

SECTION 8: MONITORING EFFECTIVENESS

This framework of indicators for success functions as the monitoring plan. A monitoring plan is needed to track the indicators and evaluate the effectiveness of the implementation efforts over time. Indicators of success established by the Sugar Creek Steering Committee are listed for each of the seven goals. Tables 42a through 42g provide the estimate of financial and technical assistance needed to implement all of the watershed management plan objectives by goal, these tables include costs associated with administrative expenses and education/outreach efforts.

Goal #1: Sustain the Sugar Creek Watershed Stakeholder Group.

Indicators of Success:

- Having quarterly Steering Committee Meetings,
- Completing grant applications and receiving funding,
- Implementing watershed improvement projects,
- Having active subcommittees.

Goal #2: Reduce *E. coli* concentrations to meet state standard of 235 CFU/100 ml in the Sugar Creek Watershed by 2030.

Indicators of Success:

- Number of Agricultural BMPs installed, e.g. exclusionary fencing, alternative water supplies, implementation of manure management practices,
- Number of Urban BMPs installed, e.g. increasing infiltration and decreasing stormwater runoff washing pet waste into surface water bodies,

Goal #3: Reduce the maximum concentration so that there are no exceedances of Nitrate plus Nitrite of 10 mg/L and Total Phosphorus of 0.3 mg/L by 2030.

Indicators of Success:

- Number of Agricultural BMPs installed, participation in CRP, both programs include filter strips and grassed waterways,
- Number of independent participants using cover crops, grid mapping, variable rate technology, soil testing, and low application rates of fertilizers,
- Number of Urban BMPs installed,
- Number of independent participants using rain gardens, rain barrels, no phosphorus fertilizer,
- Nitrogen model demonstrating Load Reduction,
- Phosphorus model demonstrating Load Reduction

Goal #4: Reduce soil erosion/sedimentation from agricultural and urban lands to meet 80 mg/L of total suspended solids (TSS) by 2030.

Indicator of Success:

- Number of Agricultural BMPs installed, participation in CRP, both programs include filter strips, grassed waterways and field borders,
- Number of independent participants using cover crops and grid mapping,
- Number of Urban BMPs installed,
- Number of construction sites using proper erosion control procedures,
- Total Suspended Solids model demonstrating Load Reduction.

Goal #5: Reduce flood damage in the Sugar Creek Watershed by 2030.

Indicator of Success:

- Number of new development sites which have incorporated appropriate volume of stormwater retention and/or detention,
- Increase acreage of new floodplain storage and develop new wetland areas,
- Prevent further development within the floodplain,

Goal # 6: Develop and implement watershed education and outreach programs in the Sugar Creek Watershed.

Indicator of Success:

- Number of events including: workshops, field days, educational display booth events, river clean-up days,
- Number of people involved categories includes: steering committee member participation, general public attendance, number of volunteers at clean up events, number of river watch participants in the watershed,

Goal #7: Increase preservation and restoration of open space within the Sugar Creek Watershed by 2030.

Indicator of Success:

- Number of acres dedicated to open space and greenways,
- Number of acres for the preservation of wildlife habitat and protected areas, within the Sugar Creek Watershed,

Table 42a Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:
Goal #1: Sustain the Sugar Creek Watershed Stakeholder Group. Column specific costs are shown as annual estimates. Five and twenty year projections are shown in today's dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|---|----------------------|---|--------|-----------|----------|-------------|------------|------------------------|-------------------------|
| Meet as a Committee on a quarterly basis | \$158 | \$2,880 | n/a | n/a | n/a | n/a | n/a | \$16,630 | \$66,520 |
| Increase involvement and participation with the planning process from Stakeholders within the Watershed | \$158 | \$2,880 | n/a | n/a | n/a | n/a | n/a | \$16,630 | \$66,520 |
| Pursue and implement watershed improvement projects | \$812 | \$12,500 | \$625 | \$1,250 | \$625 | n/a | n/a | \$85,310 | \$341,240 |
| Sustaining active subcommittees | \$158 | \$2,880 | n/a | n/a | n/a | n/a | n/a | \$16,630 | \$66,520 |

