

# Extended Detention Basin

Site Name: 9-Devon Pk Dr - Avonwood

Site Location:

## Design & Maintenance Options

WATERSHED CHARACTERISTICS	Unit	Model Default	User	Chosen option
Drainage Area (DA)	ac	10.00	76.74	76.74
Drainage Area Impervious Cover (IC)*	pct	40%		40%
Watershed Land Use Type ("R"-Residential; "C"-Commercial; "Ro"-Roads; "I"-Industrial)		R		R

\* Included since frequently used to calculate storage volume.

FACILITY STORAGE VOLUME	Unit	Model Default	User	Chosen Option
Water Quality Volume (WQV)*	ft <sup>3</sup>	139,292		139,292
Flood Detention/Attenuation Volume	ft <sup>3</sup>			0
Channel Protection/Erosion Control Volume**	ft <sup>3</sup>			0
Other Volume (e.g., Recharge Volume)	ft <sup>3</sup>			0
TOTAL FACILITY STORAGE VOLUME	ft <sup>3</sup>		0	139,292

\* Model default is 1/2-inch of capture over drainage area; actual volume will depend on regional regulatory requirements and site-specific characteristics, etc.

\*\* For example, 24-hour extended detention storage.

DESIGN & MAINTENANCE OPTIONS	Unit	Model Default	User	Chosen Option
Choose Level of Maintenance ("H"=high; "M"=medium; "L"=low)	-	M		M
Main Pool Volume	yd <sup>3</sup>	5,159		5,159
Pct. Full when sediment removed from Basin*	pct	25%		25%
Quantity of Sediment Removed from Basin	yd <sup>3</sup>	1,290		1,290

\* Can adjust to be higher if expect heavy soils/sediment deposition to basin.

WHOLE LIFE COST OPTIONS	Unit	Model Default	User	Chosen Option
Discount Rate	%	5.50	4.9	4.9

# Extended Detention Basin

Choose Capital Costing Option

## CAPITAL COSTS

A	Total Facility Cost	\$ 129,125
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Site Name: 9-Devon Pk Dr - Avonwood

Site Location:

"A" - Simple Cost based on Drainage Area

"B" - User-Entered Engineer's Estimate

### Method A: Simple Cost based on Drainage Area

Cost based on Drainage Area	Cost per Acre of DA Treated		(Chosen option)
	Model Default	User	
Drainage Area (DA) (acres)	76.74		76.74
Base Facility Cost per acre DA*	\$ 1,000		\$ 1,000
Default Cost Adjustment for Smaller Projects**	1.35		1.35
Resulting Base Cost per acre DA	\$ 1,345		\$ 1,345
<b>Base Facility Cost</b> (rounded up to nearest \$100)	\$ 103,300		\$ 103,300
Engineering & Planning (default = 25% of Base Cost)	\$ 25,825		\$ 25,825
Land Cost	\$ 0		\$ 0
Other Costs	\$ 0		\$ 0
<b>Total Associated Capital Costs (e.g., Engineering, Land, etc.)</b>			<b>\$ 25,825</b>
<b>Total Facility Cost</b>	<b>\$ 129,125</b>		<b>\$ 129,125</b>

\* Base Facility Cost guidelines (circa Year 2005)

Very High = \$15,000/acre

High = \$5,000/acre

Medium = \$3,000/acre

Low = \$1,000/acre

\*\* Smaller projects generally incur higher unit costs for many components; factor added to adjust.

**Suggestion: Use higher or lower Base Costs to reflect higher or lower regional construction costs.**

**Some jurisdictions already have cost relationships established; check to see if any available.**

### Method B: User-Entered Engineer's Estimate

Select from the following list, as applicable to the project or facility type; add items where necessary

Total Facility Base Costs	Unit	Unit Cost	Quantity	Cost
Mobilization	LS			\$ -
Clearing & Grubbing	AC			\$ -
Excavation/Embankment	CY			\$ -
Dewatering	LS			\$ -
Haul/Dispose of Excavated Material	CY			\$ -
Sediment Pretreatment Struct. (e.g., inlet sump)	LF			\$ -
Trash Rack	LF			\$ -
Inflow Structure(s)	LS			\$ -
Energy Dissipation Apron	LS			\$ -
Outflow Structure	LS			\$ -
Overflow Structure (concrete or rock riprap)	CY			\$ -
Dam/Embankment	CY			\$ -
Impermeable Liner	SY			\$ -
Site Landscaping (e.g., trees)	LS			\$ -
Maintenance Access Ramp/Pad	LS			\$ -
Revegetation/Erosion Controls	SY			\$ -
Traffic Control	LS			\$ -
Amenity Items (e.g. recreational facilities, seating)	LS			\$ -
Signage, Public Education Materials, etc.	LS			\$ -
Other				\$ -
Other				\$ -
Other				\$ -
<b>Total Facility Base Cost</b>				<b>\$ -</b>
Associated Capital Costs	Unit	Unit Cost	Quantity	Cost
Project Management				\$ -
Engineering: Preliminary				\$ -
Engineering: Final Design				\$ -
Topographic Survey				\$ -
Geotechnical				\$ -
Landscape Design				\$ -
Land Acquisition (site, easements, etc.)				\$ -
Utility Relocation				\$ -
Legal Services				\$ -
Permitting & Construction Inspection				\$ -
Sales Tax				\$ -
Contingency (e.g., 30%)				\$ -
<b>Total Associated Capital Costs</b>				<b>\$ -</b>
<b>Total Facility Cost</b>				<b>\$ -</b>



# Extended Detention Basin

Site Name: 9-Devon Pk Dr - Avonwood

Site Location:

