; Algonquin	Ecological Consultant/ Contractor; USACE; NRCS/ SWCD; IEPA	$50,000 to design/permit/install/ maintain wetland	A deve c
4	Headwaters of Woods Creek (see Figure 52)	3.1 acres	Private agricultural land	Potentially feasible wetland restoration site located at headwaters of Woods Creek along Reach 1 (WCR1) in private agricultural area that is planned for multifamily residential. Note: site is considered a "Critical Area".	Incorporate wetland restoration into future development plans. Implementation: 1) determine feasibility, 2) design and permit; 3) construct and plant; and 4) conduct short and long term maintenance and monitoring to ensure establishment. Restoration should occur in conjunction with restoring Critical stream reach WCR1.	Wetland Detention: TSS=8 tons/yr; TN=34 lbs/yr; TP=10 lbs/yr	Critical Area	Future developer; Algonquin	Ecological Consultant/ Contractor; USACE; NRCS/ SWCD; IEPA	$62,000 to design/permit/install/ maintain wetland	A deve c
5	Headwaters of Woods Creek @ Spella Park (see Figure 52)	2.9 acres	Algonquin: Spella Park (Public)	Potentially feasible wetland restoration site located along the east side of Woods Creek Reach 2 (WCR2).	Restore wetland by removing existing non-native and invasive vegetation then establish native wetland vegetation.	Filter Strip: TSS= 73% TN= 40% TP= 45%	Medium	Algonquin	Ecological Consultant/ Contractor	$6,000 to establish native vegetation	1-1 (20
6	Headwaters of Grand Reserve Creek (see Figure 52)	14.9 acres	Private Parcel	Potentially feasible wetland restoration site located on vacant parcel that is planned multifamily residential at the headwaters of Grand Reserve Creek (GRCR1). Note: site is considered a "Critical Area".	Incorporate wetland restoration into future development plans by using area as wetland detention. Implementation: 1) determine feasibility, 2) design and permit; 3) construct and plant; and 4) conduct short and long term maintenance and monitoring to ensure establishment.	Wetland Detention: TSS=14 tons/yr; TN=60 lbs/yr; TP=17 lbs/yr	Critical Area	Future developer; Algonquin	Ecological Consultant/ Contractor; USACE; NRCS/ SWCD; IEPA	$223,500 to design/permit/install/ maintain wetland	A deve c

Establish Funding Sources

- Establish a watershed fee for new development

  $250 per residential unit

  $100 per 10,000 sqft of commercial/industrial

- Establish SSA's

  Not backup SSA's – my experience is that these don't work. Too much staff time and have to involve attorney

  We have them in place but no one wants to step up and take the time to implement them

Establish Funding Sources

- Use the County Stormwater Ordinance and collect fees

  Wetland mitigation $100,000 per acre

  Fee in lieu of detention - an engineer's estimate of probable cost to construct detention, drainage system and the land

- Local Dedicated Revenue Sources

  (i.e. Telecommunication tax, Sales tax)

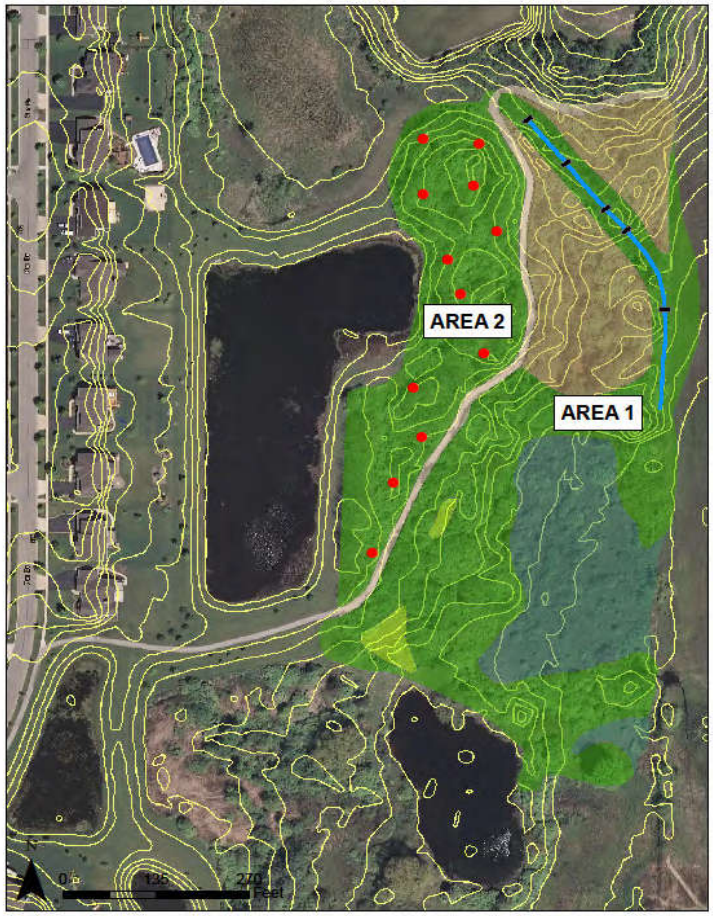
Build Projects!

