



SkylineGlobe Web Package

Version 6.5

Datasheet

www.SkylineGlobe.com

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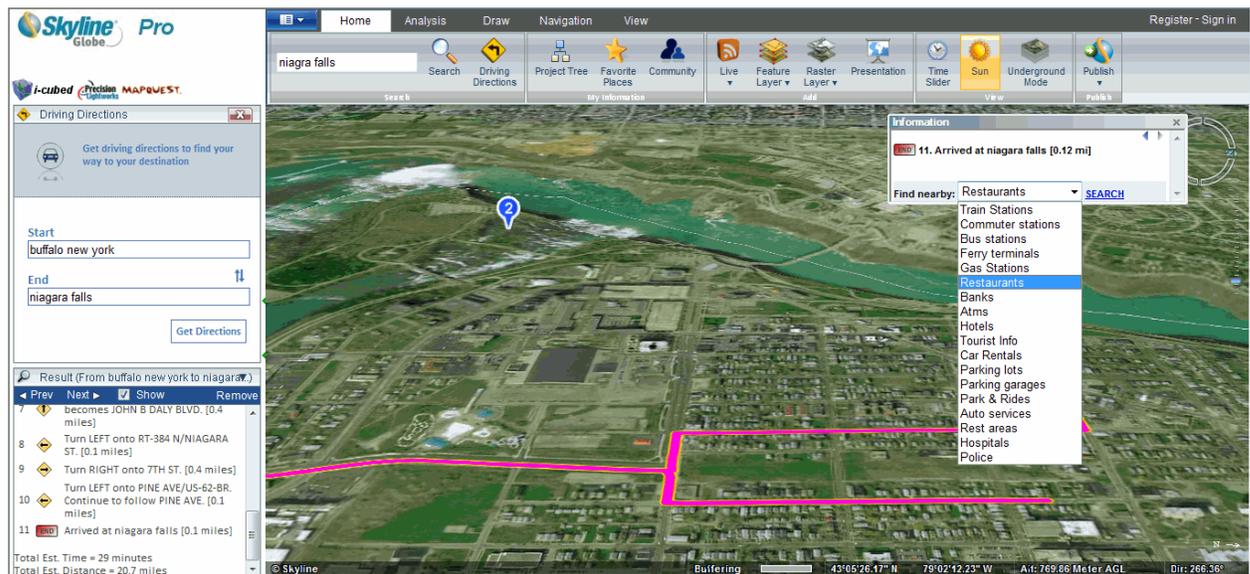
Overview

SkylineGlobe Web Package (SGWP) is a complete out-of-the-box web application for publishing interactive 2D and 3D geospatial environments that increase understanding and improve decision making. Your website users can navigate through an intuitive, virtual environment, viewing, analyzing, and annotating data in its geographical context. With a powerful community tool and online publishing capability, SGWP promotes project collaboration and data sharing. Other robust capabilities include extensive raster and feature layer support, powerful drawing tools, advanced analysis tools, and search functionality.

Using the SGWP's Manager interface, you can customize your application to your organization's needs, from the included data layers to the application tools and commands. If your application is intended for multiple target audiences (e.g. groups of interest or different user privileges), you can easily create **customized subsites**, so that each group sees only the data and tools that are relevant or of interest to it.

SkylineGlobe Web Package Main Components

- ◆ [SkylineGlobe 3D Web Application](#) - 3D web application with an extensive set of tools and capabilities.
 - [Advanced Capabilities](#) - Additional features are available for web users with a TerraExplorer Pro or Plus license
- ◆ [SkylineGlobe 2D Web Application](#) - 2D web application in which users can navigate, search, and edit customized 2D maps.
 - [2D Mobile Web Application](#) - 2D web application that provides mobile access to your 2D maps.
- ◆ **Management & Customization**
 - [SkylineGlobe Website Administration](#) - A back-end, web-based application, that enables you to easily manage and customize your application.
 - [API Development](#) - API extensions for the development of customized SkylineGlobe web tools.



SkylineGlobe Web Application

3D Web Application

SkylineGlobe 3D Web Application enables website users to navigate, analyze, and annotate high resolution 3D landscapes produced by fusing aerial and satellite photography, terrain elevation data and other 2D and 3D information layers created with the SkylineGlobe products.