## Whole Life Costs

<b>EUAC \$</b>	<b>4,067</b>
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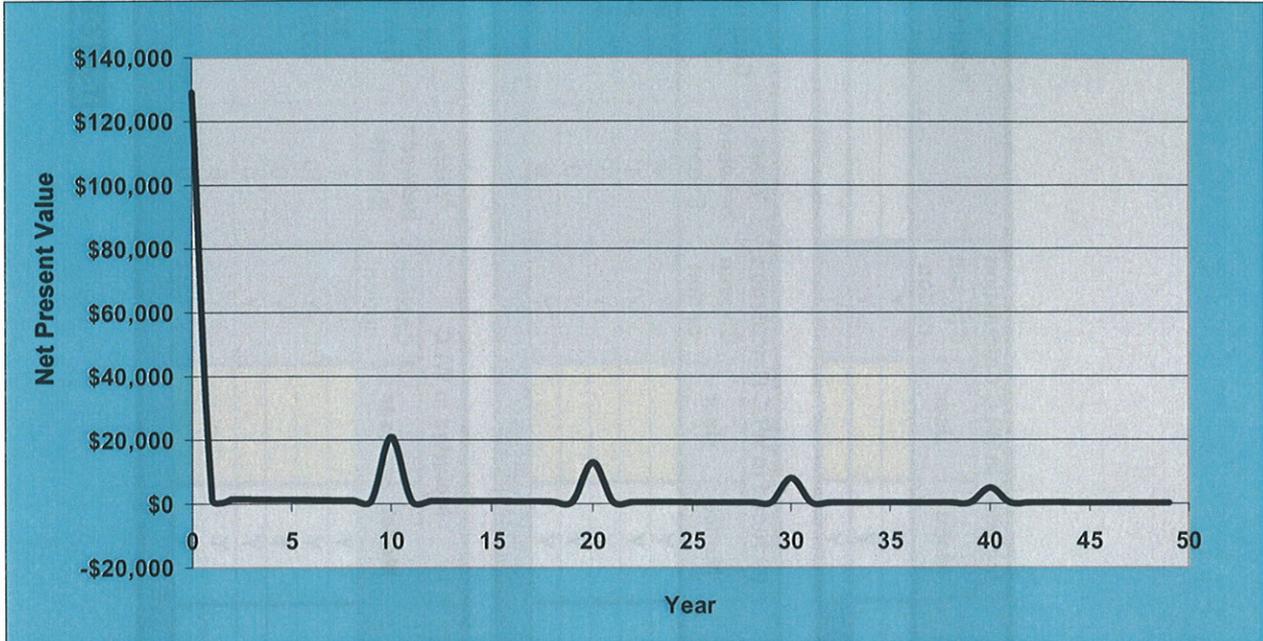
Year	Discount Factor	Capital & Assoc. Costs	Regular Maint. Costs	Corrective & Infrequent Maint. Activities			Total Irregular Maint.	Total Costs	Present Value of Costs	Cumulative Costs	
				Intermit. Facility Maint.	Sediment Removal	Other [User Entered]				Cash	Present Value
<b>Cash Sum (\$)</b>								<b>\$ 336,172</b>	<b>\$ 203,327</b>		
0	1.000	\$ 129,125						\$ 129,125	\$ 129,125	\$ 129,125	\$ 129,125
1	0.953	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,519	\$ 130,718	\$ 130,644
2	0.909	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,448	\$ 132,312	\$ 132,092
3	0.866	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,380	\$ 133,905	\$ 133,472
4	0.826	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,316	\$ 135,498	\$ 134,788
5	0.787	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,254	\$ 137,092	\$ 136,042
6	0.750	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,196	\$ 138,685	\$ 137,238
7	0.715	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,140	\$ 140,278	\$ 138,378
8	0.682	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,087	\$ 141,872	\$ 139,465
9	0.650	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,036	\$ 143,465	\$ 140,501
10	0.620	\$ -	\$ 593	\$ 1,000	\$ 32,244	\$ -	\$ 33,244	\$ 33,837	\$ 20,972	\$ 177,302	\$ 161,473
11	0.591	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 941	\$ 178,895	\$ 162,414
12	0.563	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 897	\$ 180,489	\$ 163,311
13	0.537	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 856	\$ 182,082	\$ 164,167
14	0.512	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 816	\$ 183,675	\$ 164,982
15	0.488	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 777	\$ 185,269	\$ 165,760
16	0.465	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 741	\$ 186,862	\$ 166,501
17	0.443	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 707	\$ 188,455	\$ 167,208
18	0.423	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 674	\$ 190,049	\$ 167,881
19	0.403	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 642	\$ 191,642	\$ 168,523
20	0.384	\$ -	\$ 593	\$ 1,000	\$ 32,244	\$ -	\$ 33,244	\$ 33,837	\$ 12,998	\$ 225,479	\$ 181,521
21	0.366	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 583	\$ 227,072	\$ 182,105
22	0.349	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 556	\$ 228,665	\$ 182,661
23	0.333	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 530	\$ 230,259	\$ 183,191
24	0.317	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 505	\$ 231,852	\$ 183,697
25	0.302	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 482	\$ 233,445	\$ 184,178
26	0.288	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 459	\$ 235,039	\$ 184,638
27	0.275	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 438	\$ 236,632	\$ 185,076
28	0.262	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 417	\$ 238,225	\$ 185,493
29	0.250	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 398	\$ 239,819	\$ 185,891
30	0.238	\$ -	\$ 593	\$ 1,000	\$ 32,244	\$ -	\$ 33,244	\$ 33,837	\$ 8,056	\$ 273,656	\$ 193,947
31	0.227	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 362	\$ 275,249	\$ 194,309
32	0.216	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 345	\$ 276,842	\$ 194,654
33	0.206	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 329	\$ 278,436	\$ 194,982
34	0.197	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 313	\$ 280,029	\$ 195,295
35	0.187	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 299	\$ 281,622	\$ 195,594
36	0.179	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 285	\$ 283,216	\$ 195,879
37	0.170	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 271	\$ 284,809	\$ 196,150
38	0.162	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 259	\$ 286,402	\$ 196,409
39	0.155	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 247	\$ 287,996	\$ 196,656
40	0.148	\$ -	\$ 593	\$ 1,000	\$ 32,244	\$ -	\$ 33,244	\$ 33,837	\$ 4,993	\$ 321,832	\$ 201,649
41	0.141	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 224	\$ 323,426	\$ 201,873
42	0.134	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 214	\$ 325,019	\$ 202,086
43	0.128	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 204	\$ 326,612	\$ 202,290
44	0.122	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 194	\$ 328,206	\$ 202,484
45	0.116	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 185	\$ 329,799	\$ 202,669
46	0.111	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 176	\$ 331,392	\$ 202,846
47	0.106	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 168	\$ 332,986	\$ 203,014
48	0.101	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 160	\$ 334,579	\$ 203,174
49	0.096	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 153	\$ 336,172	\$ 203,327
50	0.091	\$ 1	\$ 593	\$ 1,000	\$ 32,244	\$ -	\$ 33,244	\$ 33,838	\$ 3,095	\$ 370,010	\$ 206,422

# Extended Detention Basin

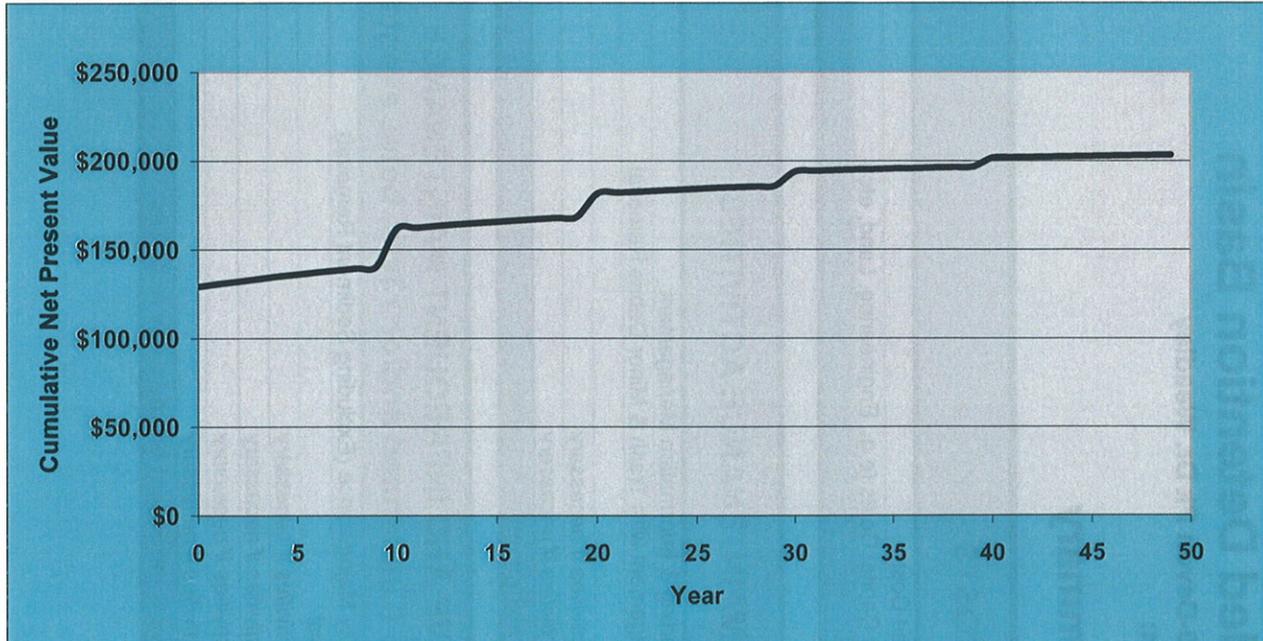
Site Name: 9-Devon Pk Dr - Avonwood

Site Location:

