



**TIME TO  
EXPLORE**  
Cleveland Metroparks

Bonnie Park:  
Ecological  
Restoration & Site  
Improvement Project

July 18, 2018



# Project Location

Bonnie Park @  
Mill Stream Run  
Reservation

City of Strongsville

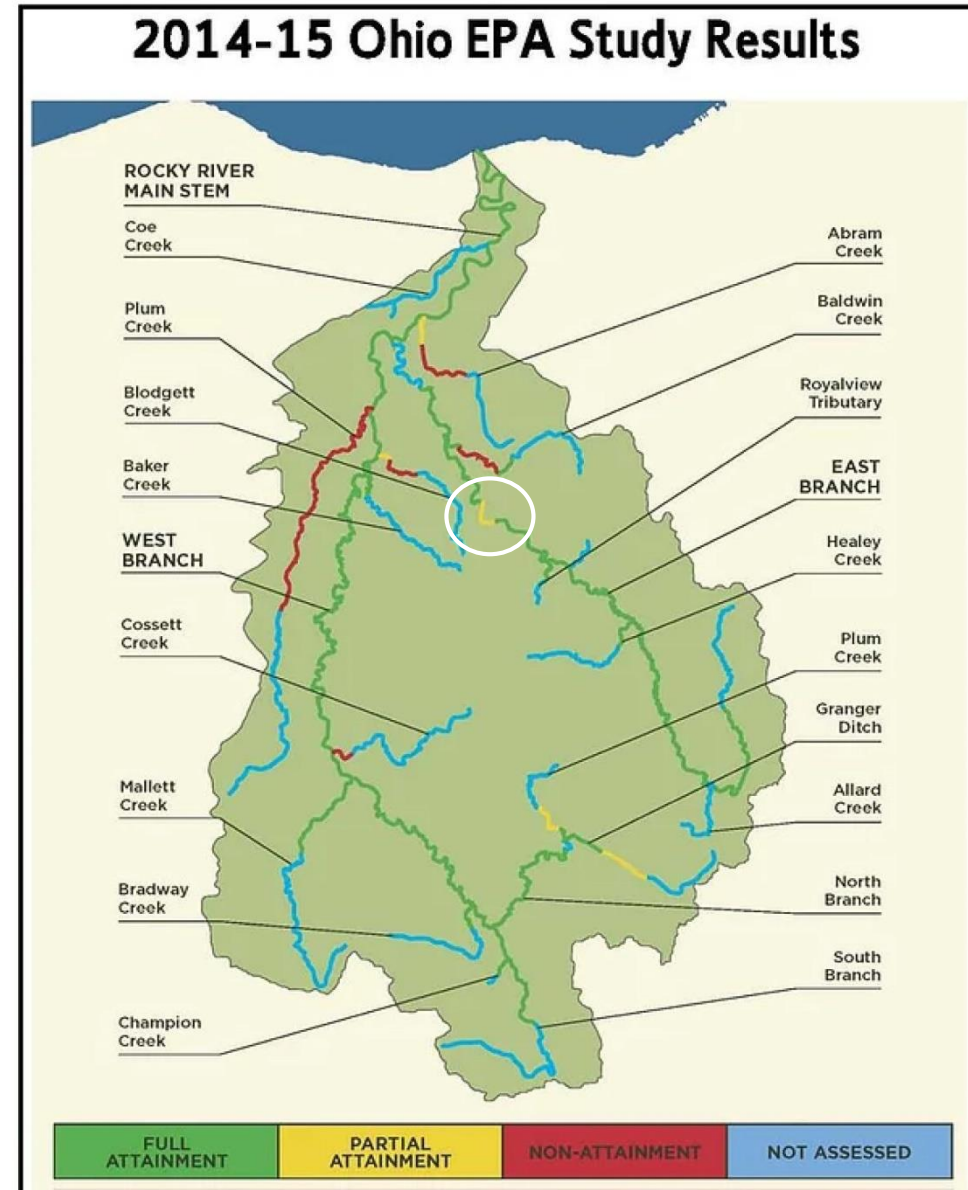


# Need Identified

- Extreme woody debris jam across river



- Partial attainment of East Branch Rocky River (white circle)





