

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 1 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) |
|--------------------------|--|------------|--------|----------------------|--|----------------------|------------------------|---------------------|-------------------------|--------------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | |
| 1 | Illicit Discharge Elimination Program - Prevent, detect, and remove all physical connections to the drainage system that convey any material other than storm water.(project to be completed over 3 years) | LS | | \$70,900 | | | | \$70,900 | | \$70,900 |
| 2 | Sampling Program for Bacteria, Phosphorus - 6 sampling sites, sample 2x/year for Bacteria, Phosphorus | EVENT | 2 | \$4,680 | | | | \$9,360 | | \$9,360 |
| 3 | USGS Stream Gage - Continue operation at Chalmers Rd. bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 |
| 4 | Enforce Existing Ordinances - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance - Assume 1 additional staff | LS | | \$75,000 | | | | \$75,000 | | \$75,000 |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenges to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 |
| 7 | Public Education Program - Encourage residents to switch to phosphorous free fertilizer and change leaf pick up practices and clean off catch basins in front of home -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 |
| 8 | Design in-system storage structures to large storm drain outlets | EA | 5 | \$15,000 | | \$75,000 | | | | \$75,000 |
| 9 | Remedy 10 yr. Storm Flooding Problem - Design solution for Oakbrook Drive Crossing | LS | 1 | \$10,000 | | \$10,000 | | | | \$10,000 |
| 10 | Investigate 100 Year Storm Flooding Problems & Determine Responsibilities - Eisenhower Office Park - Concord Center Area - Brookhaven Pond Outlet | LS | 1 | \$20,000 | | \$20,000 | | | | \$20,000 |
| Costs for Year 1: | | | | | \$0 | \$105,000 | \$0 | \$323,760 | \$53,000 | \$481,760 |

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 2 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) | |
|------------------------------|---|-------------------|--------------|---------------------------------|--|-------------------------|---------------------------|---------------------|----------------------------|-----------------------------------|--------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | | |
| 1 | Illicit Discharge Elimination Program - Prevent, detect, and remove all physical connections to the drainage system that convey any material other than storm water. | LS | | \$70,900 | | | | \$70,900 | | \$70,900 | |
| 2a | Sampling Program for Benthics -6 sampling sites, sample 1x/year for Benthics | EVENT | 1 | \$3,300 | | | | \$3,300 | | \$3,300 | |
| 3 | USGS Stream Gage - Continue operation at Chalmers Road bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 | |
| 4 | Enforce Existing Ordinances - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance - Assume 1 additional staff | LS | | \$75,000 | | | | \$75,000 | | \$75,000 | |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenges to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 | |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 | |
| 7 | Public Education Program -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 | |
| 8a | Add in-system storage structure to large storm drain outlets (Assume drains >= 10.5') - Burns Park Area Drain - Drain tributary to Landsdown Ponds - Cleaning on a monthly basis | EA. EA. EA. | 3 1 36 | \$150,000 \$100,000 \$200 | \$540,000 \$120,000 | | \$54,000 \$40,000 | | \$5,000 \$5,000 | \$831,254 \$227,560 \$7,200 | |
| 9a | Remedy 10 yr. Storm Flooding Problems - Add slope protection at Oakbrook Drive crossing of the northwest branch near Main. Slope protection can be riprap, paving, gabions or bioengineering | LS | 1 | \$30,000 | \$36,000 | | \$3,600 | | \$3,000 | \$42,600 | |
| 11 | Start Detention Pond Study throughout the Watershed - Includes 100 Year Storm Ponds and First Flush Ponds, estimate 60 of each type <i>Survey 40 ponds each year, purpose is to:</i> Identify type of outlet Required maintenance/cleaning/repairs Ownership and maintenance responsibility Potential for retrofitting ponds with 100 year outlets Potential for adding sediment forebays (both types of ponds) <i>Design retrofits</i> | EA. | 40 | \$600 | | \$24,000 | | | | \$174,000 | |
| 12 | Structural Repairs - to be done by petition - Design structural repair for end sections, headwalls, wing walls etc. | EA LS | 30 3 | \$5,000 \$50,000 | | \$150,000 | | | | \$150,000 | |
| Cost for Year 2: | | | | | \$696,000 | | \$324,000 | \$97,600 | \$324,900 | \$66,000 | \$1,803,314 |
| Finance Costs Year 2: | | | | | | | \$294,814 | | | | |

