1. Input watershed land use area (ac) and precipitation (in)						
Watershed	Watershed	Urban	Cropland	Pastureland	Forest	User Defined
Swamp Creek	W1	415.57	7300.638	0	28.777	0
Shanty Creek	W2	162.959	3065.595	0	19.112	0
Stump Ditch	W3	537.256	9544.838	0	78.297	0
Talbert Ditch	W4	800.894	11950.305	0	150.512	0
Prairie Creek	W5	3063.466	13424.654	18.025	254.745	0
Kilmore Creek	W6	974.686	14244.195	355.109	1274.076	0
Spring Creek	W7	1060.445	7940.05	532.092	517.328	0
Jenkins Ditch	W8	2114.59	18274.812	212.119	1557.667	0
Lauramie Creek	W9	657.386	4452.984	119.101	352.557	0
Town of Dayton	W10	684.442	6921.975	158.075	1409.475	0
Town of Mulberr	W11	55.329	271.823	23.444	72.695	0

Land use area and precipitation (continued)

					Rain correction factors		
					0.833	0.481	
Watershed	Watershed	Feedlots	Feedlot Percent Paved	Total	Annual Rainfall	Rain Days	Avg. Rain/Event
Swamp Creek	W1	0	0-24%	7744.985	35.01	112.5	0.539
Shanty Creek	W2	0	0-24%	3247.666	35.01	112.5	0.539
Stump Ditch	W3	0	0-24%	10160.391	35.01	112.5	0.539
Talbert Ditch	W4	0	0-24%	12901.711	35.01	112.5	0.539
Prairie Creek	W5	3.476	0-24%	16764.366	35.01	112.5	0.539
Kilmore Creek	W6	3.523	0-24%	16851.589	35.01	112.5	0.539
Spring Creek	W7	2.065	0-24%	10051.98	35.01	112.5	0.539
Jenkins Ditch	W8	4.614	0-24%	22163.802	35.01	112.5	0.539
Lauramie Creek	W9	1.152	0-24%	5583.18	35.01	112.5	0.539
Town of Dayton	W10	1.907	0-24%	9175.874	35.01	112.5	0.539
Town of Mulberry	W11	0.088	0-24%	423.379	35.01	112.5	0.539

	2. Input agricultural animals									
Watershed	Watershed	Beef Cattle	Dairy Cattle	Swine (Hog)	Sheep	Horse	Chicken	Turkey	Duck	# of months manure applied
Swamp Creek	W1	0	0	0	0	0	0	0	0	6
Shanty Creek	W2	0	0	0	0	0	0	0	0	6
Stump Ditch	W3	0	0	0	0	0	0	0	0	6
Talbert Ditch	W4	0	0	0	0	0	0	0	0	6
Prairie Creek	W5	76	3	9829	76	30	0	0	9	6
Kilmore Creek	W6	76	4	9962	77	30	0	0	10	6
Spring Creek	W7	45	1	5841	45	18	0	0	5	6
Jenkins Ditch	W8	100	4	13045	101	41	0	0	11	6
Lauramie Creek	W9	25	1	3259	25	10	0	0	2	6
Town of Dayton	W10	42	1	5396	42	16	0	0	6	6
Town of Mulber	W11	1	0	254	1	0	0	0	0	6
	Total	365	14	47586	367	145	0	0	43	

3. Input septic system and illegal direct wastewater discharge data						
Watershed	Watershed	No. of Septic Systems	Population per Septic System	Septic Failure Rate, %	Wastewater Direct Discharge, # of People	Direct Discharge Reduction, %
Swamp Creek	W1	126	2.56	1.09	0	0
Shanty Creek	W2	53	2.56	1.09	0	0
Stump Ditch	W3	165	2.56	1.09	0	0
Talbert Ditch	W4	207	2.56	1.09	0	0
Prairie Creek	W5	274	2.56	1.09	0	0
Kilmore Creek	W6	277	2.56	1.09	0	0
Spring Creek	W7	162	2.56	1.09	0	0
Jenkins Ditch	W8	363	2.56	1.09	0	0
Lauramie Creek	W9	90	2.56	1.09	0	0
Town of Dayton	W10	149	2.56	1.09	0	0
Town of Mulberr	W11	5	2.56	1.09	0	0

4. Modify the Universal Soil Loss Equation (USL											
Watershed	Watershed	Cropland					Pastureland				
		R	K	LS	C	P	R	K	LS	C	P
Swamp Creek	W1	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Shanty Creek	W2	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Stump Ditch	W3	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Talbert Ditch	W4	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Prairie Creek	W5	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Kilmore Creek	W6	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Spring Creek	W7	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Jenkins Ditch	W8	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Lauramie Creek	W9	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Town of Dayton	W10	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1
Town of Mulberr	W11	180	0.331	0.265	0.232	1	180	0.331	0.265	0.04	1

USLE Parameters Modifications (continued)

		Forest						User Defined				
Watershed	Watershed	P	R	K	LS	C	P	R	K	LS	C	P
Swamp Creek	W1	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Shanty Creek	W2	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Stump Ditch	W3	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Talbert Ditch	W4	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Prairie Creek	W5	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Kilmore Creek	W6	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Spring Creek	W7	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Jenkins Ditch	W8	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Lauramie Creek	W9	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Town of Dayton	W10	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1
Town of Mulberry	W11	1	180	0.331	0.265	0.003	1	180	0.331	0.265	0.232	1

	Optional Data Input:								
	5. Select average soil hydrologic group (SHG), SHG A = highest infiltration and SHG D = lowest infiltration								
Watershed	Watershed	SHG A	SHG B	SHG C	SHG D	SHG Selected	Soil N conc.%	Soil P conc.%	Soil BOD conc.%
Swamp Creek	W1					C	0.08	0.031	0.16
Shanty Creek	W2					B	0.08	0.031	0.16
Stump Ditch	W3					C	0.08	0.031	0.16
Talbert Ditch	W4					C	0.08	0.031	0.16
Prairie Creek	W5					B	0.08	0.031	0.16
Kilmore Creek	W6					B	0.08	0.031	0.16
Spring Creek	W7					B	0.08	0.031	0.16
Jenkins Ditch	W8					B	0.08	0.031	0.16
Lauramie Creek	W9					C	0.08	0.031	0.16
Town of Dayton	W10					B	0.08	0.031	0.16
Town of Mulberr	W11	FALSE	TRUE	FALSE	FALSE	B	0.08	0.031	0.16

6. Reference runoff curve number (may be modified)				
SHG	A	B	C	D
Urban	83	89	92	93
Cropland	67	78	85	89
Pastureland	49	69	79	84
Forest	39	60	73	79
User Defined	50	70	80	85

6a. Detailed urban reference runoff curve number (may be modified)				
Urban\SHG	A	B	C	D
Commercial	89	92	94	95
Industrial	81	88	91	93
Institutional	81	88	91	93
Transportati	98	98	98	98
Multi-Family	77	85	90	92
Single-Famil	57	72	81	86
Urban-Cultiv	67	78	85	89
Vacant-Deve	77	85	90	92
Open Space	49	69	79	84