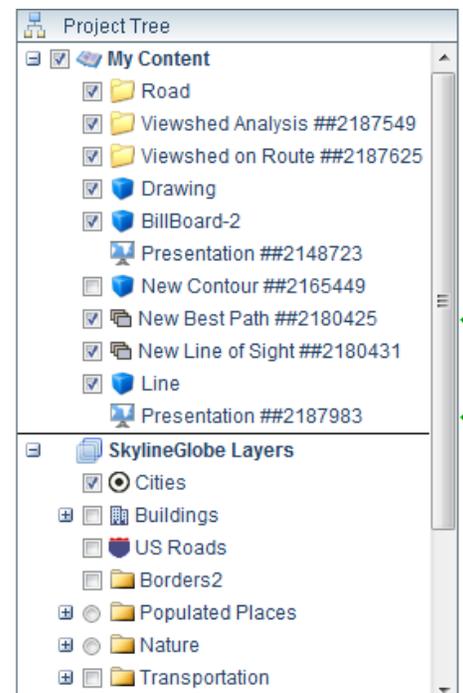
Users can overlay the terrain with basic objects, imagery layers and feature layers (in .fly, .shp, or .kml/.kmz formats), as well as analyze the terrain using a robust set of measurement and terrain analysis tools. Users who want to present their 3D project to others can even create a multi-step presentation that combines a customized flight route with a particular display of the project.

The 3D Web Application's main features include:

- ◆ Customizable user interface
- ◆ Multiple, intuitive means of navigation
- ◆ Project Tree that provides a single access point for all SkylineGlobe layers and objects and user content
- ◆ Address/Location search tool with option to integrate turn-by-turn routing services
- ◆ Interactive drawing tools to overlay terrain with basic 2D and 3D objects
- ◆ Powerful measurement and terrain analysis tools including Terrain Area, Line of Sight, Viewshed, 3D Viewshed, Viewshed Query, Threat Dome, Flood Analysis, Volume Analysis, Slope Map, Contour Map, Imagery Comparison, and Snapshot Comparison
- ◆ Feature layer support
- ◆ 3D mesh layer (3DML) support
- ◆ Communities tool connecting Skyline users on one collaborative network
- ◆ Online publishing capability enabling all projects and project data to be freely shared with all or specific users in one's organization
- ◆ Favorites and live feed tools
- ◆ Presentation tool for creating a multi-step presentation that combines a customized flight route with a particular display of the project
- ◆ Localization capabilities enabling you to easily translate the SkylineGlobe Web application to your native language.

Project Tree

The SkylineGlobe Project Tree provides a single access point for all SkylineGlobe layers and objects and user content so you can easily find, modify, or activate any element you need. The Tree is split into two sections: **My Content** containing all project content created or imported by the user and **SkylineGlobe Layers** containing a set of feature and raster layers as defined by the SkylineGlobe Manager.



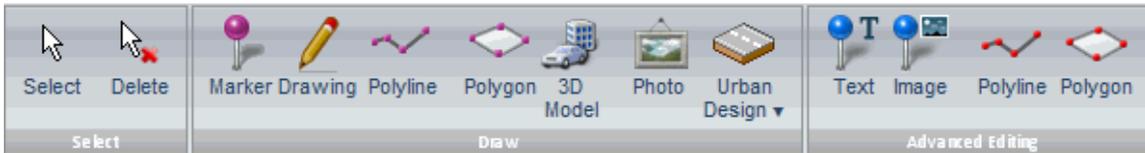
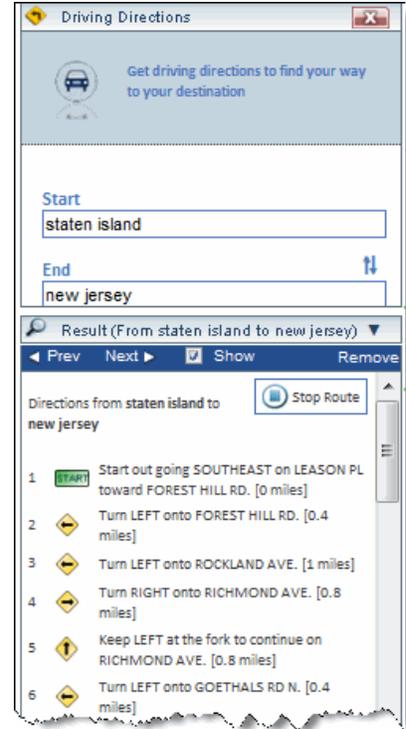
My Content project elements can be reordered and organized into groups by dragging and dropping elements. Shortcut menus available for each project tree element make it easy to edit, delete, or fly/jump to any element.