Project Schedule & Supporting Costing Information

1999 Dollars

March 3, 2000

| Project# | YEAR 3 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) |
|------------------------------|---|--|----------------------------------|---|--|-------------------------|---------------------------|---------------------|--------------------------------|-----------------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | |
| | | | | | | | | | | |
| 1 | Illicit Discharge Elimination Program - Prevent, detect, and remove all physical connections to the drainage system that convey any material other than storm water. | LS | | \$70,900 | | | | \$70,900 | | \$70,900 |
| 2 | Sampling Program for Bacteria, Phosphorus - 6 sampling sites, sample 2x/year for Bacteria, Phosphorus | EVENT | 2 | \$4,680 | | | | \$9,360 | | \$9,360 |
| 3 | USGS Stream Gage - Continue operation at Chalmers Road Bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 |
| 4 | Enforce Existing Ordinances - assume 1 additional staff - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance | LS | | \$75,000 | | | | \$75,000 | | \$75,000 |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenges to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 |
| 7 | Public Education Program -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 |
| 8a | Add in-system storage structure to large storm drain outlets (Assume drains >= 10.5') - County Farm Park Area Drain - Cleaning on a monthly basis | EA. EA. | 1 36 | \$100,000 \$200 | \$120,000 | | | \$7,200 | \$5,000 | \$125,000 \$7,200 |
| 11a | Retrofit Detention Ponds (3 year plan) <i>Survey 40 ponds</i> <i>Design</i> <i>Construct</i> - 100 yr. Storm ponds, remove existing outlet structures & replace with with a riser standpipe with a low flow opening - Retrofit ponds (100 yr. or first flush) with wetlands - Retrofit ponds (100 yr. or first flush) with a sediment forebay <i>Project management (staff time)</i> | EA. EA. EA. EA. EA. EA. | 40 30 30 5 10 0.5 | \$600 \$5,000 \$4,000 \$30,000 \$10,000 \$75,000 | | \$24,000 \$150,000 | | | \$25,000 \$5,000 \$5,000 | \$913,417 |
| 12a | Structural Repairs - to be done by petition - Start structural repairs for end sections, headwalls, wing walls etc. | EA | 5 | \$175,000 | \$1,050,000 | | | | \$105,000 | \$6,000 \$1,612,605 |
| 13 | Residential Street Sweeping - Phase 1 (Area F) - Reduce pollutant discharges to storm water by cleaning pavement monthly Cost includes labor, equipment, materials and services, and disposal. | MILE | 61 | \$100 | | | | \$6,100 | \$4,000 | \$10,100 |
| 14 | Brown Park Pond Improvements - Design | LS | 1 | | | \$250,000 | | | | \$250,000 |
| 15 | County Farm Park Wetland Pond - Design | LS | 1 | | | \$50,000 | | | | \$50,000 |
| Cost for Year 3: | | | | | \$1,540,000 | \$474,000 | \$192,500 | \$337,060 | \$103,000 | \$3,345,082 |
| Finance Costs Year 3: | | | | | | \$698,522 | | | | |

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 4 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) |
|------------------------------|---|--|----------------------------------|---|---|-----------------------|------------------------|---------------------|--------------------------------|--------------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | |
| 2a | Sampling Program for Benthics - 6 sampling sites, sample 1x/year for Benthics | EVENT | 1 | \$3,300 | | | | \$3,300 | | \$3,300 |
| 3 | USGS Stream Gage - Continue operation at Chalmers Road bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 |
| 4 | Enforce Existing Ordinances - Assume 1 additional staff - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance | LS | | \$75,000 | | | | \$75,000 | | \$75,000 |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenge to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 |
| 7 | Public Education Program -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 |
| 11a | Retrofit Detention Ponds (3 year plan) <i>Survey 40 ponds</i> <i>Design</i> <i>Construct</i> - 100 yr. Storm ponds, remove existing outlet structures & replace with with a riser standpipe with a low flow opening - Retrofit ponds (100 yr. or first flush) with wetlands - Retrofit ponds (100 yr. or first flush) with a sediment forebay <i>Project management (staff time)</i> | EA. EA. EA. EA. EA. EA. | 40 30 30 5 10 0.5 | \$600 \$5,000 \$4,000 \$30,000 \$10,000 \$75,000 | | \$24,000 \$150,000 | | | \$25,000 \$5,000 \$5,000 | \$913,417 |
| 12a | Structural Repairs - to be done by petition - Start structural repairs for end sections, headwalls, wing walls etc. | EA | 5 | \$175,000 | \$1,050,000 | | | | \$105,000 \$6,000 | \$1,612,605 |
| 13a | Residential Street Sweeping - Phase 2 (Areas C& F) - Increase area based on evaluation, may need increased capital costs of new sweeper. - Capital costs are estimated to be \$50,000/year to lease sweeper Cost includes labor, equipment, materials and services, and disposal. | MILE | 230 | \$100 | | | | \$23,000 | \$4,000 | \$27,000 |
| 14a | Brown Park Pond - Construction - Excavation above elevation 801 feet - Excavation below 801 feet - Wetland Creation | CY CY Acres | 25,000 40,000 8 | \$10 \$20 \$40,000 | \$300,000 \$960,000 \$384,000 | | | \$75,000 | \$50,000 | \$2,494,543 |
| 15a | County Farm Park Pond - Construction - Excavation above elevation 809 feet - Excavation below 809 feet - Install outlet structure - Wetland Creation | CY CY LS Acres | 7,000 3,000 1 1 | \$10 \$20 \$4,000 \$40,000 | \$84,000 \$72,000 \$4,800 \$48,000 | | | \$20,000 | \$30,000 | \$263,600 |
| Cost for Year 4: | | | | | \$3,272,800 | \$174,000 | \$330,700 | \$269,800 | \$178,000 | \$5,610,965 |
| Finance Costs Year 4: | | | | | | \$1,385,665 | | | | |

