

## APPENDIX 12

### Lower Alum Creek Watershed Tributary Morphology Data

*These data were collected through field visits to selected tributaries in August 2004, and map analysis.*

Tributary Name	Confluence River Mile	Stream length (mi.)	Watershed size (sq. mi.)	Bank Height Ratio	Map analysis observations
Unnamed	26.13	1.23	0.6	--	Tributary streams between 26.13 and 24.12 (north of Polaris Parkway) share common characteristics: they are dominated by ravine systems that then cut into a wide floodplain before entering Alum Creek. While the ravines would limit encroachment or modification, most of the tributaries have likely been ditched through agricultural fields in the floodplain. This land use is now being converted to suburb, with further modifications, including on-line stormwater detention, increased stormwater flows, and riparian encroachment.
Unnamed	25.95	3.92	1.6	3.5 (with intermediate terraces)	<i>Per field observations:</i> Reach observed had likely been straightened, but bank erosion and recovery of floodplain and sinuosity evident. Prone to further vertical incision, due to the size of the stream system and existing incision. See also description for 26.13
Unnamed	25.50	2.80	2.1	--	Was in attainment of WWH aquatic life use in 1999, but new development activity has affected the stream via delivery of sediment and stormwater and direct modifications due to road crossings. Possible that the stream had previously been straightened for agricultural purposes. See also 26.13.
Unnamed	25.08	3.01	0.7	1; 1.5; 1.3	<i>Per field observations:</i> Erosion and lateral movement (instability) in some areas, but others maintain good floodplain access. Has been modified as it enters the floodplain, but recovery is evident. See also 26.13.
Unnamed	24.35	1.25	0.4	--	Many ponds in this subwatershed – heavily altered with development of homes and golf course. Some portions have been straightened. See also 26.13.
Unnamed	24.12	1.50	0.6	--	Old map shows that headwaters may retain woodlots. See also 26.13
Unnamed / Indian Run	23.47	3.80	3.2	--	Dammed to create reservoir for Westerville backup water supply. Headwaters are in flat areas – possibly have been straightened and contain old field tiles for agricultural drainage. Encroachment from new development may be limited – map analysis appears to show development was built around (not over) stream.
Unnamed	23.34	1.29	0.4	--	Appears straightened across Alum Creek floodplain, although city of Westerville has preserved some riparian buffer
Unnamed	22.97	2.42	1.0	2	<i>Per field observations:</i> Flows near Germain amphitheater and under Worthington Galena Road. Has been straightened as agricultural ditch, and is still incising. Near Polaris Parkway, runs through parcel that may be development soon.
Unnamed	22.42	3.55	1.3	--	Ravine system. County Line Road being extended near it.
County Line Run	21.50	1.60	0.8	--	County Line Run and Alkire Run look geologically similar: low gradient flow through Alum Creek floodplain, probably artificially straightened in the past.
Alkire Run	Tributary to County Line Run	1.8	1.0	1.7	Not severely prone to further incision because the stream is very small (limited flow power). Has not created a “valley” for itself, so easy to build near. Clay / silt bottom, perhaps naturally.
Noble Run	20.34	6.11	3.9	--	Flows through Sharon Woods – good sinuosity in that reach, but has received stormwater impacts from upstream development in the Polaris area.
Meacham Run	19.67	6.34	3.9	--	Has a confined valley, which may have prevented severe encroachment as developments were built around it. Stormwater impacts, but good recovery as it passes under I-270.

Spring Run	17.22	7.20	7.8	3.5; 2	<i>Per field observations:</i> Highly developed, some straightening in the past, bank erosion and placement of rip rap to prevent further erosion. Quality of riparian corridor improves inside I-270 with a few neighborhood parks. Some have high shale cliffs.
Spring Run West	17.15	3.10	2.3	--	Has a defined valley, which might have helped limit encroachment as suburbs were built around it. Perhaps modified as it flows through area of light industry north of SR 161.
Kil-bourne Run	16.34	2.64	1.7	3	<i>Per field analysis:</i> Some riparian buffer present (near SR 3), but surrounded by suburban development. Channel has widened and banks are eroding due to stormwater impacts. Riprap has been placed at outside bends, and some grade control structures were created in the stream channel. Channel does not appear to be incising still, but rather in state of recovery (redeveloping meander and floodplain).
Unnamed	16.16	.057	0.2	--	Possibly straightened for past agricultural purposes
Unnamed	15.04	1.43	0.6	--	
Unnamed	14.52	1.84	1.3	--	Tribs 14.52 – 9.74 (Morse Road to Mock Road): have similar features. Headwaters are in old developments, possibly placed in storm sewers (some have “open ditches”, especially farther south). As they flow west towards Alum Creek, run through significant ravines that may be as of yet undisturbed.
Unnamed	14.12	1.05	1.0	--	See description for 14.52
Unnamed	13.58	0.79	0.6	--	See description for 14.52
Unnamed	13.23	1.48	1.5	--	See description for 14.52
Unnamed	12.12	0.78	1.1	--	See description for 14.52
Unnamed	11.60	0.95	0.3	--	See description for 14.52
Argyle Run	9.74	2.4	2.5	--	See description for 14.52
American Ditch	Unknown	2.6	0.7	--	Heavily modified: Most of this stream is underground in a pipe, though few areas are above ground.
Bliss Run	5.50	0.83	2.6	--	Heavily modified: upper half of the stream is underground in stormwater pipes. Becomes above-ground at Livingston Avenue, but heavily straightened, and then dammed at College Avenue to form the “twin lakes.”
Unnamed	3.66	1.16	0.7	--	Flows through abandoned land fill area, fairly low gradient. Crosses Rte 104 into Three Creeks Park
Unnamed	1.48	1.23	0.6	--	Low gradient, appears straightened for agricultural purposes. Flows through Smith Farms.