E.2.

Winona Prioritized Sites

Site	Location	Land Use	Issues	Recommendations	Impact rating	Sediment (t/yr)	Phosphorus (lbs/yr)	Phosphorus (kg/yr)	BMP Cost Estimate	BMP Annual Maintenance Cost Estimate	10-yr Cost	10-yr Cost for TP Removed ($/kg)	Cost	Technical Level
2-13 A	Shoreline along Winona Rd, guardrail near 692 Winona Rd	State Road	Slight surface erosion, undercut shoreline, erosion on the shoreline, road is slumping toward lake	Need to armor and stabilize shoreline where Rd is closest to lake	High	78.8	66.9	30.3	$25,000	$200	$27,000	$890	High	High
2-13 B	Ditch across from site 2- 13 A on Winona Rd	State Road	Slight surface erosion, moderate ditch erosion, bare soil	vegetate ditch and armor with stone	Medium	11.3	10.1	4.6	$1,500	$200	$3,500	$764	Medium	Medium
2-19	Catchbasins on Hawkins Pond Rd + Piper Rd median	Town Road	Lots of winter sand, 2 catchbasins on corner that drain to Hawkins Pond outlet, road slopes to this intersection with lots of winter sand entering catchbasins, slight ditch erosion, slight surface erosion, slight road shoulder erosion	Create ditch to sediment retention area to collect runoff before entering CB, remove winter sand in early spring to reduce sediment inputs, OR redirect outlet of CB away from lake	Medium	6.3	5.4	2.4	$1,275	$100	$2,275	$929	Medium	High
2-12 A	Winona Rd at boat launch near Snake River	Municipal/Publi	Slight surface erosion, slight road shoulder erosion, bare soil, winter sand, water flows off Rd and erodes boat launch parking areas	Create swales to direct water from Rd into woods, add new surface material (pea stone?) to parking areas, water retention swales	Medium	17.1	14.5	6.6	$4,380	$250	$6,880	$1,046		
2-14	Ditch on Winona	State Road	Moderate ditch erosion, slight surface erosion, slight road shoulder erosion	Armor ditch with stone, vegetate ditch	Medium	8.4	7.1	3.2	$2,000	$150	$3,500	$1,087	Medium	Medium
2-16 A	Hawkins Pond Boat Launch	Boat access	Slight surface erosion, slight road shoulder erosion, bare soil, winter sand, water from Rd is eroding areas of the boat launch parking lots and into Pond	Add new surface material (crushed stone to prevent sediment movement off site, install runoff diverter (waterbar), rain garden near launch/slope, infiltration trench to collect runoff before it enters parking area	Medium	11	9.4	4.3	$3,684	$200	$5,684	$1,333	High	Medium
2-11	Purdy property- Bay View	Residential	Lack of shoreline vegetation, slumping streambank, bare soil, slight surface erosion	Add vegetation, stabilize streambank (should not just add rock), water retention swales (move runoff away from stream), establish buffer, add to buffer, reseed bare soils and thinning grass	Medium	2.1	2.1	1.0	$3,920	$75	$4,670	$4,903	High	High
2-12 B	Winona Lake / Snake River boat launch at Winona Rd.	Municipal/Publi	Moderate surface erosion, bare soil	Install runoff diverter (waterbar), rain garden on either side of launch	Medium	0.6	0.6	0.3	$1,380	$50	$1,880	$6,908	Medium	Medium

E.2.

Winona Prioritized Sites

Site	Location	Land Use	Issues	Recommendations	Impact rating	Sediment (t/yr)	Phosphorus (lbs/yr)	Phosphorus (kg/yr)	BMP Cost Estimate	BMP Annual Maintenance Cost Estimate	10-yr Cost	10-yr Cost for TP Removed ($/kg)	Cost	Technical Level
2-20	Piper Hill Rd, Hawkins Pond outlet crossing downstream side	Town Road	Slight road shoulder erosion, winter sand forming delta down into stream	Install sediment pools to control winter sand	High	0.4	0.4	0.2	$1,950	$100	$2,950	$16,259	Medium	High
2-15	Both ends of Lambert RD (hills to stream)	Town Road	Bare soil, bringing lots of sand downstream, delta in stream, winter sand, slight surface erosion, slight ditch erosion, slight road shoulder erosion	Install turnouts and level spreader, reshape ditch, vegetate ditch	High	0.4	0.4	0.2	$2,075	$100	$3,075	$16,948	Medium	Medium
2-10	On RR tracks off Winona on Snake River by sign C41	RR ROW	Continued historic sand movement, monitor in the future, lots of sand in channel, moderate surface erosion (deposition in stream at crossing), delta in stream	Armor inlet/outlet? Stabilize bare/eroding soils at crossing, vegetate slopes	Medium	1.2	1.2	0.5	$5,000	$100	$6,000	$11,023	High	High/Low
2-16 B	Rd Ditches near boat launch at Hawkins Pond	Town Road	Moderate ditch erosion, slight road shoulder erosion, bare soil, winter sand	Vegetate ditch, armor ditch with stone, install turnouts	Medium	0.4	0.4	0.2	$1,275	$100	$2,275	$12,539	Medium	Medium
2-21 A	Corner of Winona Rd and Hawkins Pond Rd- upstream Hawkins Pond stream crossing	State and Town	Lots of winter sand deposited from road into stream, lack of shoreline vegetation, slight surface erosion, slight ditch erosion, slight road shoulder erosion	Vegetate shoulder, add to buffer, install sediment pools to capture winter sand, sweep roads and remove winter sand before movement toward stream	High	0.3	0.3	0.1	$1,000	$100	$11,000	$80,836	Medium	High
2-21 B	Downstream Side of crossing at intersection of Winona Rd and Hawkins Pond Rd (Hawkins Pond outlet stream- downstream side of crossing)	State ROW	Slight surface erosion, slight road shoulder erosion, winter sand, lack of shoreline vegetation, tar lined ditch brings water from Rd and adjacent driveway into stream	Vegetate shoulder, establish buffer, add to buffer, remove tar-lined ditch and replace with infiltrating /sediment capturing structure to treat runoff properly	Medium	0.1	0.1	0.0	$1,560	$100	$2,560	$56,438	Medium	Medium
2-18	Piper Hill Road, Bear Pond stream crossing	Town Road	Undersized culvert (is currently under water), moderate road shoulder erosion, lots of winter sand, Looks like road need to be built up and new crossing constructed- water is almost to Rd level	Enlarge culvert, armor inlet and outlet extending headwalls to prevent road shoulder slumping, vegetate/stabilize shoulder, water within 4' of road shoulder- lots of sediment input	Medium	0.4	0.2	0.1	$9,560	$200	$11,560	$127,427	High	High
2-25	Fogg Hill Road tax parcel #224-004-0000 (Hopkins property)	Forest land	Parcel forms a significant part of a 900+ acre unfragmented woodland and wetland habitat that includes a number of species of rare and threatened plants	Obtain conservation easement or purchase of land to protect habitat and land critical to the quality of surface and groundwaters in the watershed	High		5.3	2.4	$157,000				High	Medium