Search Function

The application's search function can be based on the Web Package's included gazetteer or customized to connect to the organization's own search engines. The search capability can be further enhanced by integrating turn-by-turn routing services into the application so users can get directions from any starting point to any end point.

Draw Tool

The 3D Web Application provides a set of basic objects, including markers, freehand lines, urban designs, and 3D models, that can be added to the project. The user can move the objects in the 3D window, and edit basic properties in their property sheets. Polylines and polygons can be inserted in a project, either as basic objects with limited editing options, or as advanced objects with comprehensive property sheets and extensive editing capabilities. The objects are organized in the My Content section of the Project Tree.



Draw Tab

Measurement and Analysis Tools



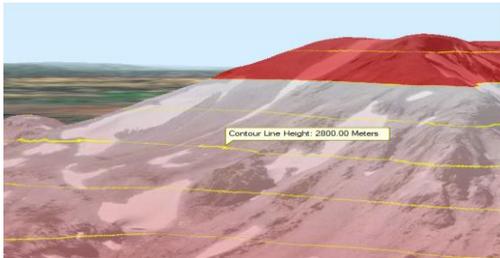
Analysis Tab

The 3D Web Application provides a robust set of tools for measurement and terrain analysis.

Measurement Tools

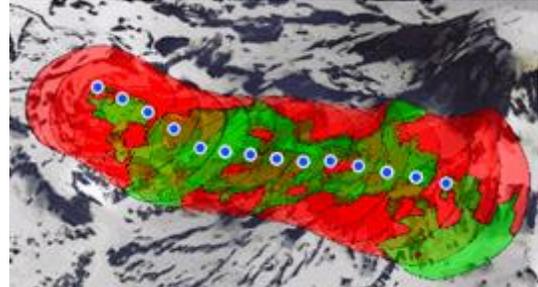
- ◆ **Horizontal Distance:** Measures the horizontal distance, elevation difference and slope angle between two or more points in the 3D View.
- ◆ **Aerial Distance:** Measures the aerial distance, elevation difference and slope angle between two or more points in the 3D View.
- ◆ **Vertical Difference:** Measures the elevation difference between two points in the 3D View.
- ◆ **Terrain Area:** Measures the horizontal projection or the terrain surface of an area in the 3D View.
- ◆ **3D Plane Area:** Measures the area of a polygon on an arbitrary plane.

Terrain Analysis Tools



- ◆ **Contour Map:** Creates a topographic map that portrays differences in terrain elevation by connecting points of equal elevation with contour lines or by coloring terrain according to varying altitudes. The contour palettes and/or contour lines can be applied to a specified rectangular area, or to the entire terrain.
- ◆ **Slope Map:** Creates a slope map on the terrain that can show degree (steepness) and/or aspect (direction). The terrain is colored according to degree of slope, and arrows display the direction of the slope. The color map and arrows can be applied to a specified rectangular area or to the entire terrain.
- ◆ **Slope Query:** Displays information about a selected location including: its coordinates, altitude, and maximum positive/maximum negative slope values in a specified radius around the selected point.
- ◆ **Flood:** Assesses the land area covered by water in different water flooding scenarios. The result of the flood analysis process is a set of polygons showing the flooded areas.