## Net Present Value over time



## NPV - Cumulative



# Extended Detention Basin

Site Name: 10-Devon Pk Dr. Weadley

Site Location:

## Cost Summary

	Included in WLC Calculation			Total Cost
	Model	User	Chosen option	
Total Facility Base Cost	Y		Y	\$190,100
Total Associated Capital Costs (e.g., Engineering, Land, etc.)	Y		Y	\$47,525
<b>Capital Costs</b>	Y		Y	<b>\$237,625</b>

	Included in WLC Calculation			Years between Events	Cost per Event	Total Cost per Year
	Model	User	Chosen option			
<b>REGULAR MAINTENANCE ACTIVITIES</b>						
Inspection, Reporting & Information Management	Y		Y	3	\$140	\$47
Vegetation Management with Trash & Minor Debris Removal	Y		Y	1	\$480	\$480
Vector Control	Y		Y	3	\$200	\$67
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<b>Totals, Regular Maintenance Activities</b>						<b>\$593</b>

	Included in WLC			Years between Events	Cost per Event	Total Cost per Year
	Model	User	Chosen option			
<b>CORRECTIVE AND INFREQUENT MAINTENANCE ACTIVITIES (Unplanned and/or &gt;3yrs. betw. events)</b>						
Intermittent Facility Maintenance (Excluding Sediment Removal)	Y		Y	1	\$1,000	\$1,000
Sediment Removal	Y		Y	10	\$75,625	\$7,563
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<i>add additional activities if necessary</i>	Y		Y	0	\$0	\$0
<b>Totals, Corrective &amp; Infrequent Maintenance Activities</b>						<b>\$8,563</b>

**Total O&M \$9,156**

# Extended Detention Basin

Site Name:10-Devon Pk Dr. Weadley

Site Location:

## Design & Maintenance Options

WATERSHED CHARACTERISTICS	Unit	Model Default	User	Chosen option
Drainage Area (DA)	ac	10.00	180.00	180.00
Drainage Area Impervious Cover (IC)*	pct	40%		40%
Watershed Land Use Type ("R"-Residential; "C"-Commercial; "Ro"-Roads; "I"-Industrial)		R		R

\* Included since frequently used to calculate storage volume.

FACILITY STORAGE VOLUME	Unit	Model Default	User	Chosen Option
Water Quality Volume (WQV)*	ft <sup>3</sup>	326,700		326,700
Flood Detention/Attenuation Volume	ft <sup>3</sup>			0
Channel Protection/Erosion Control Volume**	ft <sup>3</sup>			0
Other Volume (e.g., Recharge Volume)	ft <sup>3</sup>			0
TOTAL FACILITY STORAGE VOLUME	ft <sup>3</sup>		0	326,700

\* Model default is 1/2-inch of capture over drainage area; actual volume will depend on regional regulatory requirements and site-specific characteristics, etc.

\*\* For example, 24-hour extended detention storage.

DESIGN & MAINTENANCE OPTIONS	Unit	Model Default	User	Chosen Option
Choose Level of Maintenance ("H"=high; "M"=medium; "L"=low)	-	M		M
Main Pool Volume	yd <sup>3</sup>	12,100		12,100
Pct. Full when sediment removed from Basin*	pct	25%		25%
Quantity of Sediment Removed from Basin	yd <sup>3</sup>	3,025		3,025

\* Can adjust to be higher if expect heavy soils/sediment deposition to basin.

WHOLE LIFE COST OPTIONS	Unit	Model Default	User	Chosen Option
Discount Rate	%	5.50	4.9	4.9

# Extended Detention Basin

Choose Capital Costing Option

## CAPITAL COSTS

A	Total Facility Cost	\$ 237,625
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Site Name: 10-Devon Pk Dr. Weadley  
 Site Location:

"A" - Simple Cost based on Drainage Area  
 "B" - User-Entered Engineer's Estimate

### Method A: Simple Cost based on Drainage Area

Cost based on Drainage Area	Cost per Acre of DA Treated		(Chosen option)
	Model Default	User	
Drainage Area (DA) (acres)	180.00		180.00
Base Facility Cost per acre DA*	\$ 1,000		\$ 1,000
Default Cost Adjustment for Smaller Projects**	1.06		1.06
Resulting Base Cost per acre DA	\$ 1,056		\$ 1,056
<b>Base Facility Cost</b> (rounded up to nearest \$100)	\$ 190,100		<b>\$ 190,100</b>
Engineering & Planning (default = 25% of Base Cost)	\$ 47,525		\$ 47,525
Land Cost	\$ 0		\$ 0
Other Costs	\$ 0		\$ 0
<b>Total Associated Capital Costs (e.g., Engineering, Land, etc.)</b>			<b>\$ 47,525</b>
<b>Total Facility Cost</b>	<b>\$ 237,625</b>		<b>\$ 237,625</b>

\* Base Facility Cost guidelines (circa Year 2005)

- Very High = \$15,000/acre
- High = \$5,000/acre
- Medium = \$3,000/acre
- Low = \$1,000/acre

\*\* Smaller projects generally incur higher unit costs for many components; factor added to adjust.

**Suggestion: Use higher or lower Base Costs to reflect higher or lower regional construction costs. Some jurisdictions already have cost relationships established; check to see if any available.**

### Method B: User-Entered Engineer's Estimate

Select from the following list, as applicable to the project or facility type; add items where necessary

Total Facility Base Costs	Unit	Unit Cost	Quantity	Cost
Mobilization	LS			\$ -
Clearing & Grubbing	AC			\$ -
Excavation/Embankment	CY			\$ -
Dewatering	LS			\$ -
Haul/Dispose of Excavated Material	CY			\$ -
Sediment Pretreatment Struct. (e.g., inlet sump)	LF			\$ -
Trash Rack	LF			\$ -
Inflow Structure(s)	LS			\$ -
Energy Dissipation Apron	LS			\$ -
Outflow Structure	LS			\$ -
Overflow Structure (concrete or rock riprap)	CY			\$ -
Dam/Embankment	CY			\$ -
Impermeable Liner	SY			\$ -
Site Landscaping (e.g., trees)	LS			\$ -
Maintenance Access Ramp/Pad	LS			\$ -
Revegetation/Erosion Controls	SY			\$ -
Traffic Control	LS			\$ -
Amenity Items (e.g. recreational facilities, seating)	LS			\$ -
Signage, Public Education Materials, etc.	LS			\$ -
Other				\$ -
Other				\$ -
Other				\$ -
<b>Total Facility Base Cost</b>				<b>\$ -</b>
Associated Capital Costs	Unit	Unit Cost	Quantity	Cost
Project Management				\$ -
Engineering: Preliminary				\$ -
Engineering: Final Design				\$ -
Topographic Survey				\$ -
Geotechnical				\$ -
Landscape Design				\$ -
Land Acquisition (site, easements, etc.)				\$ -
Utility Relocation				\$ -
Legal Services				\$ -
Permitting & Construction Inspection				\$ -
Sales Tax				\$ -
Contingency (e.g., 30%)				\$ -
<b>Total Associated Capital Costs</b>				<b>\$ -</b>
<b>Total Facility Cost</b>				<b>\$ -</b>

# Extended Detention Basin

Site Name: 10-Devon Pk Dr. Weadley

Site Location:

## Maintenance Costs

**M** User entered MEDIUM maintenance level in Sheet 1.

\*\* Change on Sheet 1 if desired/applicable \*\*

User may enter lump sum here

Cost Item	Frequency (months betw. maint. events)						Average Labor Crew Size						Hours per Event						Machinery Cost/Hour (\$)						Materials & Incident-tals Cost/Event (\$)						Total cost per visit (\$)									
	Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input					
	36	12	36	12	36	12	1.0	2.0	1.0	2.0	1.0	2.0	2	4	0	0	0	0	30	60	200	0	0	0	0	0	200	0	0	0	140	480	200	0	0	0				
Inspection, Reporting & Information Management																																								
Vegetation Management with Trash & Minor Debris Removal																																								
Vector Control																																								
add additional activities if necessary																																								
add additional activities if necessary																																								
<b>CORRECTIVE AND INFREQUENT MAINTENANCE ACTIVITIES (Unplanned and/or &gt; 3 yrs. betw. events)</b>																																								
Cost Item	Frequency (months betw. maint. events)						Average Labor Crew Size						Hours per Event						Machinery Cost/Hour (\$)						Materials & Incident-tals Cost/Event (\$)						Total cost per visit (\$)									
	Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input					
	12	0	12	0	12	0	0.0	0.0	0.0	0.0	0.0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,000	0	0	0	0	0				
Intermittent Facility Maintenance (Excluding Sediment Removal)																																								
add additional activities if necessary																																								
add additional activities if necessary																																								
Cost Item	Frequency (months betw. maint. events)						Sediment Quantity (yds3) [from Sheet 1]						Cost per yd3 to Remove, Dispose of Sediment						Total cost per visit (\$)																					
	Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input		Model		User		Input											
	120	0	120	0	120	0	3,025	3,025	0	0	0	0	25.0	25.0	0	0	0	0	75,625	0	0	0	0	0																
Sediment Removal																																								
add additional activities if necessary																																								
add additional activities if necessary																																								

Note: For facilities judged to require larger or smaller amounts of maintenance (due to land area, etc.), consider multiplying the Model output in Column U by a multiplier (e.g., 120%) in Column V. Another quick means of adjustment would be to multiply the number of Hours per Event by a multiplier in the User Input field.

# Extended Detention Basin

Site Name: 10-Devon Pk Dr. Weadley

Site Location:

## Whole Life Costs

EUAC \$ 7,442

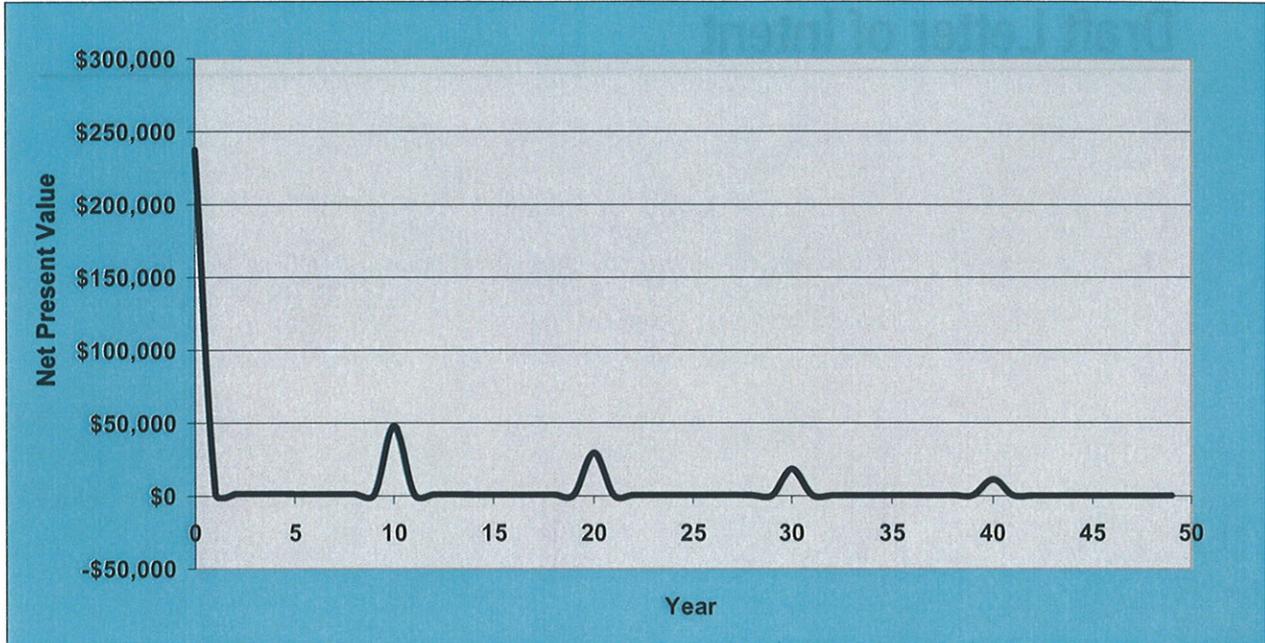
Year	Discount Factor	Capital & Assoc. Costs	Regular Maint. Costs	Corrective & Infrequent Maint. Activities			Total Irregular Maint.	Total Costs	Present Value of Costs	Cumulative Costs	
				Intermit. Facility Maint.	Sediment Removal	Other [User Entered]				Cash	Present Value
<b>Cash Sum (\$)</b>								<b>\$ 618,198</b>	<b>\$ 372,109</b>		
0	1.000	\$ 237,625						\$ 237,625	\$ 237,625	\$ 237,625	\$ 237,625
1	0.953	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,519	\$ 239,218	\$ 239,144
2	0.909	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,448	\$ 240,812	\$ 240,592
3	0.866	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,380	\$ 242,405	\$ 241,972
4	0.826	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,316	\$ 243,998	\$ 243,288
5	0.787	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,254	\$ 245,592	\$ 244,542
6	0.750	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,196	\$ 247,185	\$ 245,738
7	0.715	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,140	\$ 248,778	\$ 246,878
8	0.682	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,087	\$ 250,372	\$ 247,965
9	0.650	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 1,036	\$ 251,965	\$ 249,001
10	0.620	\$ -	\$ 593	\$ 1,000	\$ 75,625	\$ -	\$ 76,625	\$ 77,218	\$ 47,859	\$ 329,183	\$ 296,860
11	0.591	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 941	\$ 330,777	\$ 297,801
12	0.563	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 897	\$ 332,370	\$ 298,699
13	0.537	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 856	\$ 333,963	\$ 299,554
14	0.512	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 816	\$ 335,557	\$ 300,370
15	0.488	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 777	\$ 337,150	\$ 301,147
16	0.465	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 741	\$ 338,743	\$ 301,888
17	0.443	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 707	\$ 340,337	\$ 302,595
18	0.423	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 674	\$ 341,930	\$ 303,268
19	0.403	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 642	\$ 343,523	\$ 303,911
20	0.384	\$ -	\$ 593	\$ 1,000	\$ 75,625	\$ -	\$ 76,625	\$ 77,218	\$ 29,663	\$ 420,742	\$ 333,573
21	0.366	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 583	\$ 422,335	\$ 334,157
22	0.349	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 556	\$ 423,928	\$ 334,713
23	0.333	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 530	\$ 425,522	\$ 335,243
24	0.317	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 505	\$ 427,115	\$ 335,749
25	0.302	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 482	\$ 428,708	\$ 336,230
26	0.288	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 459	\$ 430,302	\$ 336,690
27	0.275	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 438	\$ 431,895	\$ 337,128
28	0.262	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 417	\$ 433,488	\$ 337,545
29	0.250	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 398	\$ 435,082	\$ 337,943
30	0.238	\$ -	\$ 593	\$ 1,000	\$ 75,625	\$ -	\$ 76,625	\$ 77,218	\$ 18,385	\$ 512,300	\$ 356,328
31	0.227	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 362	\$ 513,893	\$ 356,689
32	0.216	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 345	\$ 515,487	\$ 357,034
33	0.206	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 329	\$ 517,080	\$ 357,363
34	0.197	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 313	\$ 518,673	\$ 357,676
35	0.187	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 299	\$ 520,267	\$ 357,975
36	0.179	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 285	\$ 521,860	\$ 358,259
37	0.170	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 271	\$ 523,453	\$ 358,531
38	0.162	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 259	\$ 525,047	\$ 358,790
39	0.155	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 247	\$ 526,640	\$ 359,036
40	0.148	\$ -	\$ 593	\$ 1,000	\$ 75,625	\$ -	\$ 76,625	\$ 77,218	\$ 11,395	\$ 603,858	\$ 370,431
41	0.141	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 224	\$ 605,452	\$ 370,655
42	0.134	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 214	\$ 607,045	\$ 370,869
43	0.128	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 204	\$ 608,638	\$ 371,072
44	0.122	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 194	\$ 610,232	\$ 371,266
45	0.116	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 185	\$ 611,825	\$ 371,452
46	0.111	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 176	\$ 613,418	\$ 371,628
47	0.106	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 168	\$ 615,012	\$ 371,796
48	0.101	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 160	\$ 616,605	\$ 371,957
49	0.096	\$ -	\$ 593	\$ 1,000	\$ -	\$ -	\$ 1,000	\$ 1,593	\$ 153	\$ 618,198	\$ 372,109
50	0.091	\$ 1	\$ 593	\$ 1,000	\$ 75,625	\$ -	\$ 76,625	\$ 77,219	\$ 7,062	\$ 695,418	\$ 379,172