7. Nutrient concentration in runoff (mg/l)			
Land use	N	P	BOD
1. L-Cropland	1.9	0.3	4
1a. w/ manure	8.1	2	12.3
2. M-Cropland	2.9	0.4	6.1
2a. w/ manure	12.2	3	18.5
3. H-Cropland	4.4	0.5	9.2
3a. w/ manure	18.3	4	24.6
4. Pastureland	4	0.3	13
5. Forest	0.2	0.1	0.5
6. User Defined	0	0	0

7a. Nutrient concentration in shallow groundwater (mg/l) (n			
Landuse	N	P	BOD
Urban	1.5	0.063	0
Cropland	1.44	0.063	0
Pastureland	1.44	0.063	0
Forest	0.11	0.009	0
Feedlot	6	0.07	0
User-Defined	0	0	0

8. Input or modify urban land use distribution						
Watershed	Watershed	Urban Area (ac.)	Commercial %	Industrial %	Institutional %	Transportation %
Swamp Creek	W1	415.57	1	1	0	38
Shanty Creek	W2	162.959	0	0	0	20
Stump Ditch	W3	537.256	1	1	0	28
Talbert Ditch	W4	800.894	0	0	0	21
Prairie Creek	W5	3063.466	2	2	0	29
Kilmore Creek	W6	974.686	1	1	0	18
Spring Creek	W7	1060.445	1	1	0	10
Jenkins Ditch	W8	2114.59	2	2	0	30
Lauramie Creek	W9	657.386	2	2	0	29
Town of Dayton	W10	684.442	1	1	0	34
Town of Mulberr	W11	55.329	2	2	0	20

Urban Land Use Distribution (continued)

Watershed	Watershed	Multi-Family %	Single-Family %	Urban-Cultivated %	Vacant (developed) %	Open Space %	Total % Area
Swamp Creek	W1	1	38	3	9	9	100
Shanty Creek	W2	0	20	0	30	30	100
Stump Ditch	W3	1	29	0	20	20	100
Talbert Ditch	W4	0	23	0	28	28	100
Prairie Creek	W5	2	29	12	12	12	100
Kilmore Creek	W6	1	19	0	30	30	100
Spring Creek	W7	1	11	22	27	27	100
Jenkins Ditch	W8	2	30	16	9	9	100
Lauramie Creek	W9	2	29	30	3	3	100
Town of Dayton	W10	1	34	17	6	6	100
Town of Mulberry	W11	2	20	30	12	12	100

9. Input irrigation area (ac) and irrigation amount (in)						
Watershed	Watershed	Total Cropland (ac)	Cropland: Acres Irrigated	Water Depth (in) per Irrigation - Before BMP	Water Depth (in) per Irrigation - After BMP	Irrigation Frequency (#/Year)
Swamp Creek	W1	7300.638	0	0	0	0
Shanty Creek	W2	3065.595	0	0	0	0
Stump Ditch	W3	9544.838	0	0	0	0
Talbert Ditch	W4	11950.305	0	0	0	0
Prairie Creek	W5	13424.654	0	0	0	0
Kilmore Creek	W6	14244.195	0	0	0	0
Spring Creek	W7	7940.05	0	0	0	0
Jenkins Ditch	W8	18274.812	0	0	0	0
Lauramie Creek	W9	4452.984	0	0	0	0
Town of Dayton	W10	6921.975	0	0	0	0
Town of Mulberr	W11	271.823	0	0	0	0

Load Reduction Efficiencies for BMPs

Implementation Strategy	Estimated Pollutant Reduction				Notes
	Sediment/Solids	Phosphorus	Nitrogen	E.coli	
Conservation Tillage	30-70	20-40	10-15	-	Higher reductions come from continuous no-till systems. Costs highly dependent on equipment costs required. High end cost associated with organic corn.
Agricultural Waste Management	-	75	75	+	CBP Model; Cost of waste transfer systems highly dependent on system design
Conservation Cover & Buffers	58	52	54	+	PA BMP Manual, Reductions are based on per mile of installed practice
Cover Crops	15	32	43	-	PA BMP Manual, Reductions are based on per acre of installed practice
Streambank Stabilization	76	78	65	+**	PA BMP Manual; Reductions base on per mile of installed practice; Costs of bank stabilization highly dependent on severity of problem and techniques used
Nutrient Management	-	5	7	+*	Pollutant reductions from CBP Model and Past Cost-Share; Estimated costs do not include cost of equipment upgrades
Drainage Water Management	-	30	33	-	CBP Model (Water Control Structure)
Denitrifying Bioreactors	+	80	50	+	Minnesota Presentation
Septic System Upgrades	-	+	55	+	CBP Model (Septic Pumping)
Stormwater Infiltration	90	85	85	+	CBP Model; Costs from LID Center
Critical Area Stabilization	40	20	20	-	CBP Model (Loafing Lot Management)
Pasture Management	30	24	9	+	CBP Model
Conservation Planning	8-25	5-15	3-8	+	CBP Model; Load reductions vary based on resource concerns and land uses addressed by Conservation Plan
Water and Sediment Control Basins	60	20	20	-	CBP Model (Dry ED Basin)