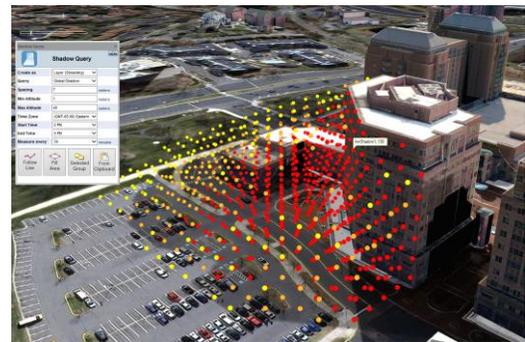
- ◆ **Volume Analysis:** Analyzes the amount of terrain removed or added by selected Modify Terrain objects.
- ◆ **Terrain Profile:** Displays the terrain elevation profile along a path.
- ◆ **Best Path Tool:** Displays the best path between two locations on the terrain with slope limits.
- ◆ **Line of Sight Analysis Tool:** Displays a visual marker for the existence of a line of sight between two points.



- ◆ **3D Viewshed Analysis Tool:** Provides you with a graphical representation of the area on the terrain and on 3D models and objects that is visible from either a defined single stationary point (**3D Viewshed**) or a dynamic object moving along a defined route (**Dynamic 3D Viewshed**).
- ◆ **Viewshed Query:** Analyzes the visibility from multiple viewshed observer viewpoints to a selected area. Based on the 3D viewshed analysis object, the tool computes the overall visibility of different points in the designated area.
- ◆ **Viewshed Analysis Tool:** Marks all the visible segments, within a field of view, from a given viewing point.
- ◆ **Threat Dome Tool:** Displays the visible volume from a given point on the terrain with a specified scan field and elevation angle.

Shadow Tools

- ◆ **Selection Shadow Tool:** Displays the shadow effect only for selected objects.
- ◆ **Shadow Query:** Calculates the sun-shadow ratio in a specified area, over a selected time span.



Comparison Tools

- ◆ **Imagery Comparison Tool:** Helps you detect changes between two aerial images of the same location by allowing you to dynamically compare the 3D view with and without an Imagery layer.

Feature Layers

A feature layer is a visual representation of a geographic data set like roads, national parks, political boundaries, and rivers using geographic objects such as points, lines, and polygons.

You can display on the terrain feature layers from the SkylineGlobe layers catalogue or one of your own in .fly (SkylineGlobe layer), .shp (ESRI Shape layer), or .kml/.kmz (Google Earth layer) format.

Layers are added to the Fly project as elements in the Project Tree that can be toggled on and off.

3D Mesh Layers (3DML)

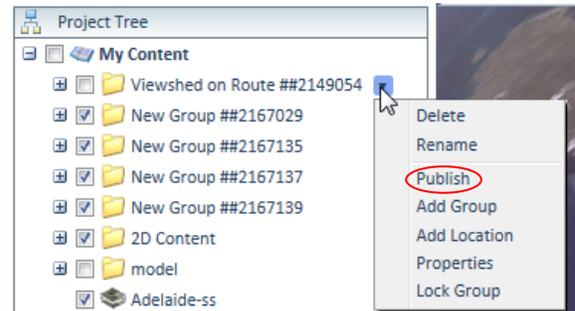
A 3D mesh layer (3DML) is a fully textured urban model that has been compressed and stream-optimized to accelerate loading speed and efficiently handle memory. 3DMLs are created in TerraBuilder CityBuilder by merging 3D mesh models generated by TerraBuilder PhotoMesh and/or layers with individually referenced 3D models. A simple 3DML from a single point shapefile with individually referenced 3D model files can also be created in SkylineGlobe using the Make3DML tool.

3DML layers can be loaded from 3DML files on your own computer or local network or from a database that is served over a network by the TerraGate SFS service.

Spatial and attribute queries can be performed on each of the 3DML's feature layers. Complex measurements and analysis operations can also be performed, including distance and surface measurement and line of sight and 3D viewshed analysis.

Publishing Capability

All projects and project data can be freely published and shared with all or specific users in one's organization, promoting greater organizational efficiency and productivity.



Community Tool

The Community tool connects Skyline users on one collaborative network. Connecting over the internet/intranet, users can chat, annotate the terrain with text labels and free hand drawing, point using a virtual cursor, and synchronize their flight. One user serves as the manager of the session, and the rest connect as clients. You need to be a registered user in order to use the Community tool.