- Determine which projects you can construct
- Use established funding sources to pay for projects
- Use established funding sources as your match for grants
  - IEPA 319
  - Really good plans should have critical areas listed
  - Use these as basis of application
- Use consultants that understand the process and can both design & submit a good project – it is well worth the money!
- Get development to pay for your projects

Spella Fen Buffer

Funding Source: Woods Creek Watershed Fund

$40,000 - 9 Acres



SAVANNA SEED MIXTURE

Scientific name	Common Name	Oz./Acre	Total lbs./Acre
Grasses:			
Andropogon gerardii	Big bluestem	42.6	
Bromus burgans	Hairy Wood Chess	21.3	
Elymus canadensis	Canada wild rye	69.6	
Elymus hystrix	Bottlebrush grass	34.8	
Panicum virgatum	Switch grass	51.8	
Total Grasses & Sedges		220.0	13.8
Forbs:			
Aster sagittifolius	Arrow-leaved aster	0.4	
Campanula americana	Tall bellflower	0.2	
Eupatorium purpureum	Purple joe-pye-weed	3.0	
Lobelia siphilitica	Great blue lobelia	0.5	
Monarda fistulosa	Wild bergamot	0.9	
Ratibida pinnata	Yellow coneflower	2.8	
Rudbeckia triloba	Brown eyed susan	2.6	
Zizia aurea	Golden Alexanders	5.8	
Total Forbs		18.2	1.0
Total Grasses and Forbs		238.2	14.8
Temporary Cover Crop:			
Avena sativa (Spring)	Common oats	320.0	20.0
Secale cereale (Fall)	Winter rye	320.0	20.0

MESIC PRAIRIE SEED MIXTURE

Scientific name	Common Name	Oz./Acre	Total lbs./Acre
Grasses and Sedges:			
Andropogon gerardii	Big bluestem	42.6	
Andropogon scoparius	Little bluestem	19.8	
Carex stipata	Common fox sedge	3.9	
Elymus canadensis	Canada wild rye	51.4	
Panicum virgatum	Switch grass	67.7	
Total Grasses and Sedges		186.4	12.2
Forbs:			
Aster novae-angliae	New England aster	0.7	
Echinacea purpurea	Purple coneflower	10.6	
Helenium autumnale	Sneezeweed	0.4	
Lobelia siphilitica	Great blue lobelia	0.5	
Ratibida pinnata	Yellow coneflower	2.8	
Rudbeckia subtomentosa	Sweet black-eyed Susan	1.9	
Monarda fistulosa	Wild bergamot	0.7	
Solidago riddellii	Riddell's goldenrod	0.7	
Zizia aurea	Golden Alexanders	4.4	
Total Forbs		22.6	1.4
Total Grasses, Sedges, Forbs		217.9	13.6
Temporary Cover Crop:			
Avena sativa (Spring)	Common oats	320.0	20.0
Secale cereale (Fall)	Winter rye	320.0	20.0

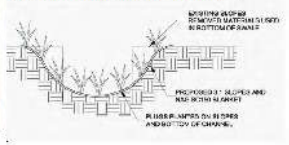
SWALE PLUGS (500 lf by 8 feet wide/.1 acres)

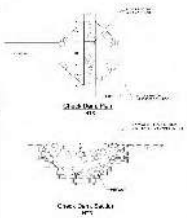
Scientific name	Common Name	Total#
Carex vulpinoidea	Fox sedge	150
Spartina pectinata	Prairie cordgrass	150
Iris virginica	Blue flag iris	300
Total Plants		600

Trees (2.5" Caliper)

Scientific name	Common Name	Total#
Acer rubrum	Red maple	4
Quercus bicolor	Swamp white oak	4
Quercus rubra	Red oak	4
Total Trees		12

Note: All trees will be purchased and installed by Algonquin





Spella Park Fen Restoration Map

Village of Algonquin

Spella Park
Algonquin, Illinois

Legend

AREA 1

Vegetation Restoration Types	Acreage
Wet Prairie Remnant	1.6
Fen (Remnant)	0.1
Mesic Prairie Restoration	4.0
Savanna Restoration	1.6
Pathway	
Swale	0.1
Check Dams	
2' Topographical Lines	

AREA 2

Vegetation Restoration Types	Acreage
Mesic Prairie Restoration	2.4
Trees (planted)	

Data Sources:
Aerial: Village of Algonquin (2009)

Coordinate System:
IL State Plane East

AES Project #: 12-1027

Spella_Park_Fen_Restoration.mxd

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www.appliedeco.com

Last modified:
Feb 28, 2013
Mapped by: mlb

Sheet 1 of 1

Blue Ridge Detention Retrofit

Funding Source: Wetland Mitigation Funds

$88,000 5 Acres

Woods Creek Streambank Stabilization

Funding Source: 319 Grant + Local Funds $271,000

3,000lf

Woods Creek Streambank Stabilization

Funding Source: Local Sales Tax Funds

3,000lf

- Follows through and makes sure it happens
- Ensures on-going maintenance gets done. If you don't commit to this FORGET IT.
- Enacts long term protections

  Natural Areas Protection Ordinance
- This key person or team is the most critical for success!

Questions or Comments?