+ Postive Removal of Pollutant

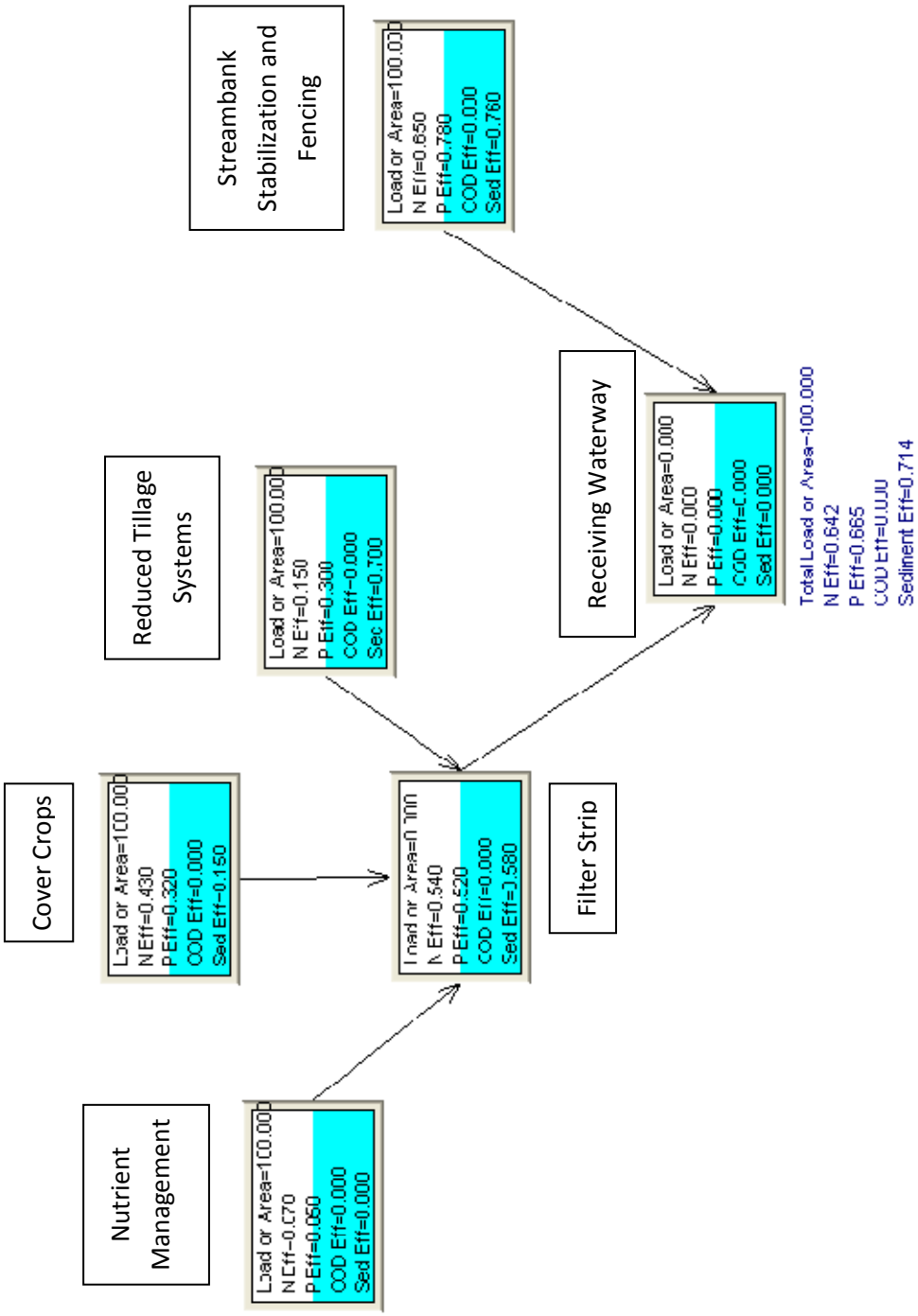
- Minimal Removal of Pollutant

*** When manure is used as nutrient source**

**** If excluding livestock**

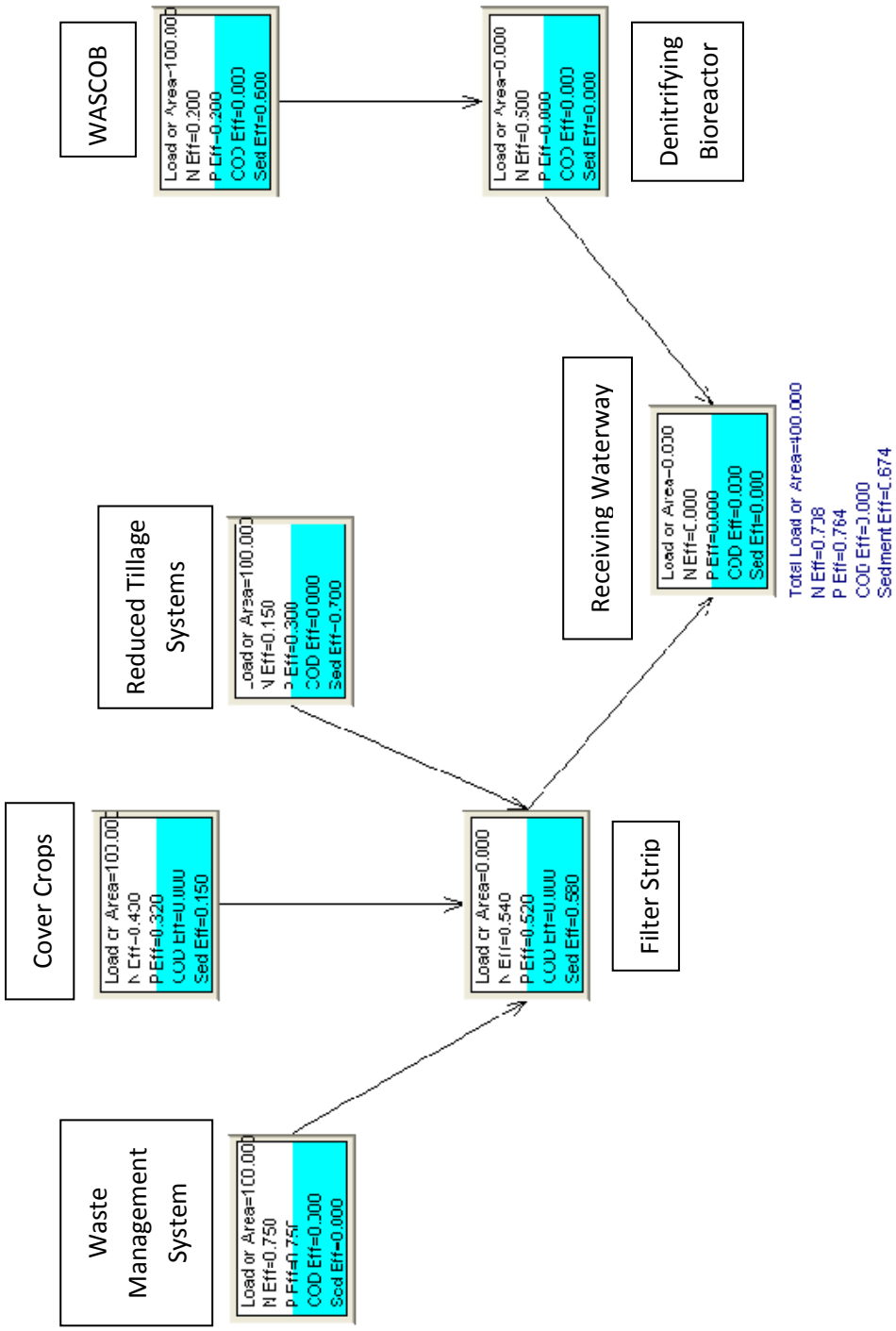
Modeled Conservation Scenarios

Crop 1_Drain 3 – Modeled in the Prairie Creek Subwatershed