Favorites

In the Favorites list, you can save your search results, addresses, businesses and any other location for future reference.

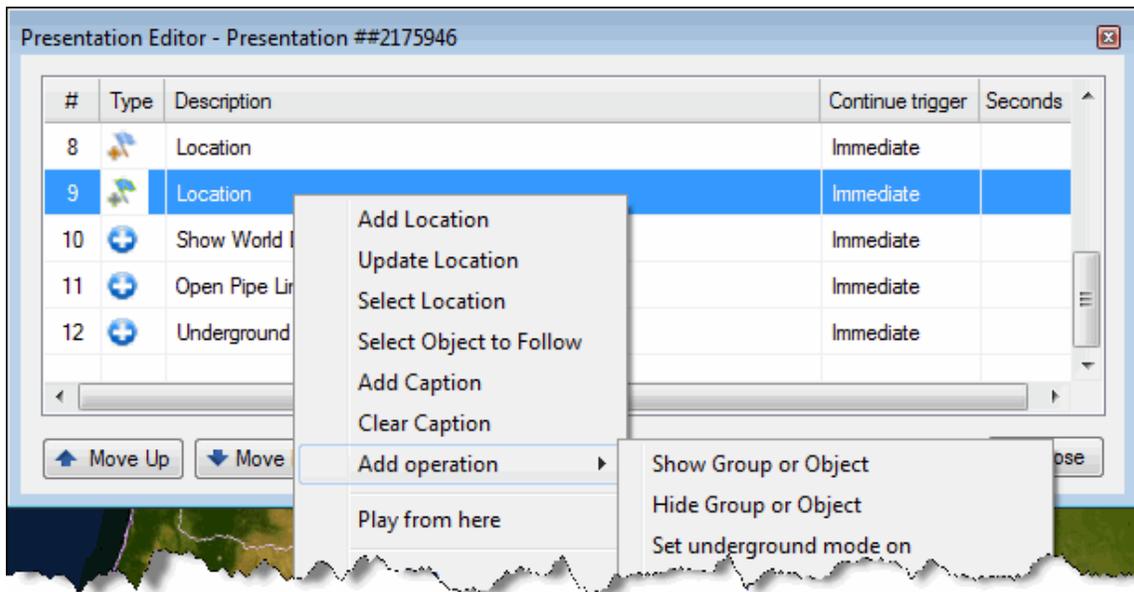
Live Feed

SGWP includes connectivity to various public live feed sources. Get current weather conditions and a seven day forecast for any U.S. location, or overlay the terrain with a selected weather map. View live feed to stay updated on financial and earthquake activity throughout the world in the past week. The application can be customized to add connectivity to other live content.



Presentations

Present your 3D project to others by creating a multi-step presentation in which you combine a customized flight route with a particular display of the project. The presentation route is created either by flying through the terrain recording an exact route or by adding each waypoint separately. You can determine what displays in the 3D world in each step of the presentation, and easily set step timings and transitions and modify step sequence.



Presentation Editor

Localization

The SkylineGlobe project is designed to easily change the default English text any other language. All the user interface text is separated from the code and stored in external text files, which can be translated and attached to the SkylineGlobe Web Package project.

3D Application Advanced Capabilities

SGWP automatically recognizes and offers extended capabilities to users with TerraExplorer Plus and TerraExplorer Pro installed on their system. Plus users can import feature and raster layers from a variety of sources, including the TerraCatalog database, while Pro users can further enhance the photo-realism of their 3D view by also adding advanced objects like buildings, dynamic objects, video, and terrain modification objects.

Additional features available to **TerraExplorer Plus** users include:

- ◆ Extended feature layer support.
- ◆ Import and editing of raster layers.
- ◆ Import of 3D mesh layers (3DML)
- ◆ Interactive drawing tools to overlay and edit all 2D and 3D objects.
- ◆ Access to TerraCatalog, a catalog database that helps you access, manage and organize your raster, feature, projects and other geographic assets.

