



Request for Proposals

IGS Sustainability Committee

Date: 19 July 2022

The [International Geosynthetic Society](https://www.geosyntheticssociety.org/) Sustainability Committee would like to offer the following request for proposal. Please respond with a submission to the IGS Secretariat – Elise Oatman (IGSsec@GeosyntheticSociety.org). Submissions must be supplied no later than 30 September 2022 to receive full consideration.

Geosynthetics offer many advantages to constructions, across multiple markets, and applications including, but not limited to environmental containment, road, bridge, retaining structures, transportation infrastructure, water storage and conveyance, mining, erosion protection and control, and several others. These benefits are economic, environmental, and sustainable. The latter are multifaceted, inclusive of carbon dioxide emission reduction, reductions in energy consumption and water usage, improvements in lifespan and durability, improvements in constructability (project speed, reduction of transportation volume and costs), and other benefits. The goal of this project is to develop a user-friendly software package and website/page format that achieves the following goals:

- Presents these benefits in an organized fashion
- Offers numerical calculations and estimates of the quantity/value of the benefits of geosynthetics to the environment and sustainability, such as, comparing the carbon footprint of older construction methods and materials with a similar modern constructions utilizing geosynthetics
- Allows user-controlled modification of assumptions and variables in the calculations
- Addresses the benefits via multiple evaluation schemes (CO₂, energy consumed, etc.)
- Complete the evaluations and comparisons in the format of "cradle to cradle" as is possible.
- The calculation methods, and any numerical values used therein, should be transparently documented with open published references provided

The target audience for use of this product are design engineers, site owners, regulators, governmental officials, general contractors, and the general public. The IGS may use this product to augment IGS training courses, lectures and other educational programs.

Examples of existing content from industry participants are supplied in the webpage linked here: <https://www.geosynthetica.com/geosynthetic-design-software-calculator-tools/>. The requested proposal is for software somewhat different in focus, specifically less product specific/commercial and more focused on identifying demonstrating and measuring generic environmental and sustainability benefits. An industry example of a carbon calculator(s) is linked here: <https://www.abg-geosynthetics.com/technical/carbon-footprint-reduction/>. Background information can also be found on the society's sustainability webpage linked here: <https://www.geosyntheticssociety.org/sustainability/>

Submissions shall include an outline of the work proposed, schedules detailing when and where this work will occur, a list of the deliverables/outcomes of the work product, when and how will these deliverables will be tracked and reported, and pricing. It is expected that this work will be completed in segments, which should be identified in the proposal. Note that the IGS reserves the right to accept or reject any proposal in part or in whole. The IGS also reserves the right to award the project to one of more proposers.

Questions and requests for clarifications can be addressed to the Sustainability committee chairs – Preston Kendall (preston.m.kendall@gmail.com) or Boyd Ramsey (Boyd@BoydRamseyConsulting.com).

Appendix A: Listing of materials and applications:

Type of Geosynthetic (GS)	Primary Function				
	Separation	Reinforcement	Filtration	Drainage	Containment
Geotextile (GT)	√	√	√	√	
Geogrid (GG)		√			
Geonet (GN)				√	
Geomembrane (GM)					√
Geosynthetic Clay Liner (GCL)					√
Geofoam (GF)	√				
Geocomposite (GC)	√	√	√	√	√

From "Designing with Geosynthetics", 6th ed.