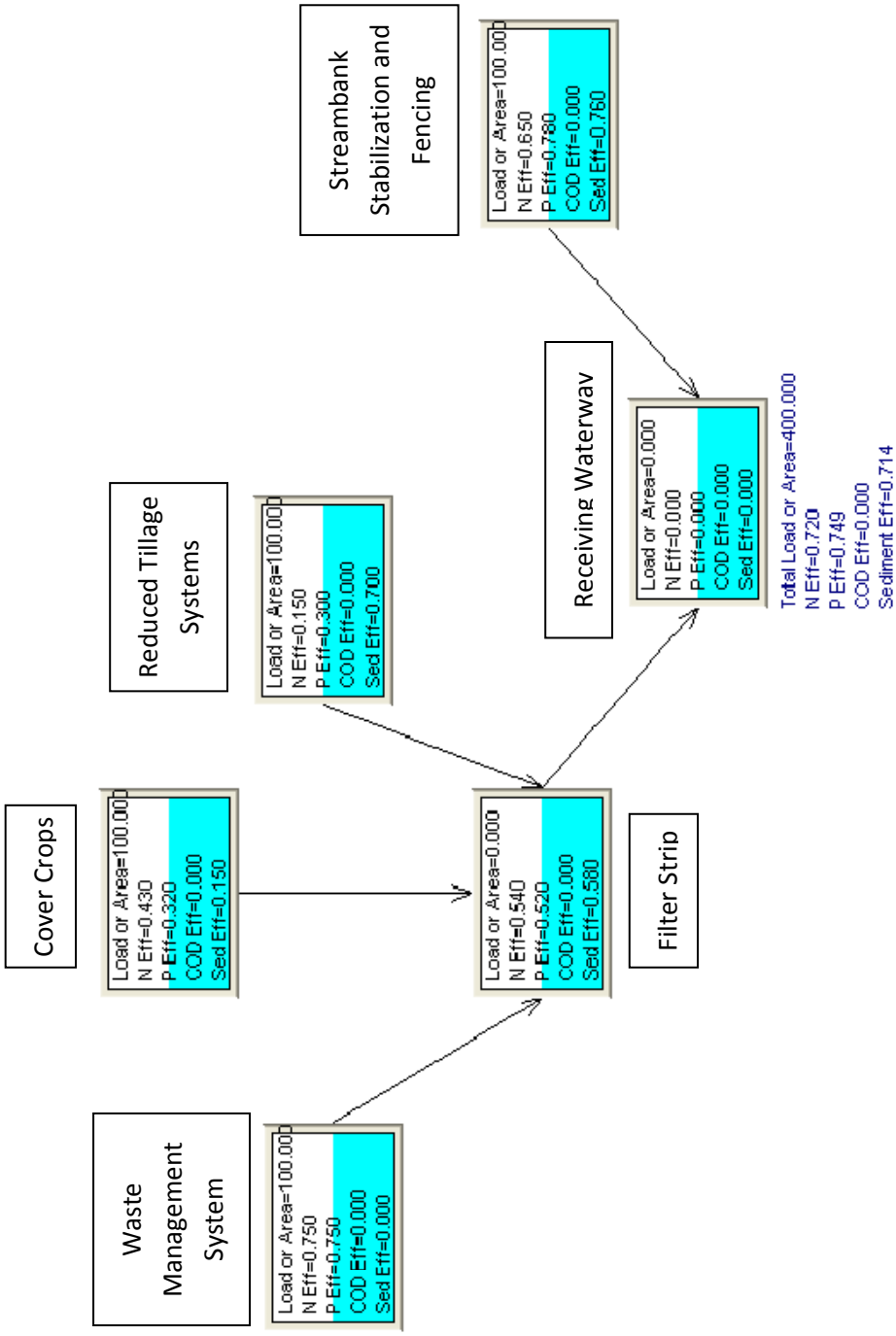
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Crop 2_Drain 2 – Modeled in the Kilmore Creek and Town of Mulberry Subwatersheds



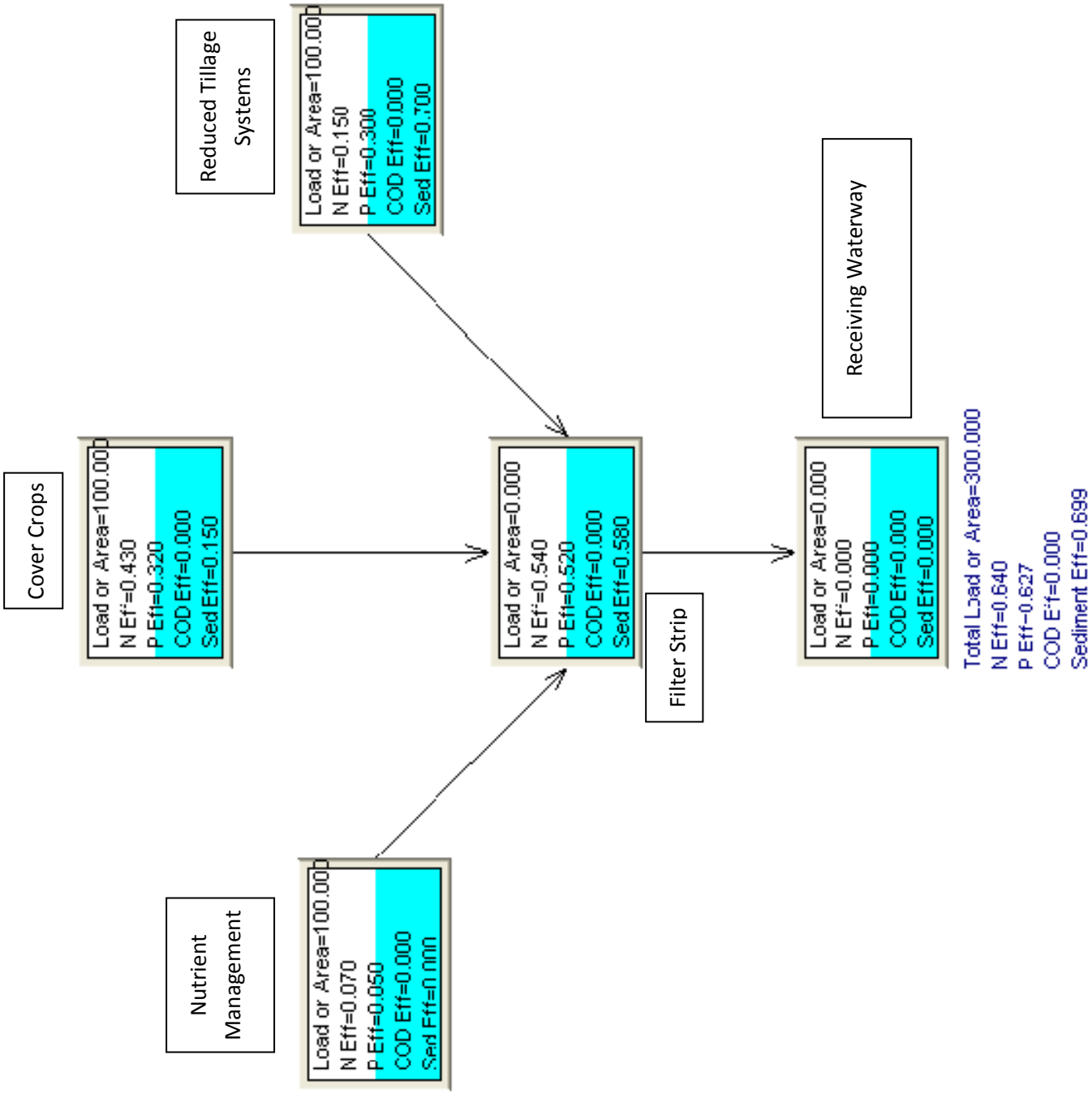
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Crop 2_Drain 3 – Modeled in the Talbert Ditch Subwatershed