Additional features available to **TerraExplorer Pro** users include all Plus features and the following:

- ◆ Feature layer editing.
- ◆ Querying of 3D mesh layers (3DML)
- ◆ Tool for publishing of project kits.
- ◆ Interactive drawing tools to overlay and edit advanced objects (Building, Video on Terrain, Terrain Modification, Hole on Terrain and Dynamic Objects).
- ◆ Ability to bind your project to TerraCatalog so that all project layers are automatically saved and updated in the catalog.

Extended Feature Layer Support and Editing

TerraExplorer Plus and Pro users can load all feature layers in supported formats, (e.g. Esri shapefiles, Microsoft Access, DXF, DGN, MapInfo) and from supported servers (e.g. WFS, TerraCatalog, Skyline Feature Server, ArcSDE, Oracle). Layer level operations can then be performed using the layer's property sheet

Pro users can also perform advanced feature layer editing.

The **Attribute Table** enables you to search the layer attribute database files and display the results in the 3D Window. You can use this table to fine-tune the information that is displayed on the terrain or to create a new project layer or file based on the filtered layer. The original layer is not modified.

Spatial Queries - Features can also be selected based on their spatial relationship with a drawn polygon, line or point, or with an existing object. You choose whether to include only features that entirely overlap with your selected or drawn geometry, or whether to include also those that partially intersect. You also can define a buffer zone to include features within a certain radius of the selection. Selected features can then be merged into a single feature, clipped one from another, deleted, or exported to a new file.



Spatial Query with Buffer Zone

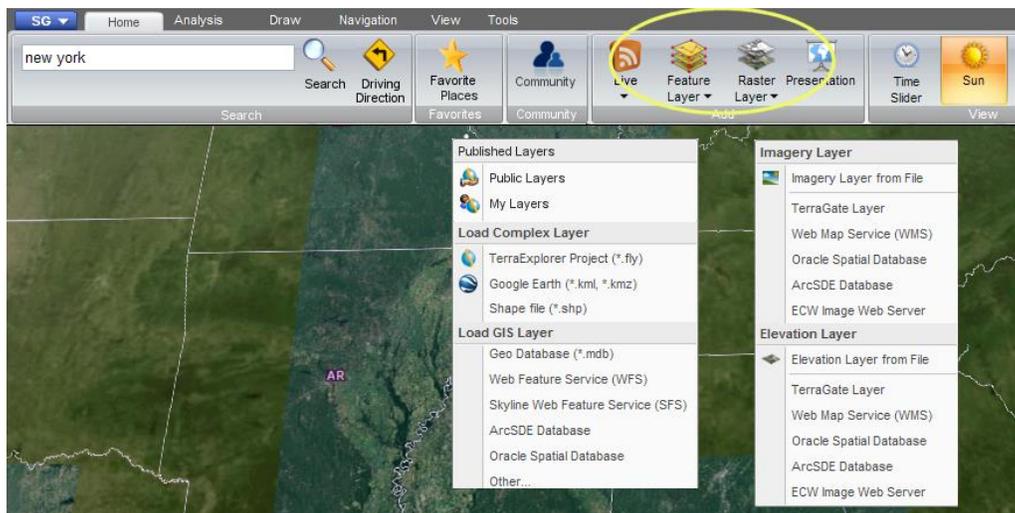
Various **spatial operations** can be performed on the selected features, including deleting selected features, merging features into a single feature, creating a multipart feature, clipping one polygon from another, exploding a multi-part feature into its individual component features, and exporting selected features to a new file.

Saving: Since you are always connected to the data source (local or remote), you can easily get the latest source updates by refreshing the layer. For .shp files and SFS/WFS-T (A WFS service with read-

write access by enabling transactions), all changes can be saved directly to the original source file. Data source updating is also supported for streaming layers.

Import and Editing of Raster Layers

TerraExplorer Pro and Plus users can overlay the terrain with imagery layers containing geo-referenced, satellite or aerial images and replace the elevation data of the terrain database with geo-referenced elevation raster. Raster layers can be loaded in supported formats (e.g., .jpg, .ecw, .img, .bmp) and from supported servers (e.g. WMS, Oracle Spatial, TerraGate, ArcSDE). Imported data, of unlimited size and resolution, is automatically morphed with the terrain imagery.



