



TIME TO EXPLORE

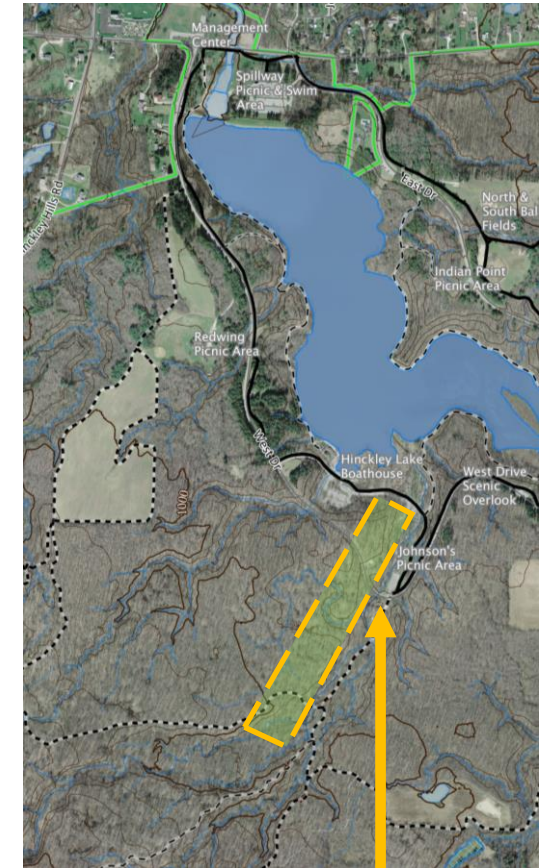
Cleveland Metroparks

Johnson's Creek Restoration Project

Hinckley Reservation

January 14, 2021

Project Location



Project Area

Identified Issues – Johnson's Creek



Fish passage barrier



Disconnected Floodplain



Streambank Erosion

Proposed Solutions – Johnson's Creek

Existing All Purpose Trail

Project Area

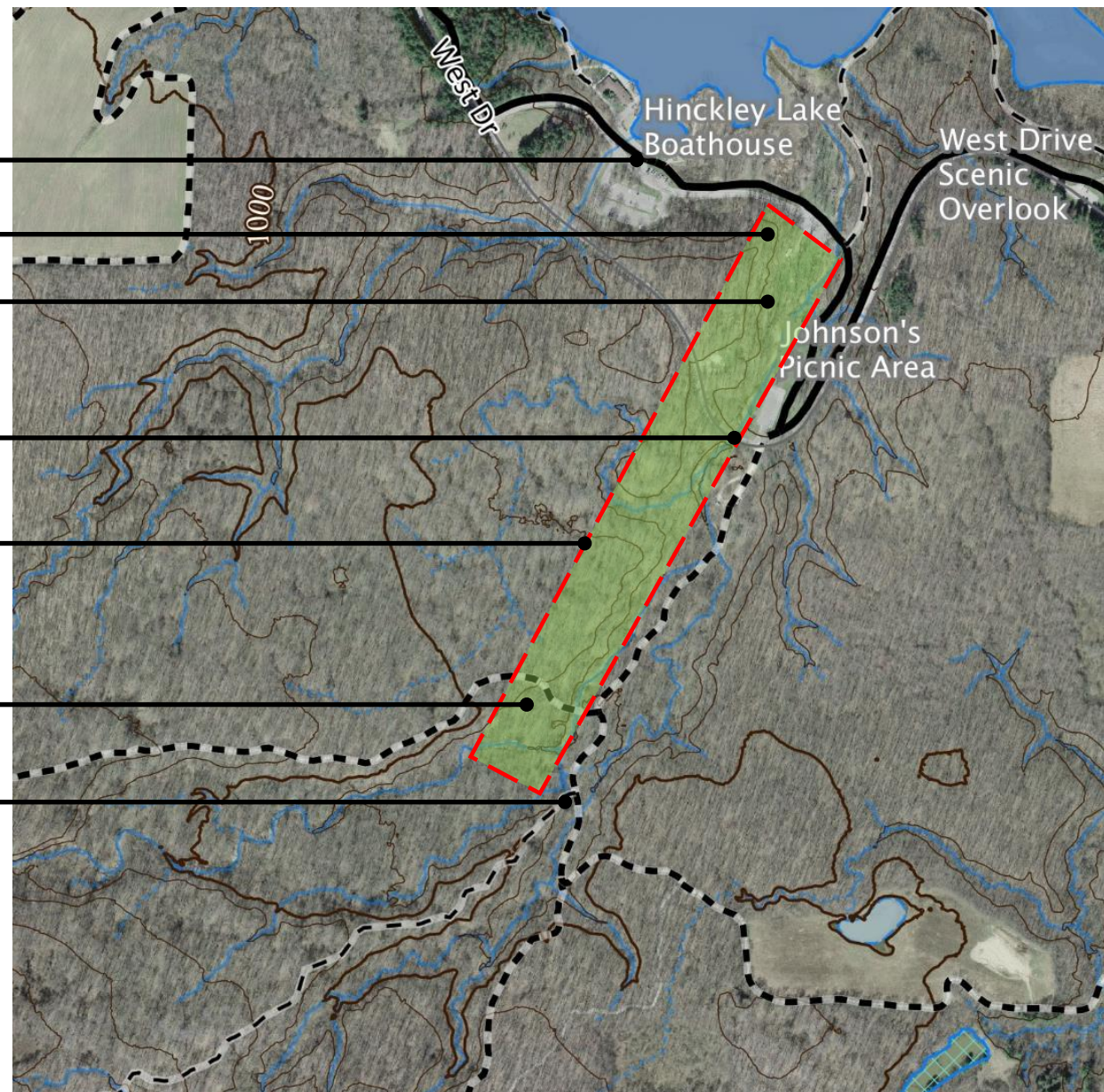
Install stream bed grade control structures to prevent further downcutting

