



Environmental and
Ecological Planning
Advisory Committee

February 18, 2021

Compensation
Wetland
Monitoring

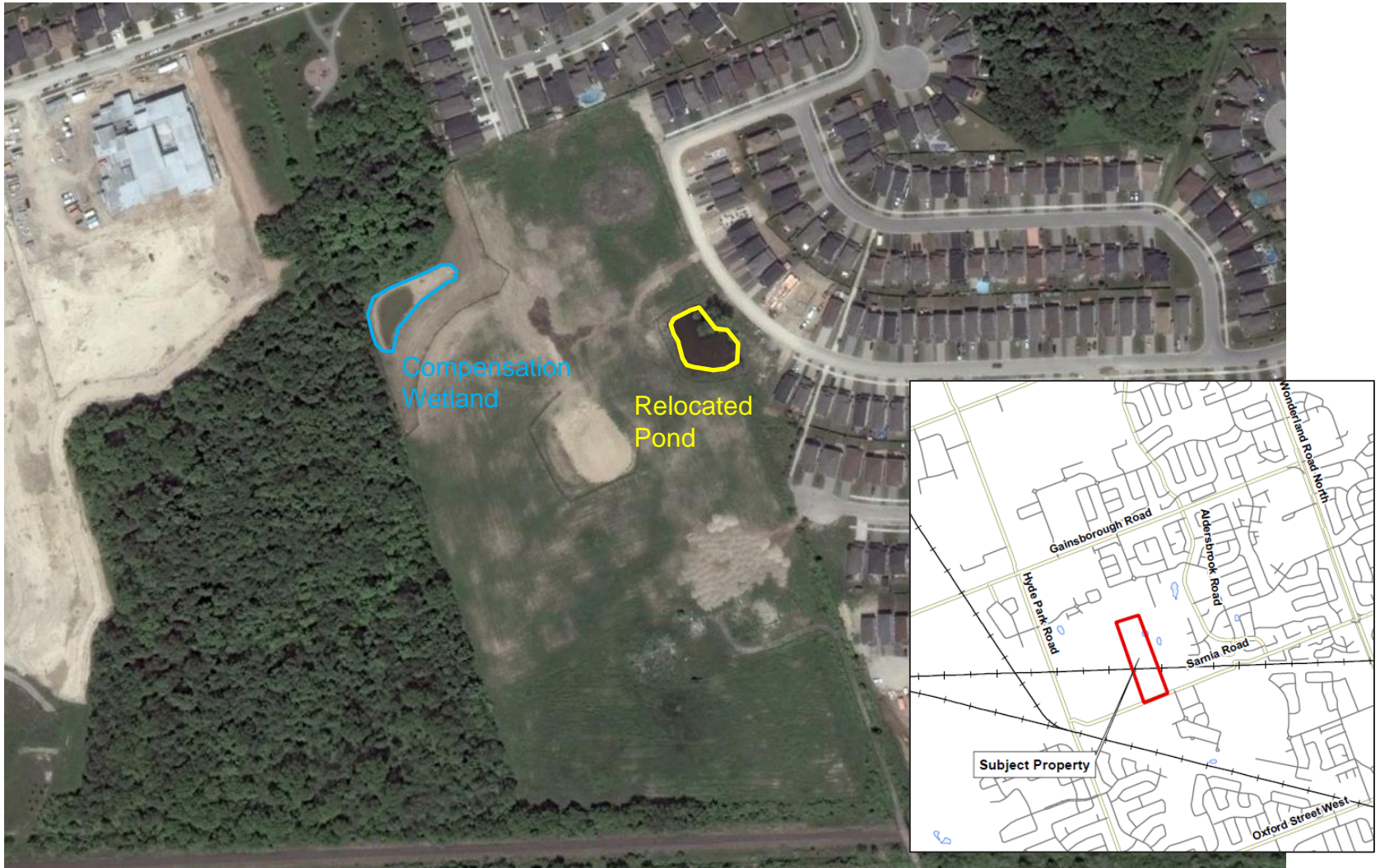
905 Sarnia Road,
London



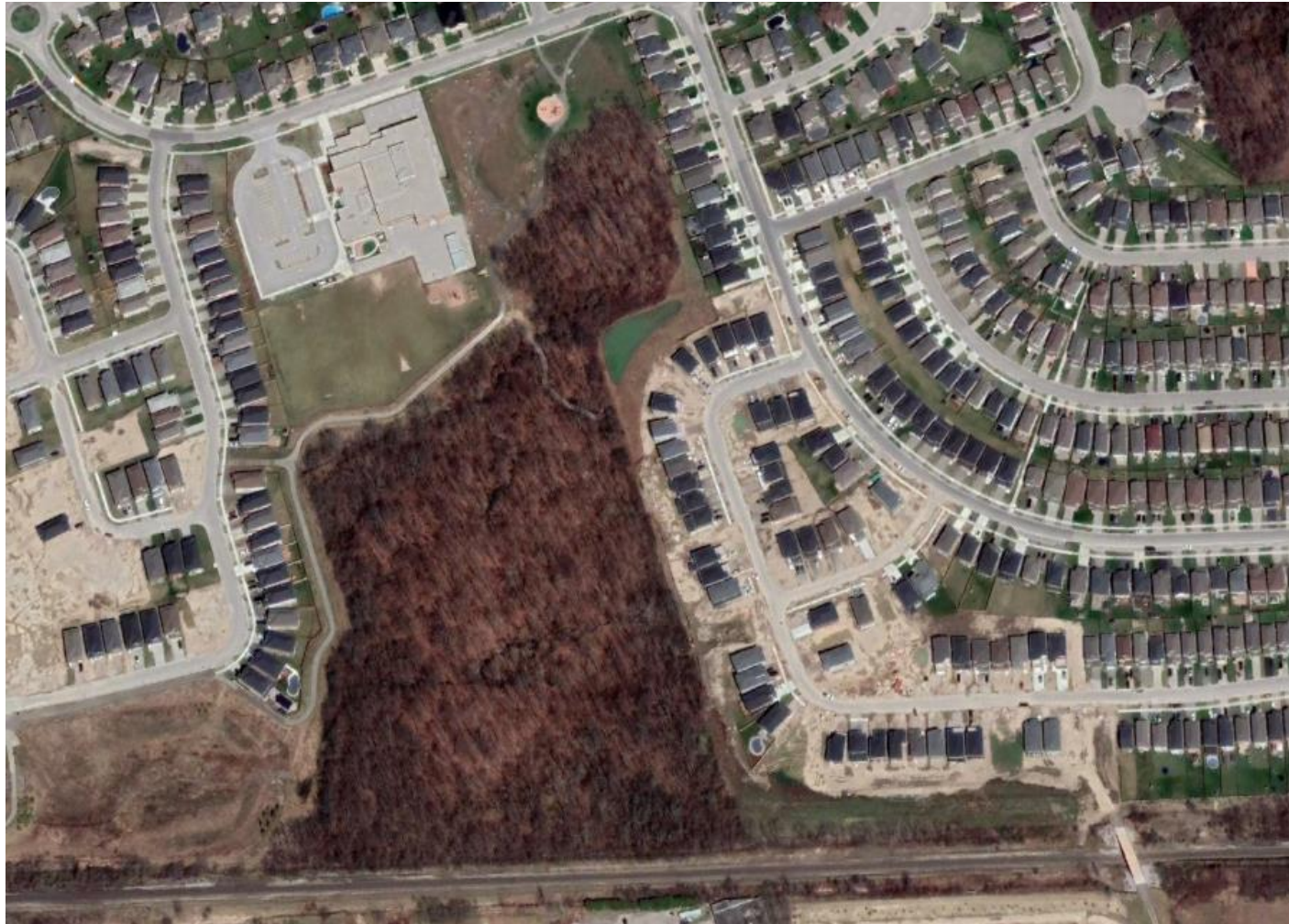
Agenda

1. Site History
2. Objectives
3. Methods
4. Findings
5. Recommendations

Site History – June 2016



Site History April 2021



Timeline

WETLAND CONSTRUCTION

November 2015

- Grading new wetland
Transfer of a sample of wetland substrate and habitat features (e.g. root wads)