# Extended Detention Basin

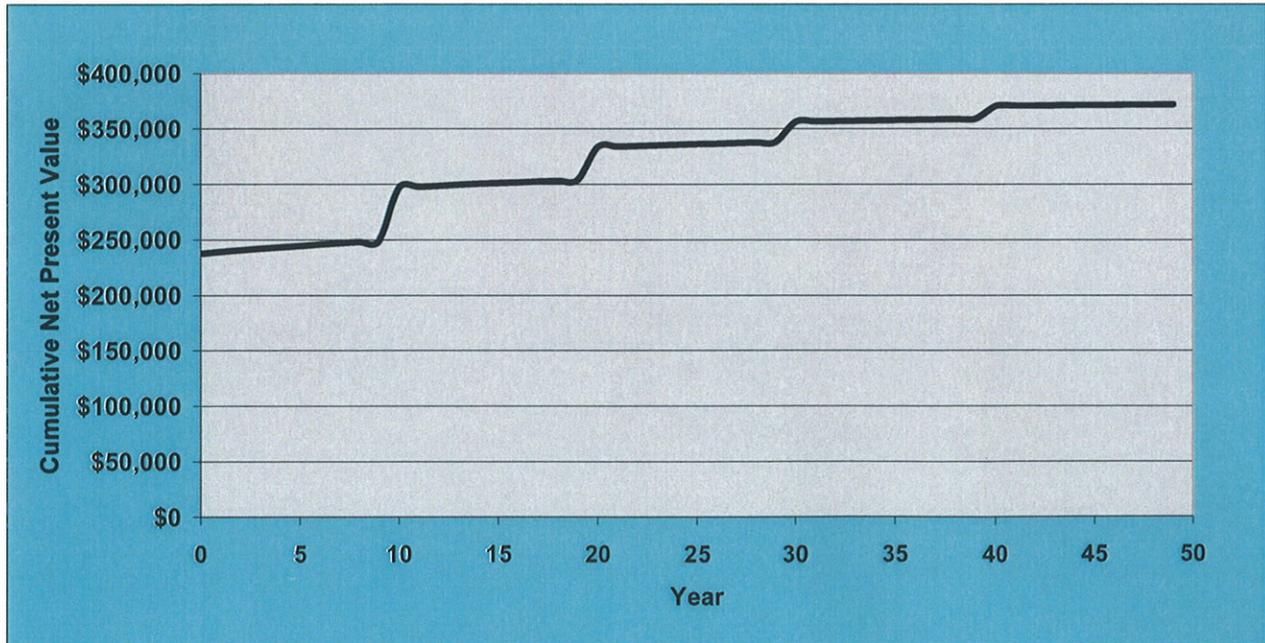
Site Name: 10-Devon Pk Dr. Weadley

Site Location:

## Net Present Value over time



## NPV - Cumulative



# **Attachment 2 –Excelon Schuylkill River Watershed Restoration Program Grants and Draft Letter of Intent**

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## ***Exelon Schuylkill River Watershed Restoration Program Grant Guidelines for 2008 Round***

### **New for the 2008 Grant Round**

We are expanding the watershed restoration program to allow for stormwater projects throughout the watershed.

#### **Goals and Purposes of Watershed Restoration grants:**

Watershed Restoration grants are available to non-profit organizations, county & municipal governments, and other related government agencies to undertake implementation projects that will improve the quality and quantity of water in the Schuylkill River and its tributaries. The goal of the Exelon Schuylkill River Restoration Program is to fund projects in the Schuylkill River Basin that are consistent with restoration and water management goals for the Schuylkill River.

#### **Funding Priorities:**

Funding priority for the 2008 Round will be given to projects that mitigate water quality and quantity problems resulting from acid mine drainage, agricultural runoff, and stormwater issues. At least 10% of available funds will be targeted toward implementation projects within the Perkiomen Creek Watershed. Eligible projects in the Perkiomen Creek Watershed may include stormwater management, agricultural runoff mitigation, and pathogen remediation. Projects that are being undertaken to satisfy local, state, or federal regulatory requirements are not eligible for funding.

#### **Evaluation**

Projects will be evaluated in a two-step process that includes (1) a Letter of Intent followed by (2) an invitation to submit a full application if the letter of intent is recommended by the review committee. Evaluation factors include:

- The project's ability to improve the quality and quantity of water in the Schuylkill River;
- The project exhibits high standards of planning and design, including implementation of Best Management Practices;

- The relationship to previous watershed restoration efforts within a particular area;
- The project is consistent with local, state, federal, or other plans;
- The project is positioned for implementation with little or no additional planning;
- The project is single-phased or in the final phase of implementation. *Projects that will require multiple phases to have demonstrable effects on water quality or quantity will not be considered unless the submitted phase will result in measurable improvements;*
- The project will require minimal monitoring following completion to demonstrate positive environmental effects;
- The project will effectively leverage the resources of two or more partners, including a sponsoring partner with sufficient capacity to manage the project following completion or will utilize volunteers;
- How the project will impact low income or minority populations.

Applicants who are invited to submit a full application will also be expected to Present their proposed project to the Exelon Grants Review Committee. These presentations will be held during the month of June at the offices of the Schuylkill River Heritage Area in Pottstown, Pennsylvania.

#### **Award Amount**

- Grant applicants may request between \$25,000 and \$100,000.
- Applicants working in Perkiomen Creek Watershed may request between \$5,000 and \$100,000.

#### **Match Requirements**

- All projects require a minimum of \$1 of matching funds for every \$3 of grant funds (25%). The grant award may not exceed 75% of the total project cost.
- Cash and donated products/professional services are eligible match sources. Volunteer labor and time spent by organizational staff are not eligible match sources.
- All public and private sources are considered eligible matching funds.
- Matching funds derived from private, non-governmental sources are encouraged, but not required.