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 5 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) | |
|----------|--|--|----------------------------------|---|--|-----------------------|------------------------|---------------------|--|--------------------------------|-------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | | |
| 2 | Sampling Program for Bacteria, Phosphorus - 6 sampling sites, sample 2x/year for Bacteria, Phosphorus | EVENT | 2 | \$4,680 | | | | \$9,360 | | \$9,360 | |
| 3 | USGS Stream Gage - Continue operation at Chalmers Road Bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 | |
| 4 | Enforce Existing Ordinances - Assume 1 additional staff - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance | LS | | \$75,000 | | | | \$75,000 | | \$75,000 | |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenges to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 | |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 | |
| 7 | Public Education Program -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 | |
| 11a | Retrofit Detention Ponds (3 year plan) <i>Survey 40 ponds</i> <i>Design</i> <i>Construct</i> - 100 yr. Storm ponds, remove existing outlet structures & replace with with a riser standpipe with a low flow opening - Retrofit ponds (100 yr. or first flush) with wetlands - Retrofit ponds (100 yr. or first flush) with a sediment forebay Project management (staff time) | EA. EA. EA. EA. EA. EA. | 40 30 30 5 10 0.5 | \$600 \$5,000 \$4,000 \$30,000 \$10,000 \$75,000 | | \$24,000 \$150,000 | | | \$120,000 \$150,000 \$25,000 \$15,000 \$10,000 \$37,500 | \$25,000 \$5,000 \$5,000 | \$913,417 |
| 12a | Structural Repairs - to be done by petition - Start structural repairs for end sections, headwalls, wing walls etc. | EA | 5 | \$175,000 | \$1,050,000 | | | | \$105,000 | \$6,000 | \$1,612,605 |
| 13b | Residential Street Sweeping - Phase 3 (all areas) - Increase area based on evaluation, may need increased capital costs of new sweeper. - Capital costs are estimated to be \$50,000/year to lease sweeper Cost includes labor, equipment, materials and services, and disposal. | MILE | 634 | \$100 | | | | \$63,400 | \$4,000 | \$67,400 | |
| 14b | Brown Park Pond - start monitoring | LS | | \$10,000 | | | | \$10,000 | \$7,500 | \$17,500 | |
| 15b | County Farm Park Wetland Pond - start monitoring | LS | | \$10,000 | | | | \$10,000 | \$7,500 | \$17,500 | |

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 5 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) |
|------------------------------|---|-----------|-------|----------------|--|----------------------|------------------------|------------------|-------------------------|--------------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | |
| 16 | Commercial Street and Parking Lot Sweeping - This area will start based upon pilot evaluation - Parking lot sweeping estimate assumes 20% of commercial area is parking lot. | MILE | 314 | \$100 | | | | \$31,400 | \$3,000 | \$34,400 |
| 17 | Streambank Stabilization - Design - Assume 5 miles of stream need stabilization, bioengineering and/or rip rap | LS | 1 | | | \$178,000 | | | \$30,000 | \$208,000 |
| 18 | Habitat Improvements - Design - Revegetation of banks - Habitat Structures, small scale in-stream such as log check dams, etc. | LS | 1 | \$12,000 | | \$12,000 | | | \$10,000 | \$22,000 |
| 19 | Catch Basin Restriction Pilot Project - Place Catch Basin Restrictors in Area A (tributary to Landsdown Ponds) - Clean Catch Basins on a monthly basis - Remove restrictors at end of pilot program if desired | EA. | 419 | \$1,000 | \$502,800 | \$75,000 | \$50,000 | | \$25,000 | \$1,169,329 |
| | | EA. | 5,028 | \$40 | | | | \$201,120 | | |
| | | EA. | 419 | \$100 | \$50,280 | | | | | |
| * | Private Company Conducting Catch Basin Cleaning for the Creekshed- - Cleaning is done 2x/year by a private company, public and commercial areas * numbers are for comparison purposes | Mile | 948 | \$1,584 | | | | \$1,501,632 | | \$1,501,632 |
| 20 | Catch Basin Cleaning - Cleaning done by employees, 3 new vectors - Three crews of 2 people each are needed - Disposal costs are included | Mile | 948 | | \$75,000 | | | \$397,150 | | \$472,150 |
| Costs for Year 5: | | | | | \$2,048,080 | \$439,000 | \$242,500 | \$965,930 | \$181,000 | \$4,840,161 |
| Finance Costs Year 5: | | | | | | \$963,651 | | | | |