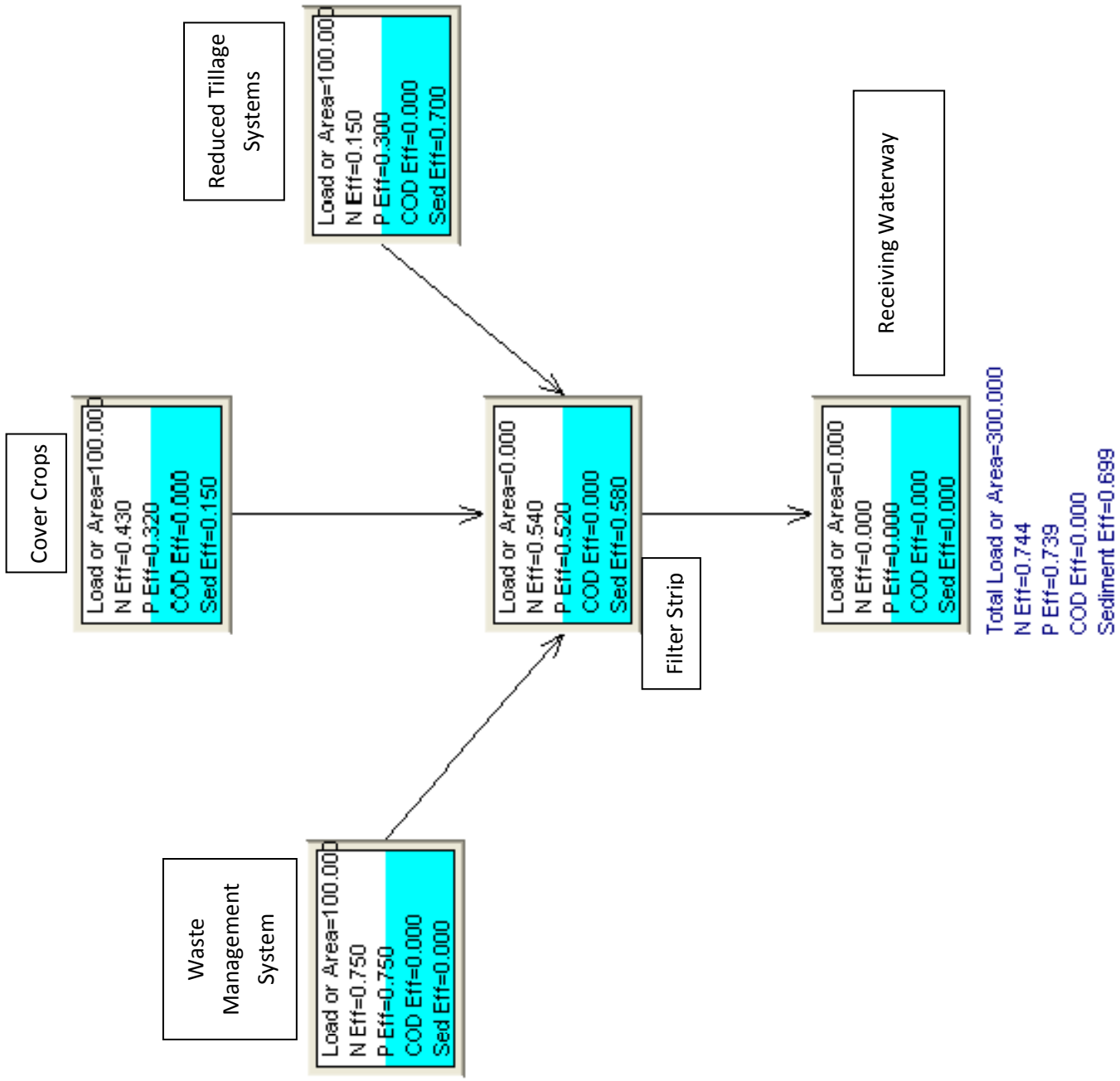
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Cropland 1 – Modeled in the Lauramie Creek and Town of Dayton Subwatersheds



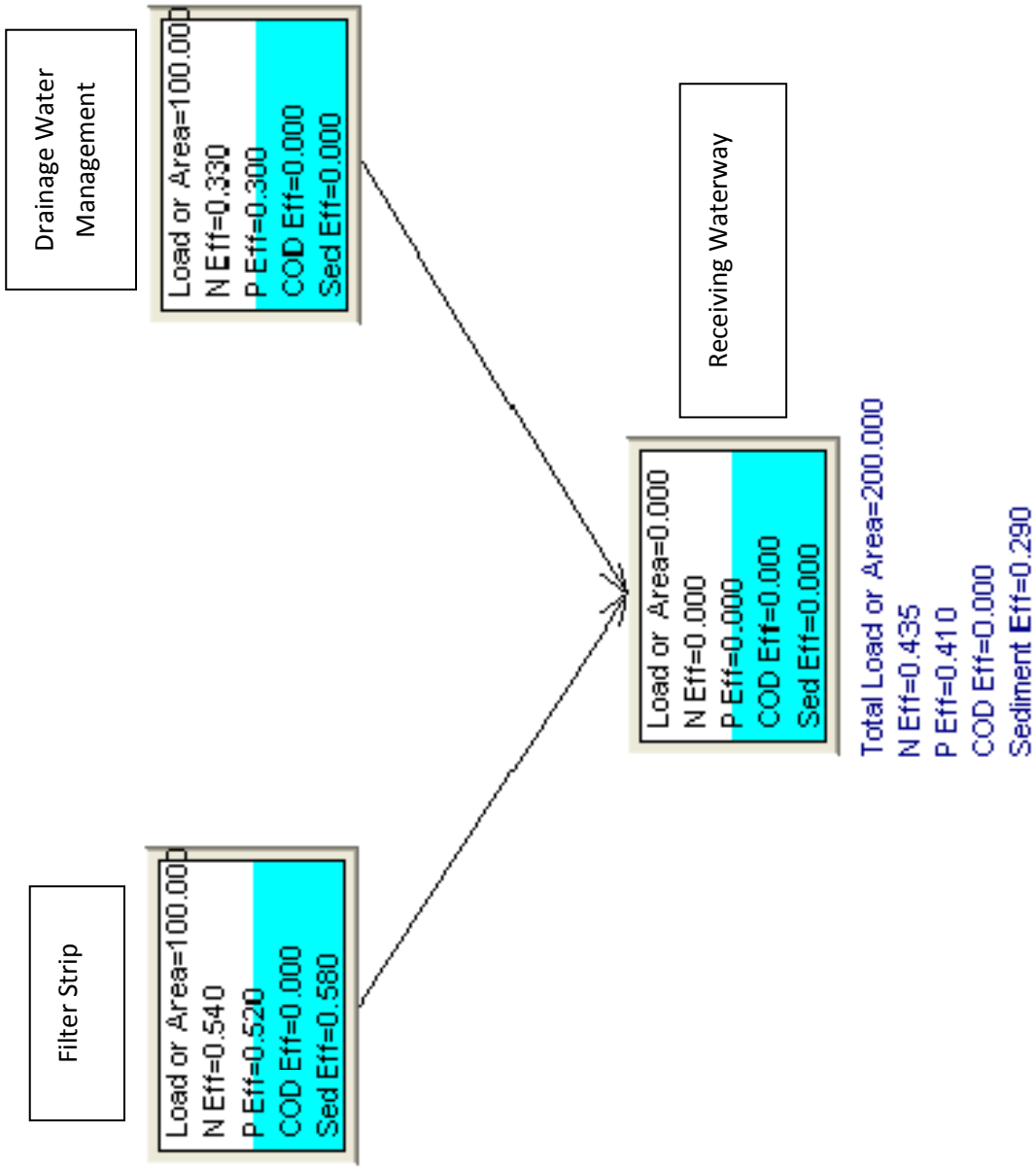
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Cropland 2 – Modeled in the Stump Ditch and Jenkins Ditch Subwatersheds