# East Branch Rocky River

- Impairments – Lowhead dam, lack of riparian buffer, disconnected floodplain



Lowhead dam



No riparian buffer



Mowed to river edge



# Nearby wetlands & opportunities



Vernal pool reference site



Unused ball field



Poorly drained soil



# Stormwater mgt opportunities



Poorly designed box culvert



Underutilized pavement



Mowed swale

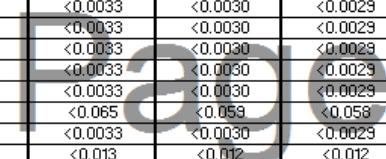


# Due Diligence

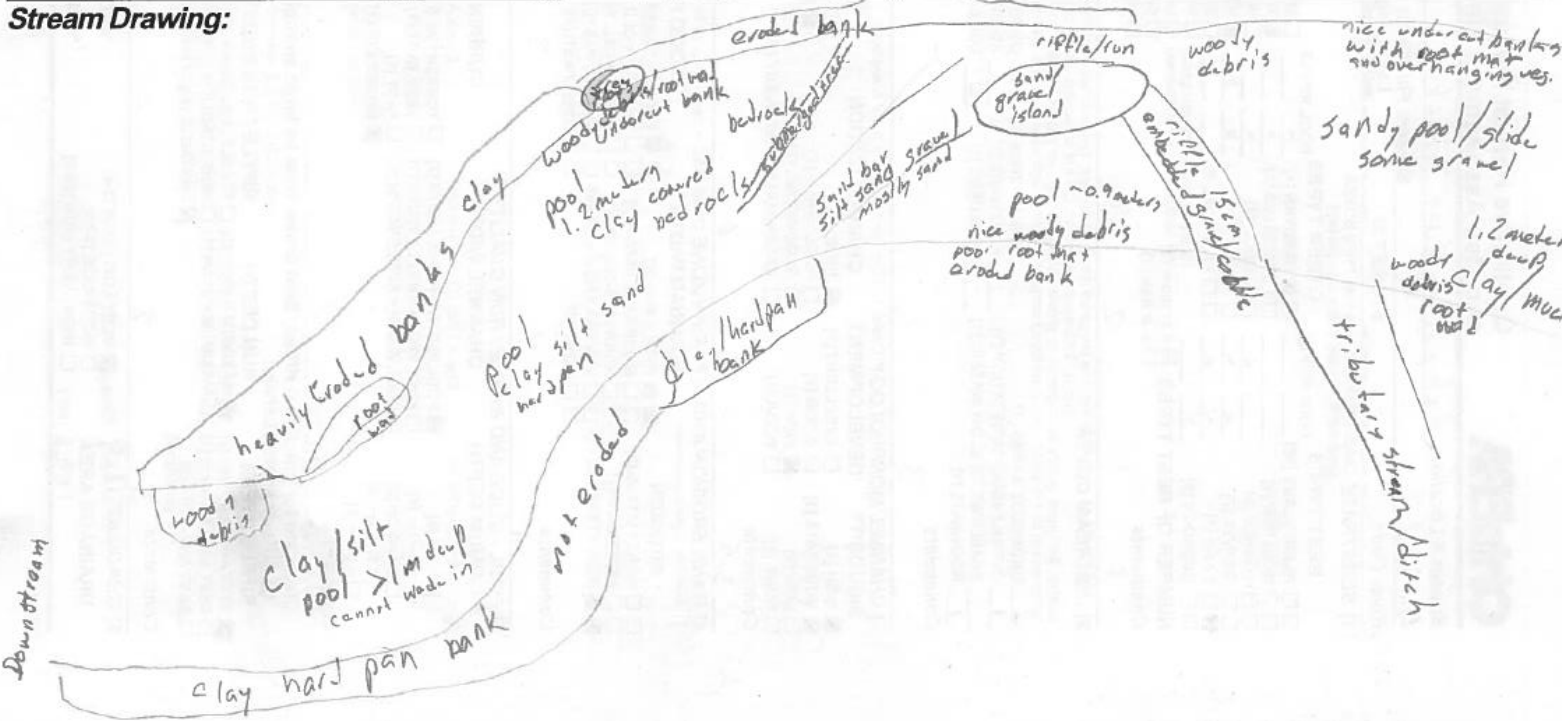
- Sediment sampling
- Fish sampling
- Instream habitat evaluation
- Macroinvertebrate sampling