Replace existing box culvert to enable fish and macroinvertebrate passage

Restore +/- 650 lineal feet of streambank using natural channel design and bioengineering slope stabilization techniques

Provide floodplain connection

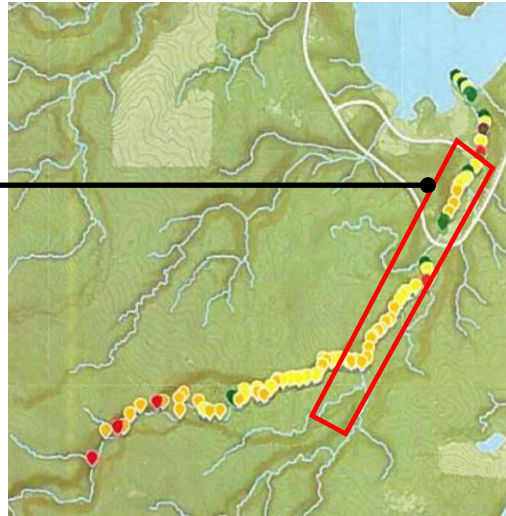
Existing Bridal Trail



Due Diligence– Johnson's Creek

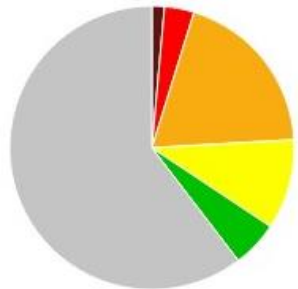
Bank Erosion Hazard Index (BEHI)-2014

Project Area



Johnson's Creek (BEHI)

Total Length Assessed 13,111 lf



Extreme: 186 lf
Very High: 440 lf
High: 2,530 lf
Moderate: 1,346 lf
Low: 690 lf
No rating: 7,916 lf

+/- 650 lf

Index of Biological Integrity- 2011

West Drive Culvert

West Drive Culvert- Upstream (2011)

Poor Rating

Headwater IBI Calculation

River Code: 13-100 River Mile: 23.72 Date: 7/12/11
 River: Johnson's Creek Above Barron Location: Hocking Reservation
 Drainage Area (sq mi): 1.34 Collectors: M. Burdette, B. Mack, A. McQuaid
 W. Rieker, B. Conrad, S. Norris, D. Harrelson, C. Weldon, D. Long

IBI Metric	Value	Score	Low-End
Number of Native Species	3	1	N/A
Number of Minnow Species	2	3	
Number of Headwater Species	1	1	
Number of Sensitive Species	0	1	
Number of Darter & Sculpin Species	0	1	
Number of Simple Lithophilic Species	1	1	
Proportion as Tolerant	90.54%	1	
Proportion as Omnivores	0%	5	
Proportion as Pioneering Species	60.87%	1	
Proportion as Insectivores	9.66%	1	
Proportion with DELT Anomalies	0%	5	
Relative Number minus Tolerants	32.8	1	

Total IBI Score (Unadjusted): 22.0

Total IBI Score (Low-End Adjusted): N/A

"Poor"

Upstream

7 Total Species Identified

West Drive Culvert- Downstream (2011)

Good Rating

Headwater IBI Calculation

River Code: 13-100 River Mile: 23.72 Date: 7/12/11
 River: Johnson's Creek Below Barron Location: Hocking Reservation
 Drainage Area (sq mi): 1.40 Collectors: M. Burdette, B. Mack, A. McQuaid, D. Rieker

IBI Metric	Value	Score	Low-End
Number of Native Species	13	5	N/A
Number of Minnow Species	4	3	
Number of Headwater Species	1	1	
Number of Sensitive Species	1	3	
Number of Darter & Sculpin Species	2	5	
Number of Simple Lithophilic Species	3	5	
Proportion as Tolerant	83.52%	1	
Proportion as Omnivores	7.14%	5	
Proportion as Pioneering Species	70.63%	1	
Proportion as Insectivores	13.4%	3	
Proportion with DELT Anomalies	0	5	
Relative Number minus Tolerants	211.56	5	

Total IBI Score (Unadjusted): 42.0

Total IBI Score (Low-End Adjusted): N/A

"Good"

Downstream

24 Total Species Identified

Grant Application/Project Goals– Johnson's Creek

Ohio Environmental Protection Agency, Section 319 (h) grant

Grant Award (\$285,467) + Capital Match (\$190,313) = \$475,780

- Restore +/- 650 lf of streambank using Natural Channel Design
- Provide grade control in the streambed of Johnson's Creek
- Replace existing box culvert to enable fish and macroinvertebrate passage
- Reduce sediment and nutrient loads in Johnson's Creek
- Reduce routine flooding atop West Drive
- Prepare Johnson's Creek to better adapt to climate change, including severe storms

Project Schedule– Johnson's Creek

Project Schedule

- Request for Qualifications were issued: December 2020
- Request for Proposals will be issued: January 19, 2021
- Recommended award of Design-Build contract: February 18, 2021
- Design and Permitting : March - December 2021
- Construction: January-July 2022

Project Support– Johnson's Creek



Ohio Environmental Protection Agency, Section 319 (h) grant



Partners for Educational and Public Outreach Deliverables

TIME TO EXPLORE

Cleveland Metroparks

Johnson's Creek Restoration Project

Hinckley Reservation

January 14, 2021