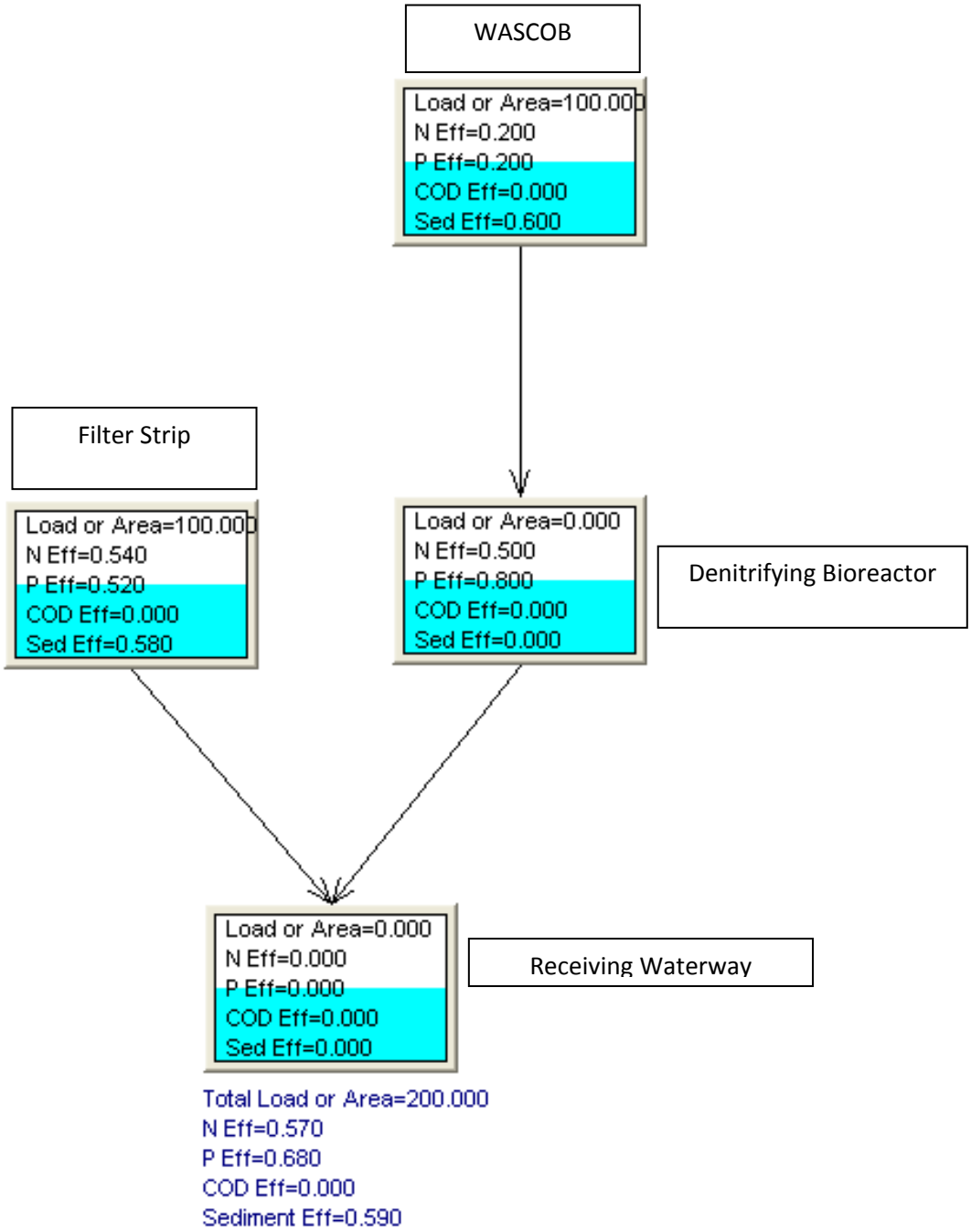
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Drainage 1 – Modeled in the Swamp Creek and Shanty Creek Subwatersheds



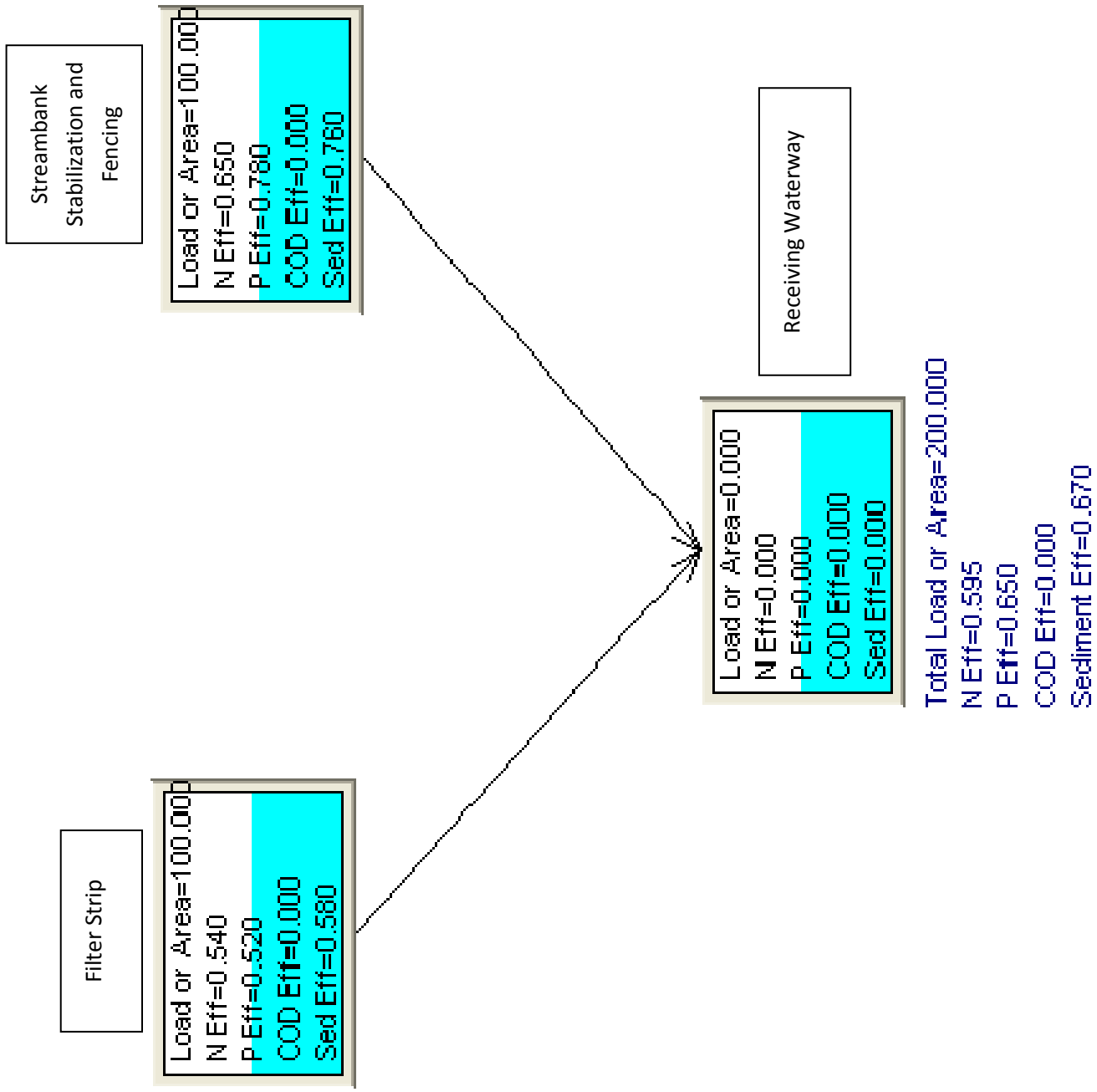
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Drainage 2 – Modeled in the Spring Creek Subwatershed