	A	B	C	D	E	F
1	<b>Table 1</b>					
2	<b>Volatile Organic Compounds Analytical Results Summary</b>					
3	River Name: Rocky River Mill Stream Branch					
4	Sample Location: Bonnie Park, above dam					
5				Pace Analytical		
6	Parameter	VAP Standards	USEPA Regional Screening Levels (TR = E-	SP-170628001	SP-170628002	SP-170628003
7		GDCS Residential Land Use *	Resident Soil	0-6in bgs 6/28/2017	0-6in bgs 6/28/2017	0-6in bgs 6/28/2017
8	<b>Volatile Organic Compounds-VOCs</b>					
9	Acetone	110,000	61,000	<0.065	<0.059	<0.058
10	Acrolein	0.39	0.14	<0.065	<0.059	<0.058
11	Acrylonitrile	5.7	2.5	<0.065	<0.059	<0.058
12	Benzene	26	12	<0.0033	<0.0012	<0.0012
13	Bromochloromethane	NE	150	<0.0033	<0.003	<0.0029
14	Bromodichloromethane	6.8	2.9	<0.0033	<0.0030	<0.0029
15	Bromofrom	1,200	190	<0.0033	<0.0030	<0.0029
16	Bromomethane	19	6.8	<0.0033	<0.0030	<0.0029
17	Carbon disulfide	740	770	<0.0033	<0.0030	<0.0029
18	Carbon tetrachloride	15	6.5	<0.0033	<0.0030	<0.0029
19	Chlorobenzene	700	280	<0.0033	<0.0030	<0.0029
20	Chloroethane	2,100	14,000	<0.0033	<0.0030	<0.0029
21	Chloroform	7.4	3.2	<0.0033	<0.0030	<0.0029
22	Chloromethane	300	110	<0.0033	<0.0030	<0.0029
23	Dibromochloromethane	17	83	<0.0033	<0.0030	<0.0029
24	1,1-Dichloroethane	83	36	<0.0033	<0.0030	<0.0029
25	1,2-Dichloroethane	11	4.6	<0.0033	<0.0030	<0.0029
26	1,1-Dichloroethene	360	230	<0.0033	<0.0030	<0.0029
27	1,2-Dichloropropane	23	10	<0.0033	<0.0030	<0.0029
28	cis-1,2-Dichloroethene	NE	160	<0.0033	<0.0030	<0.0029
29	trans-1,2-Dichloroethene	370	1,600	<0.0033	<0.0030	<0.0029
30	cis-1,3-Dichloropropene	NE	18	<0.0033	<0.0030	<0.0029
31	trans-1,3-Dichloropropene	NE	NE	<0.0033	<0.0030	<0.0029
32	Ethylbenzene	130	58	<0.0033	<0.0030	<0.0029
33	2-Hexanone	NE	200	<0.065	<0.059	<0.058
34	n-Hexane	140	610	<0.0033	<0.0030	<0.0029
35	Methylene chloride	750	350	<0.013	<0.012	<0.012
36	Methyl ethyl ketone	28,000	27,000	<0.016	<0.014	<0.014
37	Methyl Methacrylate	2,400	4,400	NA	NA	NA
38	4-Methyl-2-pentanone	3,400	33,000	<0.016	<0.014	<0.014
39	Methyl tert-butyl ether	1,100	470	<0.0033	<0.0017	<0.0016
40	2-Nitropropane	0.32	0.14	NA	NA	NA
41	Pentachloroethane	110	77	NA	NA	NA
42	Propionitrile	NE	NE	NA	NA	NA
43	Styrene	870	6,000	<0.0033	<0.0030	<0.0029
44	1,1,1,2-Tetrachloroethane	46	20	<0.0033	<0.0030	<0.0029
45	1,1,2,2-Tetrachloroethane	14	6	<0.0033	<0.0030	<0.0029
46	Tetrachloroethene	170	81	<0.0033	<0.0022	<0.0022
47	Toluene	820	4,900	<0.0033	<0.0030	<0.0029
48	1,2,4-Trichlorobenzene	150	58	<0.0033	<0.0030	<0.0029
49	1,1,1-Trichloroethane	640	8,100	<0.0033	<0.0030	<0.0029
50	1,1,2-Trichloroethane	26	1.5	<0.0033	<0.0030	<0.0029
51	Trichloroethene	11	4.1	<0.0033	<0.0020	<0.0020
52	Trichlorofluoromethane	1,200	23,000	<0.0033	<0.0030	<0.0029
53	1,2,3-Trichloropropane	NE	0.051	<0.0033	<0.0030	<0.0029
54	1,1,2-Trichlorotrifluoroethane	NE	40,000	<0.0033	<0.0030	<0.0029
55						