SkylineGlobe for Plus Users

Publishing Project Kits

Pro users can create a kit for an entire online project or for a subset of an online project to use offline in disconnected environments, and to share with external users. When creating an offline project in a specific area, all project terrain, data, and objects are included in your mini-project so that you can view and display your “area of interest” comprehensively and accurately in a fraction of the time required to create an entire project. SGWP also offers the option to publish a project as a local kit, maintaining references to all network resources or as an Internet kit for publishing to a web server. A subset project can also be published for use on android devices.



Publish Offline Project in Area

Advanced Objects

TerraExplorer Plus users can create complex 3D visualizations by adding to their project:

- ◆ **2D Objects** - Text Labels, Image Labels, Polylines, Polygons, Rectangles, Regular Polygons, 2D Arrows, Circles, Ellipses, Arcs
- ◆ **3D Objects** – Buildings, 3D Polygons, Boxes, Cylinders, Spheres, Cones, Pyramids, 3D Arrows

After creating objects, the user can edit single or multiple objects' parameters using the properties sheet, edit objects directly in the 3D window, and copy /move/delete objects in the 3D window. The objects are organized in the Project Tree.

TerraExplorer Pro users can further enhance the photo-realism of their 3D view by adding

- ◆ **Building objects** - Add 3D models to the project by manually defining the geometry of the building rooftop and stretching it above the basic terrain, or by importing the rooftop geometry from external feature layers. You can define the shape of the roof as a flat surface, or as an angular surface. After defining the building geometry, you can assign fill color and texture from external files, or apply texture from the terrain to the roof and side walls.
- ◆ **Dynamic objects** – Easily add movement to 3D objects. In addition to the featured set of ground and air vehicles, Pro and Plus users can upload any 3D model file. The object's route is set by manually placing waypoints in the 3D Window.
- ◆ **Terrain objects** – Modify the elevation values of the terrain or cut a hole in the terrain based on a polygon's shape and elevation.
- ◆ **Video file on the terrain** - Play a video file either on a selected area of the terrain (Video On Terrain), or on a floating billboard.
- ◆ **3D models** - Load pre-prepared models, such as buildings and billboards, and place them anywhere on the terrain. Models can be loaded in a variety of formats, including Collada, Direct X, 3DS, OpenFlight, and then optimized by conversion to XPL2 to improve overall model display performance as well as download rate.



3D Models

- ◆ **Point cloud models** - Add a pre-processed point cloud model at any point in the 3D terrain. These models are created from a list of points in a 3D area that are collected by various 3D scanners. You can also add a pre-processed point cloud model set. These sets are created from lists of points in a 3D area that are collected by various 3D scanners, and GPS route reading of the collecting instrument's movement while scanning the data.

2D Web Application

Using SkylineGlobe 2D Web Application, users can navigate, search, and edit customized 2D maps on different platforms including tablets and smartphones. With no plug-in or installation and support for most operating systems and browsers, your users can access the information they need whenever and wherever they are. The SkylineGlobe 2D Application is available as either an independent web application or as an integrated component of the SkylineGlobe Web Package.

Navigation

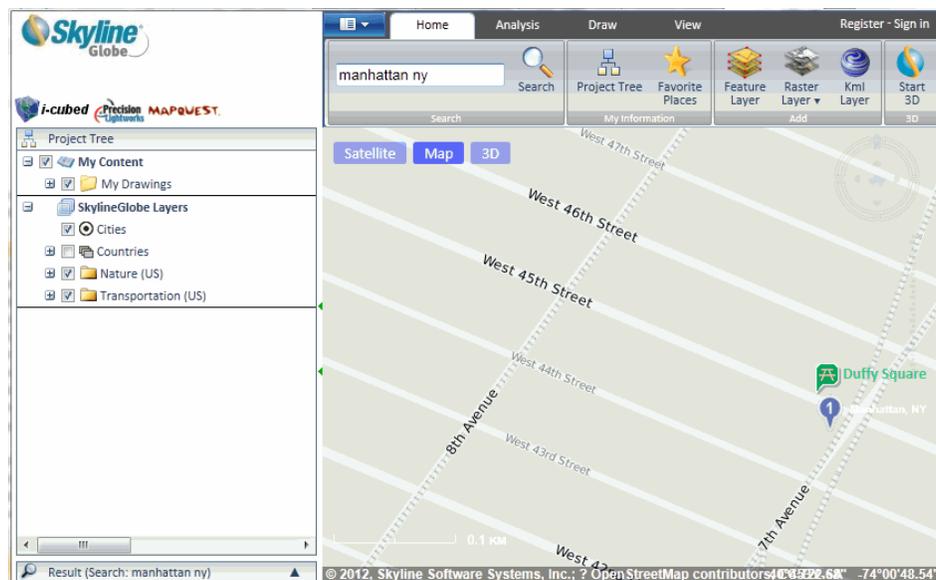
Navigate freely using mouse controls or the virtual joystick, or search for a particular location. Favorite locations can be saved to your Favorite Places for easy future reference.