Project Schedule & Supporting Costing Information

**1999 Dollars
March 3, 2000**

| Project# | YEAR 6 Proposed Restoration Activity Description | Unit Cost | | | Construction Costs | | | O&M Cost (\$/yr) | Public Involvement (\$) | Total Project Costs (\$) |
|------------------------------|---|------------|---------|----------------------|--|----------------------|------------------------|---------------------|-------------------------|--------------------------|
| | | Units | Qty. | Unit Cost (\$) | Capital Costs (includes 20% contingency) | Design & Engineering | Construction Oversight | | | |
| 2a | Sampling Program for Benthics - 6 sampling sites, sample 1x/year for Benthics | EVENT | 1 | \$3,300 | | | | \$3,300 | | \$3,300 |
| 3 | USGS Stream Gage - Continue operation at Chalmers Road Bridge | YR | 1 | \$9,000 | | | | \$9,000 | | \$9,000 |
| 4 | Enforce Existing Ordinances - Assume 1 additional staff - Enforce construction SEC methods of slope stabilization, sediment trapping devices, and construction entrance and roadway stabilization & Pond Maintenance | LS | | \$75,000 | | | | \$75,000 | | \$75,000 |
| 5 | Ordinance and Code Revisions for storm water quality and management - * prorate across the community includes legal fees, public meetings and hearings assuming no legal challenges to the ordinance revisions | EA. | 2 | \$30,000 | | | | \$60,000 | | \$60,000 |
| 6 | Stream Maintenance (routine) - Removal of log jams and trees. Assumes 3 problems per year. - Routine structural repairs | EA. EA. | 3 5 | \$2,500 \$5,000 | | | | \$7,500 \$25,000 | | \$32,500 |
| 7 | Public Education Program -materials for one year -staff for one year | EA. EA. | | \$67,000 \$53,000 | | | | \$67,000 | \$53,000 | \$120,000 |
| 13b | Residential Street Sweeping - Phase 3 (all areas) - Continue sweeping area based on evaluation, may need increased capital costs of new - Capital costs are estimated to be \$50,000/year to lease sweeper Cost includes labor, equipment, materials and services, and disposal. | MILE | 634 | \$100 | | | | \$63,400 | \$4,000 | \$67,400 |
| 14b | Brown Park Pond - start monitoring | LS | | \$10,000 | | | | \$10,000 | \$7,500 | \$17,500 |
| 15b | County Farm Park Wetland Pond - start monitoring | LS | | \$10,000 | | | | \$10,000 | \$7,500 | \$17,500 |
| 16 | Commercial Street and Parking Lot Sweeping - Continue sweeping area based upon pilot evaluation - Parking lot sweeping estimate assumes 20% of commercial area is parking lot. | MILE | 314 | \$100 | | | | \$31,400 | \$3,000 | \$34,400 |
| 17a | Streambank Stabilization - start construction - Assume 5 miles of stream need stabilization, bioengineering and/or rip rap | LF | 26,400 | \$45 | \$1,425,600 | | \$142,560 | | \$30,000 | \$2,211,311 |
| 18a | Habitat Improvements - Implement - Revegetation of banks - Habitat Structures, small scale in-stream such as log check dams, etc. | LS EA. | 1 10 | \$100,000 \$3,000 | \$120,000 \$36,000 | | \$5,000 \$3,000 | | \$5,000 \$5,000 | \$174,000 |
| 20 | Catch Basin Cleaning - Cleaning done by employees using 3 leased vacators - Three crews of 2 people each are needed - Disposal costs are included | Mile | 948 | | \$75,000 | | | \$397,150 | | \$472,150 |
| Costs for Year 6: | | | | | \$1,656,600 | \$0 | \$150,560 | \$758,750 | \$115,000 | \$3,294,061 |
| Finance Costs Year 6: | | | | | | \$613,151 | | | | |