

## A COMPARISON OF SUSTAINABLE AND TRADITIONAL LANDSCAPES

### SUMMARY COMPARISON OF SUSTAINABLE AND TRADITIONAL LANDSCAPES

The following comparison is based on the landscape features required for a 10 acre corporate landscape, excluding site amenities such as hardscapes and augmented aesthetic programs. All costs are provided in 1999 U.S. dollars, based upon estimated values determined by Conservation Design Forum, Inc., 324 N. York, Elmhurst, IL 60137. A detailed break down of costs for the initial installation and on-going maintenance of traditional and sustainable (native) landscapes is provided in the following pages.

Activity/Year	Sustainable Landscape (Annual Cost)	Traditional Landscape (Annual Cost)	% of Difference Sustainable/Traditional
<b>Up Front Installations</b>			
Traditional landscape require a wider spectrum of landscape treatments, so their up front investment is necessarily greater than that for a new native landscape.			
Design	\$25,000	\$25,000	0%
Construction	\$100,000	\$216,000	52%
Post-Planting Management	\$16,000	\$28,000	43%
<b>Total Up-Front Costs</b>	<b>\$141,000</b>	<b>\$269,000</b>	<b>48%</b>
<b>Annual Long-term Management</b>			
In a new native landscape, the first 4-5 years are fairly intensive inasmuch as a balance is being established between the native and non-native plants. After approximately 5 years the system begins to set into its own internal self-renewing capacities, needing only the addition of increased species richness in areas where annual monitoring dictates.			
In a traditional landscape, the frequency and intensity of mowing, sod-maintenance, weeding, and early plant replacement initially keeps costs in the same general area as the new native landscape. After about 5 years, the stresses of herbicide application, shrub and tree mortality, and other aging syndromes of a landscape that does not renew itself results in a greater maintenance costs than for sustainable landscapes.			
Year 1	\$19,000	\$33,000	42%
Year 2	\$32,000	\$33,000	3%
Year 3	\$17,000	\$33,000	49%
Year 4	\$30,000	\$33,000	9%
Year 5	\$15,000	\$33,000	55%
Year 6	\$13,000	\$30,000	43%
Year 7	\$5,000	\$30,000	83%
Year 8	\$13,000	\$30,000	43%
Year 9	\$5,000	\$30,000	83%
Year 10	\$13,000	\$30,000	43%
<b>Ten-year Totals</b>	<b>\$162,000</b>	<b>\$315,000</b>	<b>52%</b>
Year 11+	\$5,450	\$40,000	86%
<b>Subsequent Years</b>	<b>\$5,450</b>	<b>\$30,000</b>	<b>82%</b>

## DETAILED COST BREAKDOWN - NATIVE LANDSCAPE

The native landscape installation and maintenance is, over the long-run, less expensive than the traditional (contemporary) idiom, because built into the native landscape is the native diversity that enables seasonal renewal and expansion by seed and rhizome, which is essentially an internal repair system; it is “alive” in that sense. As the initial implementation and enrichment programs phase out, the only significant management expense is annual burning, which sometime can be obviated by on-site staff. Another important aspect is that the site need not be graded, as it is usually better if it is not. Nor is it necessary to deploy subsurface drainage features such as catchments and piping. The most significant “downside” of the native landscape is that it cannot achieve the “instant look” which is characteristic of a newly installed, traditional landscape.