#### **Grant Period**

All projects must be completed within three (3) years from the date of the contract between the applicant and the Schuylkill River Heritage Area.

#### **Eligible Expenses**

Grant funds may be used for the following purposes:

- Implementation: Includes labor, materials, signage, site preparation, permit fees, and other "hard costs."
- Project management: Up to 10% of the grant award may be utilized for direct costs associated with project management by the applicant or

subcontractor. Eligible project management expenses include: subcontractor/consultant fees, salary for organizational staff responsible for project implementation, travel, meeting expenses and other direct costs.

- If a project has remaining design issues that need to be completed prior to implementation, the review committee will consider this as an eligible expense on a case by case basis. However, the applicant must demonstrate that the projects implementation phase will still be completed during the three year grant period.

Grant funds may NOT be used for the following purposes:

- Land acquisition
- Projects that are being undertaken to satisfy local, state, or federal regulatory requirements.
- Indirect Costs

### **Contractor Selection:**

All contractors working on projects funded by a grant through this program must be selected by a competitive process. Applicants who desire to use specific contractors not selected competitively, may request approval to do so from the Schuylkill River Heritage Area. The Schuylkill River Heritage Area reserves the right to review and approve all selected contractors.

### **Source of Funds/Restrictions:**

Watershed Restoration Grants are funded by Exelon Nuclear through the Exelon Schuylkill River Restoration and Monitoring Fund. These funds are derived from private sources and may be used as private match for other funding sources.

### **Full Application Process**

Eligible organizations should submit 8 copies of their full application including a Cover Letter, completed application form, project narrative that is a maximum of five (5) pages, not including cover letter, and financial information. Copies should **NOT** be stapled but bound by paperclip and/or butterfly clip.

- Project Description including:
  - What do you propose to do?
  - How will results be measured and monitored, and how will success be demonstrated?
  - How will it improve the quality and or quantity of water in the Schuylkill River or its tributaries?
- Project Type:
  - Please list: Exelon Schuylkill River Watershed Restoration Program and type of project: Acid Mine Drainage Project, Agriculture Project, or Storm Water Project
  - If the project is in the Perkiomen Creek Watershed, please list: Exelon Schuylkill River Watershed Restoration Program-Perkiomen

Creek Watershed and type of project: Storm Water Management Project, Agriculture Project or Pathogen Remediation Project.

- Project Photographs/topographic maps/sketches, etc
  - It is highly recommended that you include photographs of the property/project site. Topographic maps, sketches, drawings or any other visual displays that will help the review committee understand the project better are also suggested.
  
- Name of applicant organization
- Name of Project Director
- Contact information for Project Director
- Project name
- Project location (include municipality and county)
- Total project budget
- Amount of grant requested
- Potential partner organizations
- Potential sources of matching funds

### **2008 Exelon Grant Timeline**

- February 15: Application materials available online at [www.schuylkillriver.org](http://www.schuylkillriver.org)
- March 28: Letters of Intent due to SRHA by 4:00 p.m.
- April 18: Invitation to submit Full Application notice sent
- May 30: Final applications due to SRHA by 4:00 p.m.

**Full Applications are due to the Schuylkill River Heritage Area, Attn: Grants Program Coordinator, 140 College Drive, Pottstown, PA 19464 by 4:00 p.m. on May 30, 2008.**

As previously stated, applicants who are invited to submit a full application will be asked to meet with the review committee to make a presentation of their project.

#### **For more information contact:**

Grants Program Coordinator • Schuylkill River Heritage Area.  
140 College Drive • Pottstown, PA 19464 •  
484-945-0200 • Fax 484-945-0204 • [tfenchel@schuylkillriver.org](mailto:tfenchel@schuylkillriver.org)

Mr. Tim Fenchel  
Grants Program Coordinator  
Schuylkill River Heritage Area  
140 College Drive  
Pottstown, PA 19464

RE: Exelon Schuylkill River Watershed Restoration Program Grants - Letter of Intent

Dear Mr. Fenchel:

Tredyffrin Township is pleased to submit a letter of intent to apply for a 2008 Exelon Schuylkill River Watershed Restoration Grant. The township is presently completing the selection and design of two stormwater retrofit projects for the Trout Creek Watershed, of which the township is xx% of the total watershed area. These two projects are of particular relevance to the restoration and water management goals of the Schuylkill River and we therefore seek your consideration for funding in the 2008 grant program in the amount of \$50,000.

Based on the Schuylkill River Source Water Protection Plan<sup>1</sup>, the Trout Creek Watershed was highly ranked in terms of its impact on the Schuylkill River and drinking water quality in particular. This study ranked Trout Creek as a top 5 contributor for most of the pollutants studied and scored the watershed 6<sup>th</sup> overall in the entire Schuylkill river basin for upcoming projects. Based on this direct connection to the Schuylkill River quality, we believe the designs to be produced in our current effort will significantly contribute to improved water quality for Trout Creek and the Schuylkill River.

The township is currently conducting a detailed planning study that will result in completion of the following objectives by April:

- Evaluation of the entire watershed with a state-of-the-art hydrologic model
- Development of evaluation criteria and selection of the two most beneficial stormwater retrofit projects to reduce stormwater runoff volume and associated pollutants.
- Designs of the 2 selected projects suitable for bidding
- Development of an educational document to help connect the residents to the Trout Creek Watershed and the importance of managing the impacts of stormwater runoff.

The project is not being driven by any regulatory requirements and is based on the Townships desire to improve our management of stormwater quantity and quality and to demonstrate the benefits of a proactive program to address urban stormwater and non-point source pollution. Tredyffrin Township recognizes the importance of responsible environmental stewardship and took the initiative to build upon the Chester County Water Resources Authority's *Watersheds* plan and the *Trout Creek Watershed Action Plan* with the development of the *Trout Creek Watershed Restoration and Protection Plan*. The proposed project responds to the

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<sup>1</sup> Philadelphia Water Department, *Schuylkill River Source Water Protection Plan*, January, 2006

recommendations of these prior planning efforts and the above-mentioned Schuylkill River Source Water Protection Plan with the specific focus of implementing meaningful stormwater controls, which are consistent with federal, state, and local water quality objectives.

Due to the extensive modeling study conducting during the planning phase of our efforts, the benefit of the project will have been already described in detail and will not require significant follow-up monitoring to demonstrate the benefit. Notwithstanding, the Township Environmental Advisory Council will participate in follow-up monitoring of the Trout Creek Watershed and the implemented projects as part of World Monitoring Day.

Our township engineer and his nationally recognized consultant team are ensuring that these projects exhibit the highest standards of planning and design for the implementation of Best Management Practices (BMPs). The township will sponsor the project and has sufficient technical and financial capacity to manage the project to completion and to maintain it thereafter. The project is also being conducted with the support of the following partners who have already agreed to provide their written support for the project and to provide in-kind services to support its implementation:

- The Tredyffrin Township Environmental Advisory Council
- Chester County Water Resources Authority
- The Philadelphia Water Department (BM to connect Steve with Joanne Dahme from PWD to get a letter)
- Add more as appropriate and specifically reference matches amounts if possible.

The township has budgeted matching funds and in-kind professional services to implement the selected control project in 2008. Specifically, these resources include \$xx,xxx in capital funds, \$99,000 in professional services to complete planning and design of the BMPs, and the in kind services of our engineer, Steve Burgo, who will direct the project should it be selected for funding

Based on the schedule included in the grant guidelines, the project will be positioned for implementation with no additional planning work and we look forward to the opportunity to submit a full application for funding. If you have any questions or require additional information, please contact Steve Burgo of my staff at (610) 408-3616. Thank you for your consideration.