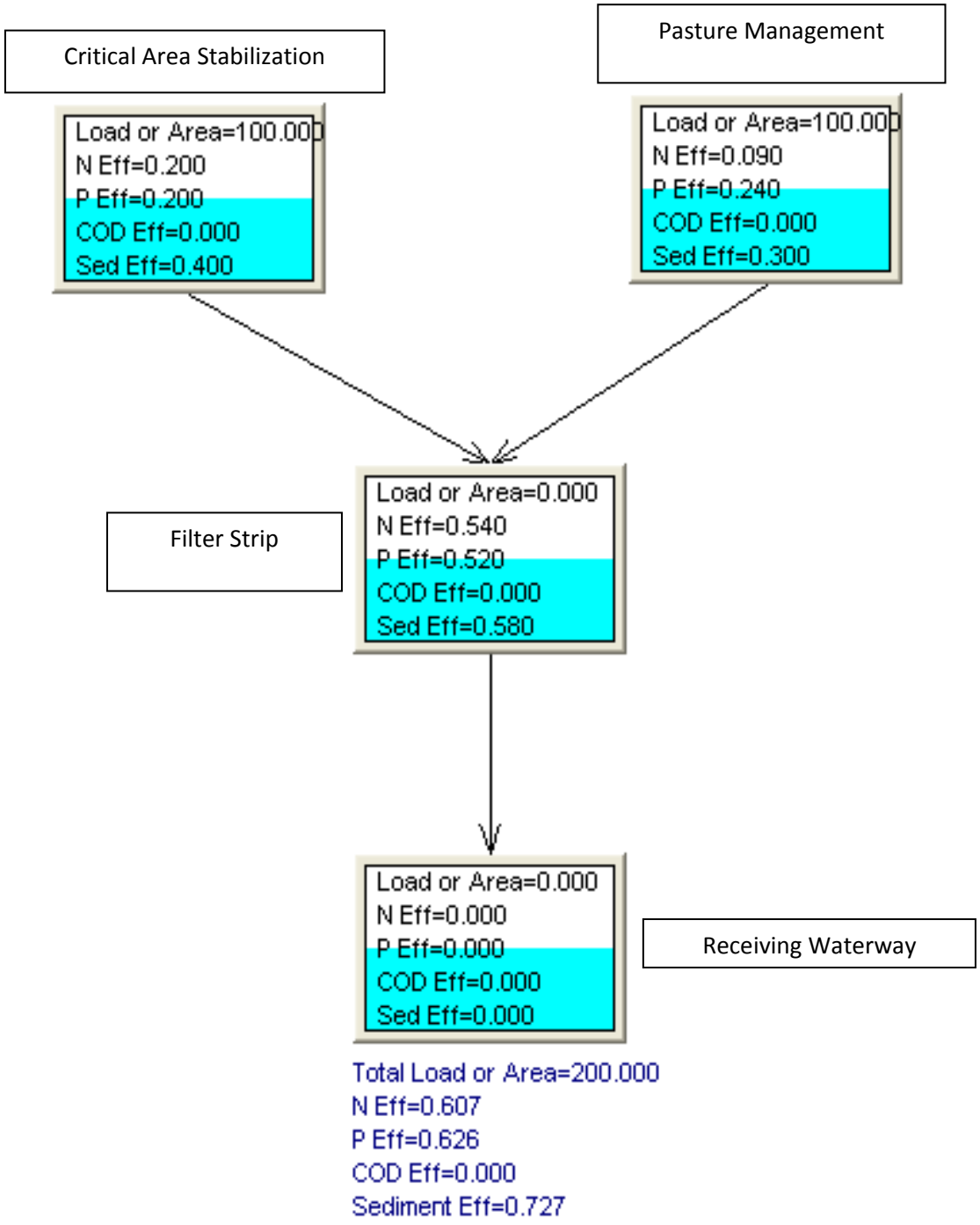
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Drainage 3 – Modeled with other RMS packages (Talbert Ditch and Prairie Creek Subwatersheds)