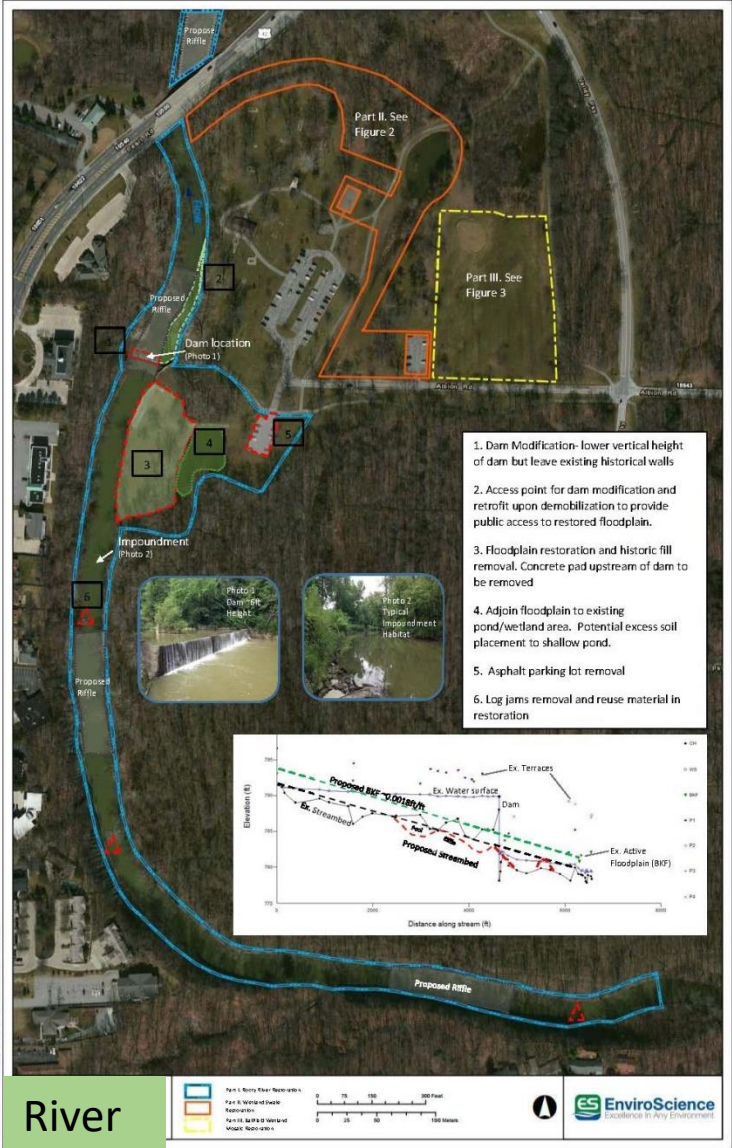


Stream Drawing:





# Conceptual Design





# Historical Resources

- Site of Old Albion
- Dam was associated with mill complex
- WPA stone walls line river
- Bridge abutments