## Up Front Installation

Hours	Cost	Sub-consultant Fees	Subtotals	Service
<b>DESIGN</b>				
64	\$110/hr.		\$7,040	CONCEPTUAL DESIGN: Preliminary engineering of soils, grading, and hydrology. Prepare preliminary planting and seeding list and preliminary construction documents.
72	\$110/hr.		\$7,920	FINAL DESIGN: Scaled planting plan, various plant community list, set of technical specification for planting and installation, description of general performance standards for the first 2 growing seasons, and a review of probable construction and management costs.
50	\$85/hr.		\$4,250	RESTORATION MANAGEMENT & MONITORING PLAN: Create a document that will serve as the framework for future management of the native landscape. This may include creating bid documents for outside contractor procurement.
65	\$85/hr.		\$5,525	CONSTRUCTION ADMINISTRATION: Review contractor bids, oversee the physical installation components of the job, including proper bid preparation, planting and seeding, and post-planting care.
TOTAL DESIGN COST			\$24,735	
<b>CONSTRUCTION</b>				
			\$10,000	Soil Prep- deep rip, disc, ect.*
10	\$2,500/a.	\$6,250	\$31,250	Planting Seed
5000	\$3/plant	\$3,750	\$18,750	Planting Plugs/Enhancement
6250	\$3/lin.ft.	\$3,906	\$19,530	Install Erosion Control
70	\$325/2” tree	\$6,094	\$30,470	Tree Planting (incl. 15% warranty)
Total Construction Cost			\$100,000	
POST-PLANTING MANAGEMENT: Monitoring for proper watering, determining weather conditions conducive to germination, mowing, or hand weed control, and determining a schedule for prescribed burns.				
144	\$65/hr.	\$2,340	\$11,700	Site supervision
60	\$25/hr.	\$375	\$1,875	Contracting/watering
10	\$85/hr.		\$850	Mowing and Hand-weeding
TOTAL POST-PLANTING MANAGEMENT			\$16,125	
TOTAL UP FRONT INSTALLATION COST			\$140,860	

\* this technique should also be used in a traditional landscape

Annual Long-Term Management: Establishment Stewardship (Yrs 1-5)

The first five full growing seasons after installation are crucial to the establishment of the native landscape. Since the plated species are intended to reproduce and fend for themselves in a habitat design to suit them, there are several early consideration. The battle for water and sunlight with spontaneously occurring weeds is an important one; the introduction of a suitable diversity of species is another, and the fitting of suites of species to the landscape vagaries is yet another. All the while, the landscape must look planned and cared for. Responding properly to these concerns requires close monitoring and attention to early developments so that suitable management is prescribed and administered. Flexibility and the knowledge to react are the key elements.

Hours	Cost	Sub-consultant Fees	Subtotals	Service
<b>YEAR 1, FIRST YEAR FOLLOWING INSTALLATION</b>				
50	\$110/hr.	n/a	\$5,500	MONITORING OF DEVELOPING FLORISTICS: Transect establishment and analysis of the extent to which key elements are becoming established. Done in late summer or fall.
10	\$85/hr.		\$850	Burn Permit
10	\$375/a.	\$938	\$4,688	Prescribed Burn
72	\$25/hr.	\$450	\$2,250	Maintain Erosion Control
80	\$25/hr.	\$500	\$2,500	Hand Weeding & Mowing
35	\$85/hr.	n/a	\$2,975	Stewardship/Owner-client Contact
TOTAL, YEAR 1			\$18,763	
<b>YEAR 2</b>				
50	\$110/hr.	n/a	\$5,500	Monitoring of Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	\$938	\$4,688	Prescribed Burn
80	\$25/hr.	\$500	\$2,500	Hand Weeding & Mowing
10	\$1,200/a..	\$3,000	\$15,000	Enhancement Seeding & Plugging
35	\$85/hr.	n/a	\$2,975	Stewardship/Owner-client Contact
TOTAL, YEAR 2			\$31,513	
<b>YEAR 3</b>				
50	\$110/hr.	n/a	\$5,500	Monitoring of Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
00	\$375/a.	\$938	\$4,688	Prescribed Burn
80	\$25/hr.	\$500	\$2,500	Hand Weeding & Mowing
35	\$85/hr.	n/a	\$2,975	Stewardship/Owner-client Contact
TOTAL, YEAR 3			\$16,513	
<b>YEAR 4</b>				
50	\$110/hr.	n/a	\$5,500	Monitoring of Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	\$938	\$4,688	Prescribed Burn

Sustainable Landscape Planning

Hours	Cost	Sub-consultant Fees	Subtotals	Service
80	\$25/hr.	\$500	\$2,000	Hand Weeding & Mowing
10	\$1,200/a.	\$3,500	\$15,000	Enhancement Seeding & Planting
28	\$85/hr.	n/a	\$2,380	Stewardship/Owner-client Contact
TOTAL, YEAR 4			\$30,418	
YEAR 5				
50	\$110/hr.	n/a	\$5,500	Monitoring of developing floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	\$938	\$4,688	Prescribed Burn
80	\$25/hr.	\$500	\$1,875	Hand Weeding & Mowing
26	\$85/hr.	n/a	\$2,231	Stewardship/Owner-client Contact
TOTAL, YEAR 5			\$15,144	
TOTAL ESTABLISHMENT STEWARDSHIP			\$112,351	