Sincerely,

Mimi Gleason,  
Township Manager

### Trout Creek Sensitivity Analysis

- Higher Differentiation in Criteria Weights
- Emphasize Flooding
- Special Weighting Criteria for Small, Site-Level Projects

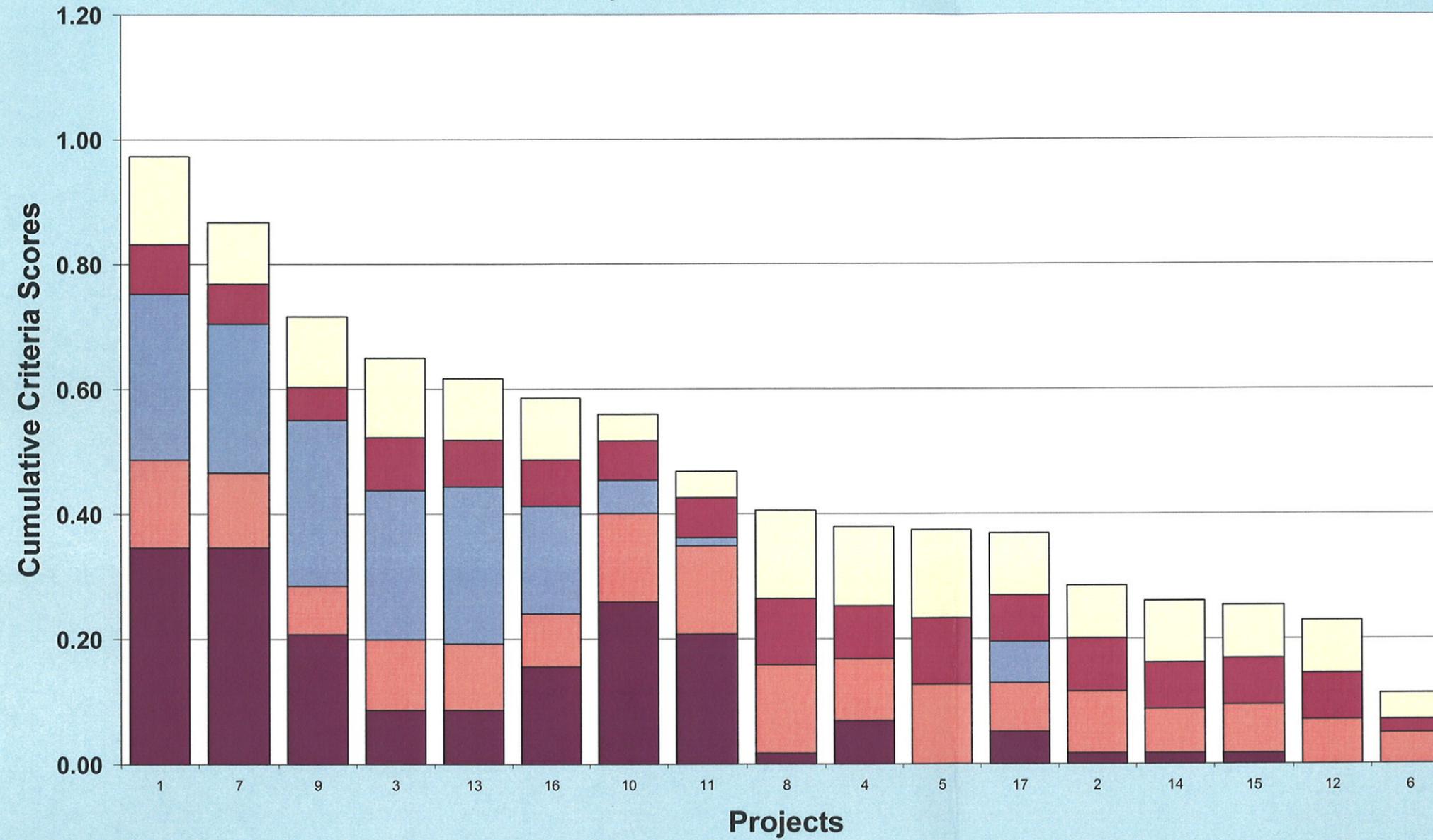
Criteria No.	Evaluation Criteria	Criteria Weight (0 - 100 Scale)	Criteria Description
1	Public Health & Safety (Flood Protection)	98.0	To what degree does the BMP reduce flooding and protect health & safety
2	Water Quality - Volume	40.0	Does the project reduce the volume of runoff through recharge and evapotranspiration
3	Water Quality - Channel Erosion	75.0	Does the Project Control Erosion and reduce solids from eroded streambanks
4	Public Amenity	30.0	Does the Project provide a public amenity and augment Township Landuse Plans
5	Constructibility	40.0	How easy is it to build the BMP ?

Project Number	Project Title	Capital & O&M NPW	Project Description <b>(Please limit project description to the following width)</b>	Special	Special Weight
				High	1.30
1	1	\$3,000	Old State Road (Homeowner Retrofits)	Normal	1.00
2	2A	\$263,000	Teegarden Park (Online)	Normal	1.00
3	2B	\$263,000	Teegarden Park (Offline)	Normal	1.00
4	2C	\$263,000	Teegarden Park (Div)	High	1.00
5	3	\$28,000	Gateway Mall Bioretention Demo	Normal	1.30
6	4	\$354,000	Richards Road Culvert Re-design	Normal	1.00
7	5	\$887,792.07	Devon Park Drive Open Area	High	1.00
8	6	\$132,237.84	Devon Park Drive Streetscape	Normal	1.30
9	7	\$1,306,662.02	S.R. 202 Interchange	Normal	1.00
10	8A	\$1,900,081.37	Richter Property (Config A)	Normal	1.00
11	8B	\$2,280,431.37	Richter Property (Config B)	Normal	1.00
12	9A	\$184,005.11	Devon Park Dr. (Avonwood) (Online)	Normal	1.00
13	9B	\$184,005.11	Devon Park Dr. (Avonwood) (Offline)	Normal	1.00
14	9C	\$184,005.11	Devon Park Dr. (Avonwood) (Div)	Normal	1.00
15	10A	\$338,716.86	Devon Park Dr. (Weadley) (Online)	Normal	1.00
16	10B	\$338,716.86	Devon Park Dr. (Weadley) (Offline)		1.00
17	10C	\$338,716.86	Devon Park Dr. (Weadley) (Div)		1.00

<b>Project Number</b>	<b>Project Title</b>	<b>Capital &amp; O&amp;M NPW</b>	<b>Total Benefit from Calculation Worksheet</b>	<b>Benefit-Cost Score</b>
1	1	3,000.00	97.34	32,446.67
5	3	28,000.00	37.45	1,337.39
13	9B	184,005.11	61.74	335.54
8	6	132,237.84	40.59	306.96
3	2B	263,000.00	65.01	247.18
16	10B	338,716.86	58.60	173.00
4	2C	263,000.00	38.01	144.54
14	9C	184,005.11	26.11	141.88
12	9A	184,005.11	22.96	124.80
17	10C	338,716.86	36.90	108.95
2	2A	263,000.00	28.58	108.67
7	5	887,792.07	86.74	97.70
15	10A	338,716.86	25.40	74.99
9	7	1,306,662.02	71.65	54.84
6	4	354,000.00	11.30	31.93
10	8A	1,900,081.37	56.00	29.47
11	8B	2,280,431.37	46.83	20.54