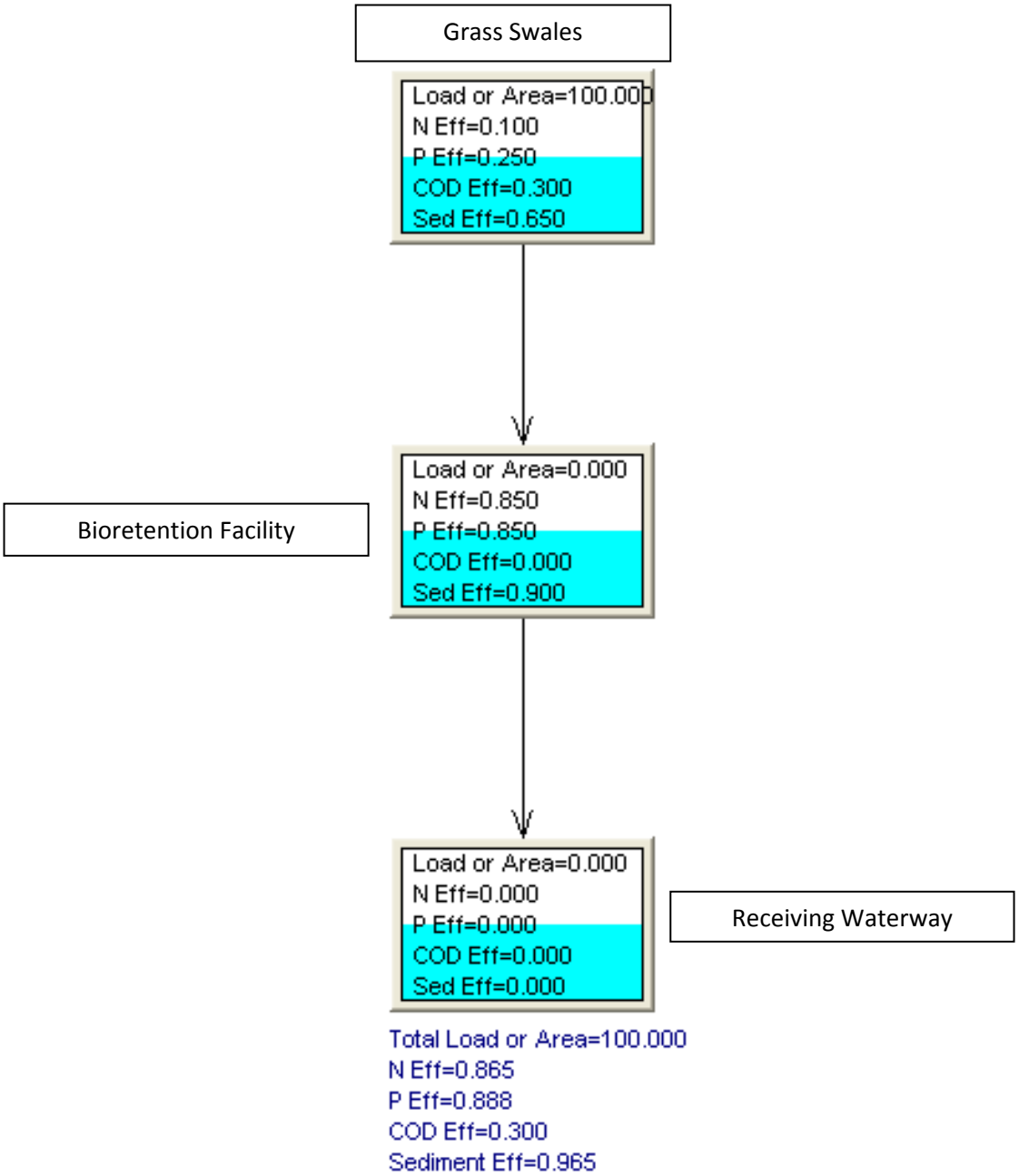
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Pasture 1 – Modeled in the Lauramie Creek Subwatershed



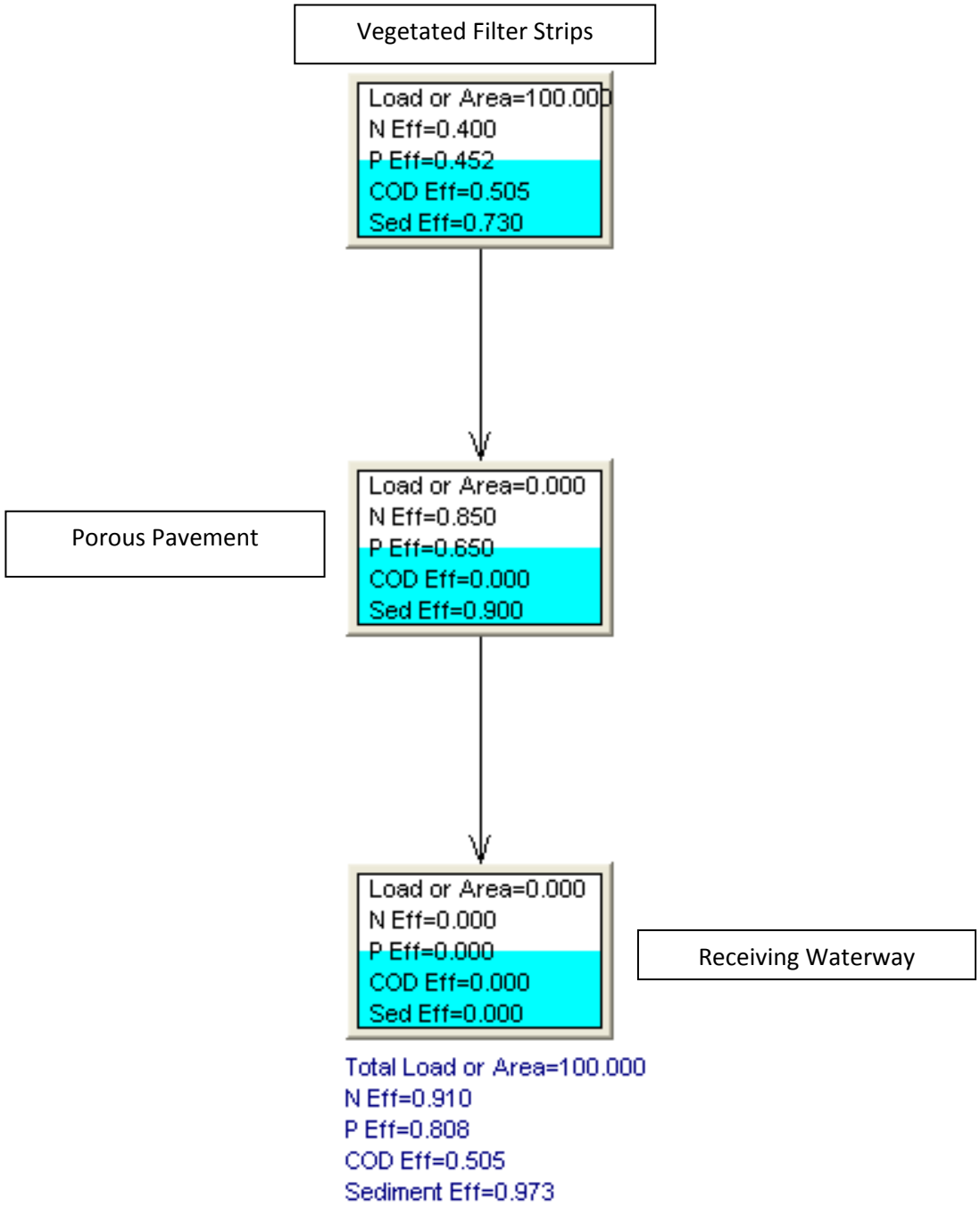
N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Urban 1 – Modeled in the Prairie Creek and Jenkins Ditch Subwatersheds



N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect

Urban 2 – Modeled in the Prairie Creek and Jenkins Ditch Subwatersheds



N Eff – Nitrogen Effect
P Eff – Phosphorus Effect
Sed Eff – Sediment Effect