Annual Long-term Management: :Long-Term Maintenance Stewardship (Yrs 6-10)

After the five-year establishment period, the development of native landscapes should be well underway, with monitoring and controlled burns being the principle expenses. There will still be a need for some species enhancement and client contact.

Hours	Cost	Sub-consultant Fees	Subtotals	Service
YEAR 6				
50	\$110/hr.	n/a	\$5,500	Monitoring of Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
5	\$450/a.	n/a	\$2,250	Enhancement Seeding and Plugging
10	\$85/hr.	n/a	\$850	Stewardship/Owner client Contact
TOTAL, YEAR 6			\$13,200	
YEAR 7				
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
10	\$85/hr.	n/a	\$850	Stewardship/Owner-client Contact
TOTAL, YEAR 7				
YEAR 8				
50	\$110/hr.	n/a	\$5,500	Monitoring of Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
5	\$450/a.	n/a	\$2,250	Enhancement Seeding and Plugging
10	\$85/hr.	n/a	\$850	Stewardship/Owner-client Contact

Sustainable Landscape Planning

Hours	Cost	Sub-consultant Fees	Subtotals	Service
TOTAL, YEAR 8			\$13,200	
YEAR 9				
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
10	\$85/hr.	n/a	\$850	Stewardship/Owner client Contact
TOTAL, YEAR 9				
YEAR 10				
50	\$110/hr.	n/a	\$5,500	Monitoring and Developing Floristics
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
5	\$450/a.	n/a	\$2,250	Enhancement Seeding & Plugging
10	\$85/hr.	n/a	\$850	Stewardship/Owner-client Contact
TOTAL, YEAR 10			\$13,200	
TOTAL LONG-TERM STEWARDSHIP			\$50,500	

Annual Long-term Management: Maintenance Stewardship (Yrs 11+)

Hours	Cost	Sub-consultant Fees	Subtotals	Service
MAINTENANCE STEWARDSHIP, YRS 11+				
10	\$85/hr.	n/a	\$850	Burn Permit
10	\$375/a.	n/a	\$3,750	Prescribed Burn
10	\$85/hr.	n/a	\$850	Stewardship/Owner client Contact
TOTAL MAINTENANCE STEWARDSHIP			\$5,450	

Sustainable Landscape Planning

DETAILED COST BREAKDOWN- TRADITIONAL LANDSCAPE

A traditional landscape is characterized by drifts of shrub plantings, manicured lawns, and attempts to plant and maintain fairly large trees. Since none of these elements reproduce or spread, they must be replaced when they wear out. Such landscapes require perennial inputs of significant resources to sustain them.