Table 42b Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:
Goal #2: Reduce *E. coli* concentrations to meet state standards of 235 CFU/100 ml in the Sugar Creek Watershed by 2030. Five and twenty year projections are shown in today's dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|---|----------------------|---|--------|-----------|----------|-------------|-------------------|------------------------|-------------------------|
| Reduce the amount of <i>E. coli</i> runoff from agricultural lands through the encouragement of exclusionary fencing installation, the promotion of alternative water supplies, and the education and implementation of manure management practices | \$406 | \$11,250 | \$312 | \$625 | \$312 | \$27,620 | Program Dependant | \$41,150 | \$823,000 |
| Reduce the amount of <i>E. coli</i> runoff from urban lands | \$406 | \$1,250 | \$312 | \$625 | \$312 | \$540 | Program Dependant | \$4,070 | \$81,396 |
| Reduce the amount of <i>E. coli</i> runoff from point sources, failed septic systems, and package plants | \$173 | \$2,880 | \$288 | n/a | n/a | n/a | Program Dependant | \$18,145 | \$72,580 |
| Reduce the amount of <i>E. coli</i> in Sugar Creek to allow the waters to be fishable and swimmable for all stakeholders | \$81 | \$1,250 | \$62 | \$125 | \$62 | \$2,816 | Program Dependant | \$14,080 | \$452,180 |

Table 42c Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:

Goal #3: Reduce the maximum concentration so that there are no exceedances of Nitrate plus Nitrite of 10 mg/L and Total Phosphorus of 0.3 mg/L by 2030. Column specific costs are shown as annual estimates. Five and twenty year projections are shown in today's dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|---|----------------------|---|--------|-----------|----------|-------------|-------------------|------------------------|-------------------------|
| Improve the efficiency of urban and agricultural fertilizer application using grid mapping, and variable rate technology | \$10,990 | \$1,785 | \$90 | \$250 | \$125 | \$217,540 | Program Dependant | \$1,153,900 | \$4,615,600 |
| Educate the public/Stakeholders (urban and agricultural) of the importance of reduced application of fertilizers | \$112 | \$1,785 | \$90 | \$250 | \$125 | n/a | n/a | \$11,810 | \$47,240 |
| Increase the riparian buffer zone using filter strips and grassed waterways | \$3,498 | \$1,785 | \$90 | \$250 | \$125 | \$67,703 | Program Dependant | \$367,255 | \$1,469,020 |
| Increase the amount of BMPs used in the Sugar Creek Watershed including but not limited to: cover crops in the winter, grid mapping, and variable rate technology | \$10,990 | \$1,785 | \$90 | \$250 | \$125 | \$217,540 | Program Dependant | \$1,153,900 | \$4,615,600 |
| Discourage the Fall and Winter application of fertilizer | \$94 | \$1,785 | \$90 | n/a | n/a | n/a | n/a | \$9,845 | \$39,380 |
| Encourage more soil testing to optimize Nitrogen application (Home owners, farmers, etc.) | \$94 | \$1,785 | \$90 | n/a | n/a | n/a | n/a | \$9,845 | \$39,380 |
| Encourage lower application rates of fertilizers within the Watershed through education workshops and field days | \$112 | \$1,785 | \$90 | \$250 | \$125 | n/a | n/a | \$11,810 | \$47,240 |

Table 42d Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:

Goal #4: Reduce soil erosion/sedimentation from agricultural and urban lands to meet 80 mg/L of total suspended solids (TSS) by 2030. Five and twenty year projections are shown in todays dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|--|----------------------|---|--------|-----------|----------|-------------|-------------------|------------------------|-------------------------|
| Reduce soil erosion and sedimentation from agricultural lands | \$3,318 | \$4,167 | \$208 | \$625 | \$208 | \$61,160 | Program Dependant | \$348,430 | \$1,393,720 |
| Reduce soil erosion and sedimentation from urban lands | \$12,004 | \$4,167 | \$208 | \$625 | \$208 | \$6,796 | Program Dependant | \$120,040 | \$480,160 |
| Encourage enforcement of erosion control practices associated with the issuance of building permits within the Watershed | \$229 | \$4,167 | \$208 | n/a | \$208 | n/a | n/a | \$24,060 | \$96,240 |