7/28/32 Dr. Clyne's Mill Neg 475



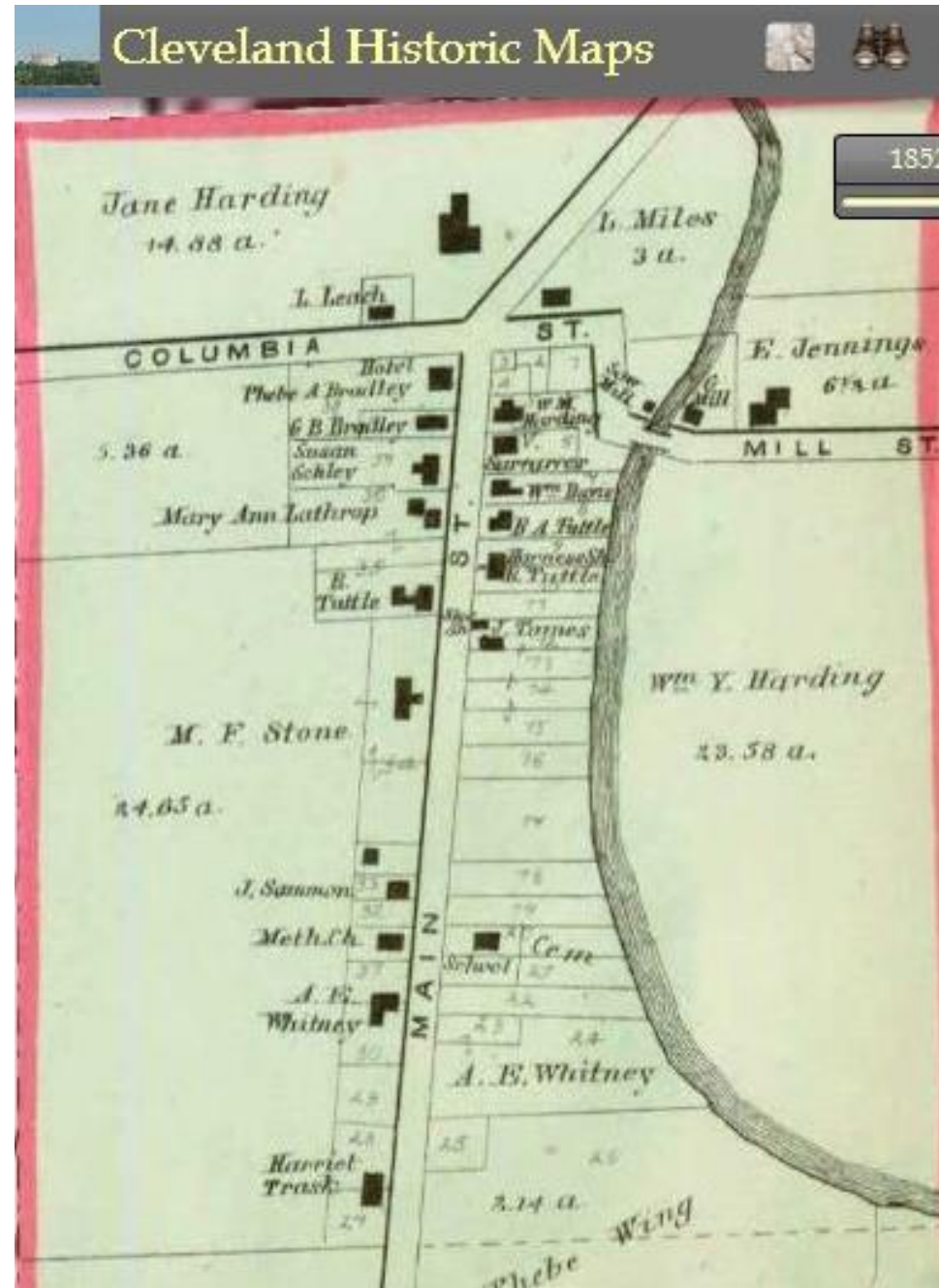
7/28/32 Dr. Clyne's Mill Neg 476



7/28/32 Old Albion Rd Bridge Neg 477



7/28/32 Old Mill - Dr. Clyne's property Neg 471





# Grant Application

Water Resources Restoration Sponsor Program (WRRSP) through  
Ohio Environmental Protection Agency

- Restore 2-3 acres of wetland
- Remove lowhead dam (entirely or partially)
- Restore 3,400 linear feet of river channel
  