Up Front Installation

Hours	Cost	Sub-consultant Fees	Subtotals	Service
<b>DESIGN</b>				
64	\$110/hr.	n/a	\$7,040	CONCEPTUAL DESIGN: Prepare preliminary planting and plant turf treatments, including perspective drawings and preliminary construction documents.
84	\$110/hr.	n/a	\$9,240	FINAL DESIGN: Scaled planting plan, technical specification for planting and installation, description of landscape components, including subsurface drainage grades, berms, and irrigation.
40	\$85/hr.	n/a	\$3,400	BID DOCUMENTS: Create document to be used by the general contractor to implement the plan. Bid administration could be a sub-function of this.
65	\$85/hr.	n/a	\$5,525	CONSTRUCTION ADMINISTRATION: Review contractor bids, oversee the physical installation components, including proper bed preparation, planting and seeding, and post-planting care.
<b>TOTAL DESIGN COST</b>			<b>\$25,205</b>	
<b>CONSTRUCTION: Planting Turf</b>				
24200	\$1.25/sq. yd	n/a	\$30,250	5 acres of bluegrass seed
14520	\$2.50/sq. yd	n/a	\$36,300	3 acres of bluegrass sod
150	\$350/ tree	n/a	\$52,500	Plant 150 2-inch trees (incl. 15% warranty)
325	\$40/ shrub	n/a	\$13,000	Shrub Planting (incl. 15% warranty)
500	\$8/ plant	n/a	\$4,000	Herbaceous perennials
5000	\$0.50/sq. yd	n/a	\$2,500	Soil prep of perennial beds
350	\$40/cu.yd	n/a	\$14,000	Mulch
1000	\$20/lin.ft	n/a	\$20,000	Storm drains
5000	\$2/cu. yd	n/a	\$20,000	Fine grade 2% slope
40	\$85/hr.	n/a	\$3,400	Surveying
25	\$1,200/zone	n/a	\$30,000	Irrigation components
<b>TOTAL CONSTRUCTION COST</b>			<b>\$215,950</b>	
<b>POST-PLANTING MANAGEMENT: There is usually a one-year warranty period requiring the installation contractor to care for the plants until final approval one year later.</b>				
250	\$65/hr.	n/a	\$16,250	Follow up watering
10	\$250/a.	n/a	\$2,500	Fertilizer
10	\$900/a.	n/a	\$9,000	Mowing/Weeding/Cultivating
<b>TOTAL POST-PLANTING MANAGEMENT</b>			<b>\$27,750</b>	
<b>TOTAL UP-FRONT INSTALLATION COST</b>			<b>\$268,905</b>	

Sustainable Landscape Planning

Annual Long-Term Management: Landscape Maintenance (Yrs 1-5)

The second year after installation a fairly routine annual maintenance begins, one that accommodates the full development of a newly installed suite of planted elements.

Hours	Cost	Sub-consultant Fees	Subtotals	Service
ANNUAL MAINTENANCE				
46	\$45/ Cu.yd	n/a	\$2,070	Perennial bed amendments
70	\$40/ Cu.yd	n/a	\$2,800	Mulch replacement (biennially)
10	\$1,100/a.	n/a	\$11,000	Mowing/Weeding/Cultivating/Fertilizer
1000	\$2.50/ Sq.yd	n/a	\$2,500	Turf Replacement
32	\$40/ shrub	n/a	\$1,280	Shrub Replacement (@10% yr)
10	\$350/ tree	n/a	\$3,500	Tree replacement (@7%/ yr)
1000	\$2.45/ Sq.ft	n/a	\$2,450	Adding annual flowers
25	\$50/zone	n/a	\$1,250	Irrigation system maintenance
100	\$65/hr.	n/a	\$6,500	Watering
TOTAL ANNUAL MAINTENANCE			\$33,350	

Annual Long-Term Management: Landscape Maintenance (Yrs 6-10)

About 6 years after installation the landscape begins to require an accelerated effort of repair on aging systems, along with routine landscape maintenance.

Hours	Cost	Sub-consultant Fees	Subtotals	Service
ANNUAL MAINTENANCE				
23	\$45/ Cu.yd	n/a	\$1,035	Perennial bed amendments (biennially)
35	\$40/ Cu.yd	n/a	\$1,400	Mulch replacements (biennially)
10	\$1,100/a.	n/a	\$11,000	Mowing/Weeding/Cultivating/Fertilizer
1500	\$2.50/ Sq.yd	n/a	\$3,750	Turf Replacement
32	\$40/shrub	n/a	\$1,280	Shrub replacement (@10% yr.)
2	\$350/tree	n/a	\$700	Tree replacement (@3%/ yr.)
1200	42.45/ Sq.ft	n/a	\$2,940	Adding annual flowers
25	\$50/zone	n/a	\$1,250	Irrigation system maintenance
100	\$65/hr.	n/a	\$6,500	Watering
TOTAL ANNUAL MAINTENANCE			\$29,855	

Annual Long-Term Management: Landscape Maintenance (yrs 11+)

As a traditional landscape ages, the replacement components are directed by aging design elements, along with some plants reaching the end of their life span in an urban environment. To accommodate these revisions and replacements, we expect a budget of 20% of the initial construction (\$40,000) cost to renew these elements. Thereafter the maintenance costs approximate those listed above.