May 2016

- Native seed planting

July 2016

- Wildlife transfer
- Soil transfer
- Vegetation material transfer

ANNUAL MONITORING

- 2016
- 2017
- 2018
- 2020



Summary of Wildlife Relocations

Species	Calico Crayfish	Green Frog	Northern Leopard Frog	Other Invertebrates	Brook Stickleback	Eastern Newt	Midland Painted Turtle	Snapping Turtle
No. of individuals	>18,000	>4,000	>1,000	>28,000	>11,000	21	10	3



Monitoring Objectives

2016-2018

- Three-year ecological monitoring implemented as a condition of development approval to track:
 - Water levels
 - Vegetation establishment
 - Transfer of wildlife
- Monitoring implemented by proponent

2020

- Monitoring extended to provide long-term results and inform future wetland creation projects
- Implemented by **Environmental and Ecological Planning Advisory Committee** in partnership with **Nature London**

Methods

Type	Date(s) of Field Work
Vegetation Survey	
Botanical Inventory	June 26, 2020
	September 10, 2020
Wildlife Surveys	
Amphibian Surveys	April 8, 2020
	May 15, 2020
	June 29, 2020
Turtle Basking Surveys	May 4, 2020
	May 20, 2020
	June 26, 2020
Marsh Breeding Birds	June 7, 2020
	June 26, 2020
Terrestrial Crayfish Chimney Surveys	June 26, 2020
Terrestrial Insects	June 26, 2020
Benthic Invertebrates	September 1, 2020
Incidental Wildlife Observations	During all field visits
Aquatic Survey	
Water Level Monitoring	June 26, 2020

Results - Vegetation

- Wetland emergent vegetation (cover and species) is increasing (cattails, bulrushes and sedges)
- Seeded native upland grasses (2016) are increasing (cover and species) (old switch panicgrass, yellow Indian grass, big bluestem)
- Canada thistle (invasive) is decreasing
- Phragmites (invasive) is absent



Type	2017	2018	2020
Native species	27	35	41
Non-native species	18	22	35
Total species	45	57	76

Results - Wildlife

Monitoring Year			COMMON NAME
2017	2018	2020	
AMPHIBIANS			
X			Spotted Salamander
X	X		Tetraploid Gray Treefrog
X	X	X	Northern Green Frog
X	X	X	Northern Leopard Frog
X	X		Spring Peeper
REPTILES			
X	X	X	Midland Painted Turtle
X		X	Eastern Gartersnake
	X	X	Snapping Turtle
FISH			
X	X		Brook Stickleback
X	X	X	Calico Crayfish
	X	X	Goldfish



- **Wetland birds (foraging or breeding):** Canada Goose, Mallard, Spotted Sandpiper, Great Blue Heron, Barn Swallow, Rough-winged Swallow, Red-winged Blackbird, and Common Yellowthroat.
 - Common Yellowthroat was a new species breeding species observed in 2020
- **Insects:** diversity of Odonata and Butterflies increased from 2017 to 2020

Results - Benthics

- 2020 was the first year benthic data was collected
- Moderate numbers of organisms and taxa richness that reflect a relatively poor-quality warmwater benthic habitat
- No pollution-sensitive taxa organisms (mayflies, stoneflies, and caddisflies) were collected from the pond
- Chironomids and oligochaetes (tolerant of nutrient enrichment) were dominant organism type





Monitoring

- Continue long-term monitoring once every 2-3 years
- Additional surveys are required to determine use by woodland amphibians
- Include surveys for fish, such as minnow traps to increase detection of crayfish

Recommendations

Enhancements

- Plant emergent, floating-leaved and submergent vegetation to improve water quality and provide habitat (e.g. egg attachment sites for amphibians)
- Construct turtle testing habitat, monitoring use, and protect nests



Questions?