- \$1,880,239.65





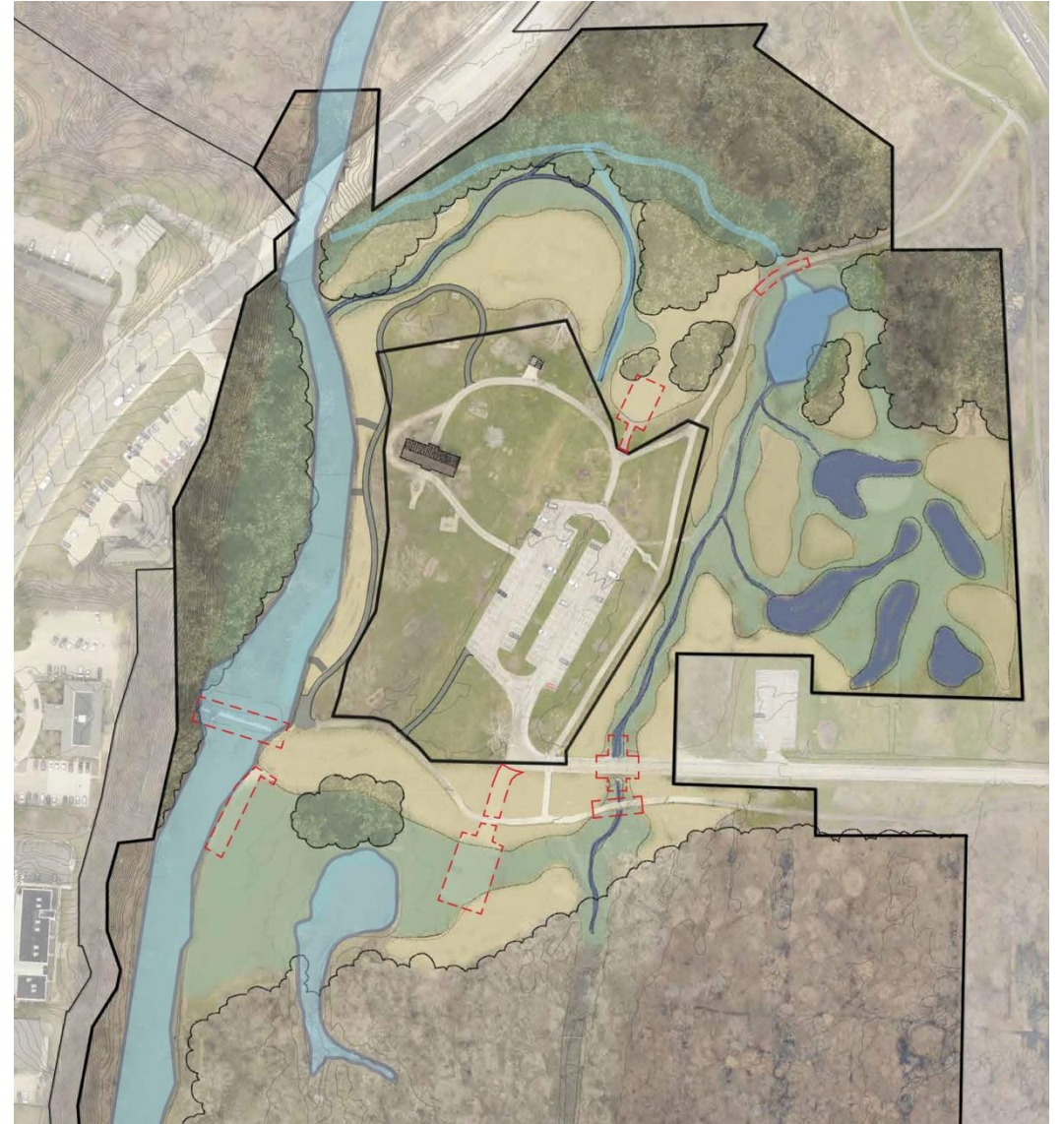
# Criteria Document

Grant scope includes:

- Partial or complete dam removal
- Instream restoration
- Floodplain connection
- Riparian buffer enhancement
- Create emergent wetlands
- Stormwater management improvement

Outside grant scope, but included in request:

- Natural surface trail along river
- Incorporate fishing areas
- Provide viewing deck





# Long-term protection



## Environmental Covenant

- 70 acres
- Protects existing high-quality wetlands
- Protects restoration investment



# Schedule

- Award design-build contract: August 2018
- Design: Sept 2018 – March 2019
- Construction: April 2019 – January 2020
  
- *In partnership with:*