<b>Project Number</b>	<b>Project Title</b>	<b>Project Name</b>	<b>Public Health &amp; Safety (Flood Protection)</b>	<b>Water Quality - Volume</b>	<b>Water Quality - Channel Erosion</b>	<b>Public Amenity</b>	<b>Constructibility</b>
1	1	Ordinance	10.0	10.0	10.0	6.0	10.0
2	2A	Teegarden Park (Online)	0.9	7.4	0.0	8.0	6.0
3	2B	Teegarden Park (Offline)	2.5	8.3	9.2	8.0	9.0
4	2C	Teegarden Park (Div)	2.0	7.4	0.0	8.0	9.0
5	3	Gateway Mall Bioretention Demo	0.0	7.2	0.0	9.0	8.0
6	4	Richards Road Culvert Re-design	0.0	4.0	0.0	2.0	3.0
7	5	Devon Park Drive Open Area	10.0	9.0	9.2	6.0	7.0
8	6	Devon Park Drive Streetscape	0.5	8.6	0.0	9.0	10.0
9	7	S.R. 202 Interchange	6.4	5.5	10.0	5.0	8.0
10	8A	Richter Property (Config A)	7.7	10.0	2.5	6.0	3.0
11	8B	Richter Property (Config B)	6.3	10.0	0.7	6.0	3.0
12	9A	Devon Park Dr. (Avonwood) (Online)	0.3	5.2	0.0	7.0	6.0
13	9B	Devon Park Dr. (Avonwood) (Offline)	2.9	7.8	9.7	7.0	7.0
14	9C	Devon Park Dr. (Avonwood) (Div)	0.9	5.2	0.0	7.0	7.0
15	10A	Devon Park Dr. (Weadley) (Online)	0.8	5.7	0.0	7.0	6.0
16	10B	Devon Park Dr. (Weadley) (Offline)	4.9	6.2	6.7	7.0	7.0
17	10C	Devon Park Dr. (Weadley) (Div)	1.9	5.7	2.7	7.0	7.0

**Chart 1: Capital Prioritization Ranking of Alternatives  
by Total Benefit Value**



### Trout Creek Sensitivity Analysis

- Higher Differentiation in Criteria Weights
- Emphasize Flooding
- No Special Weighting Criteria for Small, Site-Level Projects

Criteria No.	Evaluation Criteria	Criteria Weight (0 - 100 Scale)	Criteria Description
1	Public Health & Safety (Flood Protection)	98.0	To what degree does the BMP reduce flooding and protect health & safety
2	Water Quality - Volume	40.0	Does the project reduce the volume of runoff through recharge and evapotranspiration
3	Water Quality - Channel Erosion	75.0	Does the Project Control Erosion and reduce solids from eroded streambanks
4	Public Amenity	30.0	Does the Project provide a public amenity and augment Township Landuse Plans
5	Constructibility	40.0	How easy is it to build the BMP ?

Project Number	Project Title	Capital & O&M NPW	Project Description <b>(Please limit project description to the following width)</b>	Special	Special Weight
				Normal	1.00
1	1	\$3,000	Old State Road (Homeowner Retrofits)	Normal	1.00
2	2A	\$263,000	Teegarden Park (Online)	Normal	1.00
3	2B	\$263,000	Teegarden Park (Offline)	Normal	1.00
4	2C	\$263,000	Teegarden Park (Div)	Normal	1.00
5	3	\$28,000	Gateway Mall Bioretention Demo	Normal	1.00
6	4	\$354,000	Richards Road Culvert Re-design	Normal	1.00
7	5	\$887,792.07	Devon Park Drive Open Area	Normal	1.00
8	6	\$132,237.84	Devon Park Drive Streetscape	Normal	1.00
9	7	\$1,306,662.02	S.R. 202 Interchange	Normal	1.00
10	8A	\$1,900,081.37	Richter Property (Config A)	Normal	1.00
11	8B	\$2,280,431.37	Richter Property (Config B)	Normal	1.00
12	9A	\$184,005.11	Devon Park Dr. (Avonwood) (Online)	Normal	1.00
13	9B	\$184,005.11	Devon Park Dr. (Avonwood) (Offline)	Normal	1.00
14	9C	\$184,005.11	Devon Park Dr. (Avonwood) (Div)	Normal	1.00
15	10A	\$338,716.86	Devon Park Dr. (Weadley) (Online)	Normal	1.00
16	10B	\$338,716.86	Devon Park Dr. (Weadley) (Offline)		1.00
17	10C	\$338,716.86	Devon Park Dr. (Weadley) (Div)		1.00

<b>Project Number</b>	<b>Project Title</b>	<b>Capital &amp; O&amp;M NPW</b>	<b>Total Benefit from Calculation Worksheet</b>	<b>Benefit-Cost Score</b>
1	1	3,000.00	95.75	31,916.67
5	3	28,000.00	30.74	1,097.68
13	9B	184,005.11	61.74	335.54
8	6	132,237.84	37.41	282.91
3	2B	263,000.00	65.01	247.18
16	10B	338,716.86	58.60	173.00
4	2C	263,000.00	38.01	144.54
14	9C	184,005.11	26.11	141.88
12	9A	184,005.11	22.96	124.80
17	10C	338,716.86	36.90	108.95
2	2A	263,000.00	28.58	108.67
7	5	887,792.07	86.74	97.70
15	10A	338,716.86	25.40	74.99
9	7	1,306,662.02	71.65	54.84
6	4	354,000.00	11.30	31.93
10	8A	1,900,081.37	56.00	29.47
11	8B	2,280,431.37	46.83	20.54

Project Number	Project Title	Project Name	Public Health & Safety (Flood Protection)	Water Quality - Volume	Water Quality - Channel Erosion	Public Amenity	Constructibility
1	1	Ordinance	10.0	10.0	10.0	6.0	10.0
2	2A	Teegarden Park (Online)	0.9	7.4	0.0	8.0	6.0
3	2B	Teegarden Park (Offline)	2.5	8.3	9.2	8.0	9.0
4	2C	Teegarden Park (Div)	2.0	7.4	0.0	8.0	9.0
5	3	Gateway Mall Bioretention Demo	0.0	7.2	0.0	9.0	8.0
6	4	Richards Road Culvert Re-design	0.0	4.0	0.0	2.0	3.0
7	5	Devon Park Drive Open Area	10.0	9.0	9.2	6.0	7.0
8	6	Devon Park Drive Streetscape	0.5	8.6	0.0	9.0	10.0
9	7	S.R. 202 Interchange	6.4	5.5	10.0	5.0	8.0
10	8A	Richter Property (Config A)	7.7	10.0	2.5	6.0	3.0
11	8B	Richter Property (Config B)	6.3	10.0	0.7	6.0	3.0
12	9A	Devon Park Dr. (Avonwood) (Online)	0.3	5.2	0.0	7.0	6.0
13	9B	Devon Park Dr. (Avonwood) (Offline)	2.9	7.8	9.7	7.0	7.0
14	9C	Devon Park Dr. (Avonwood) (Div)	0.9	5.2	0.0	7.0	7.0
15	10A	Devon Park Dr. (Weadley) (Online)	0.8	5.7	0.0	7.0	6.0
16	10B	Devon Park Dr. (Weadley) (Offline)	4.9	6.2	6.7	7.0	7.0
17	10C	Devon Park Dr. (Weadley) (Div)	1.9	5.7	2.7	7.0	7.0

**Chart 1: Capital Prioritization Ranking of Alternatives  
by Total Benefit Value**