Table 42e Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:

Goal #5: Reduce flood damage in the Sugar Creek Watershed by 2030. Column specific costs are shown as annual estimates. Five and twenty year projections are shown in todays dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|---|----------------------|---|--------|-----------|----------|-------------|------------|------------------------|-------------------------|
| Reduce flow rates and volumes from existing developed areas and prevent increases in flow rates and volumes from new development within the Watershed | \$187 | \$3,125 | \$156 | \$312 | \$156 | n/a | n/a | \$19,680 | \$78,720 |
| Protect and restore floodplain functions | \$187 | \$3,125 | \$156 | \$312 | \$156 | n/a | n/a | \$19,680 | \$78,720 |
| Encourage the maintenance and management of the Sugar Creek corridor and other drainageways to minimize flooding | \$187 | \$3,125 | \$156 | \$312 | \$156 | n/a | n/a | \$19,680 | \$78,720 |
| Create and restore wetland areas to increase storage within the Watershed | \$187 | \$3,125 | \$156 | \$312 | \$156 | n/a | n/a | \$19,680 | \$78,720 |

Table 42f Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:

Goal #6: Develop and implement watershed education and outreach programs in the Sugar Creek Watershed. Five and twenty year projections are shown in today's dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|--|----------------------|---|--------|-----------|----------|-------------|------------|------------------------|-------------------------|
| Effectively use forms of media (TV, newspaper, newsletters and radio) to share and communicate past, current, and future activities of the Sugar Creek Steering Committee with the media, public, and current and potential Sugar Creek Steering Committee members | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Recruit and train volunteers to monitor at a minimum, each of the subwatersheds, obtaining both wet and dry weather data at each site at least twice each year, and provide continuing education opportunities for volunteer monitors | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Promote sustainable drainage practices | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Educate homeowners in urban communities about the use of fertilizers | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Educate stakeholders using septic systems about the importance of septic system maintenance | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Establish a legislative liaison | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Educate stakeholders and landowners about the detrimental effects that All Terrain Vehicles (ATV's) have on the Sugar Creek Watershed | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Educate the stakeholders in the Watershed about other efforts and studies conducted within the Watershed | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |
| Educate homeowners within the Watershed about the Storm Drain Marking Program | \$129 | \$1,389 | \$350 | \$139 | \$700 | n/a | n/a | \$13,535 | \$54,140 |

Table 42g Total Projected Costs Associated with Complete Implementation of the Watershed Management Plan:

Goal #7: Increase preservation and restoration of open space within the Sugar Creek Watershed by 2030. Column specific costs are shown as annual estimates. Five and twenty year projections are shown in today's dollars and are not adjusted to reflect changes over time.

| Objective | Administrative Costs | Personnel Costs Fulltime Watershed Coordinator | Travel | Equipment | Supplies | Contractual | Cost-Share | Total Cost for 5 years | Total Cost for 20 years |
|--|-----------------------------|---|---------------|------------------|-----------------|--------------------|-------------------|-------------------------------|--------------------------------|
| Increase acquisition of land to be dedicated to open space and greenways | \$75 | \$1,250 | \$62 | \$125 | \$62 | n/a | n/a | \$7,870 | \$31,480 |
| Increase the preservation of wildlife habitat and protected areas within the Sugar Creek Watershed | \$75 | \$1,250 | \$62 | \$125 | \$62 | n/a | n/a | \$7,870 | \$31,480 |
| Encourage the utilization of proper wildlife management practices within the Sugar Creek Watershed | \$75 | \$1,250 | \$62 | \$125 | \$62 | n/a | Program Dependant | \$7,870 | \$31,480 |
| Encourage farmland preservation within the Watershed | \$75 | \$1,250 | \$62 | \$125 | \$62 | n/a | n/a | \$7,870 | \$31,480 |