Raster and Feature Layers

Users can create custom 2D maps by adding and editing raster and feature layers from WMS and WFS services, KML layers and basic drawings (points, lines, polygons). These customized 2D maps can be easily integrated in the SkylineGlobe 3D application or viewed in the standalone 2D application.

Viewing Modes

Map buttons enable you to switch between a map view, satellite view and 3D view of your data without moving off the map. Toggle display of overlay data layers and drawing objects so you can view precisely the data you need.



SkylineGlobe WP - 2D Web Application

2D Mobile Web Application

The 2D Mobile Application features multi-touch gestures and a user interface that is optimized for limited screen real estate, so your users can fluidly navigate, search, and even create customized 2D maps from their mobile devices. The application requires no plug-in or installation and supports most operating systems and browsers.

Navigation

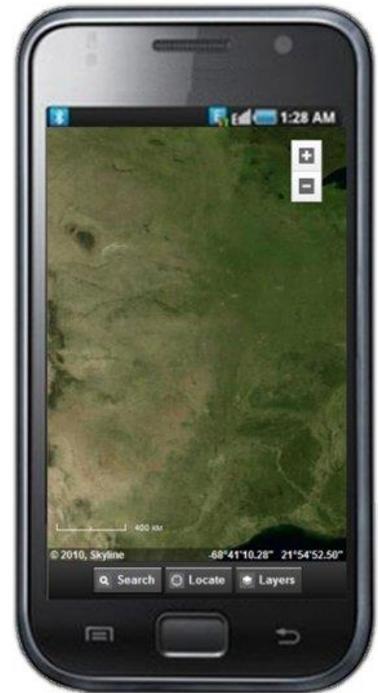
With the mobile application's support for multi-touch gestures, you can pan and zoom in your 2D map in a fluid, and intuitive manner. Complete with full screen map browsing and an integrated search function, the mobile application also connects to your device's GPS to pinpoint your current location quickly and accurately.

View

The mobile application features a mobile-optimized user interface, with minimized controls and a full screen mode. Users can easily switch between satellite and map views to view map data in the most effective manner.

Customization

2D Mobile Application users can create custom maps by adding raster and feature layers from WMS and WFS services as well as basic drawing objects. The display of the overlaid data can easily be toggled on or off so users can view precisely the data they require.



Website Administration

SkylineGlobe Manager is a back-end, web-based application that allows you to set up a comprehensive 3D application tailored to your organization's needs with minimal effort. Using a simple web interface, you can

- ◆ **Create a custom web application** – Select the available layers, ribbon commands, base .Fly, and other settings. You can extend the application with additional tools that interface with your organization's data, by utilizing the comprehensive TerraExplorer API.
- ◆ **Manage your web application** – Define basic administrative settings such as: authentication mode, user interface language, public URL (to connect to specific SkylineGlobe), and search providers and monitor website traffic.
- ◆ **Create subsites of your application** - If your application is intended for multiple target audiences (e.g. groups of interest or different user privileges), you can easily create customized web applications (subsites), so that each group sees only the data and tools that are relevant or of interest to it. Using the Manager, you then create user roles to define which user should have access to each of the CWAs.

The screenshot displays the SkylineGlobe Manager web interface. The page title is "SkylineGlobe Manager" and the user is logged in as "admin". The main content area is titled "SkylineGlobe Settings" and is divided into several sections:

- SkylineGlobe Status:**
 - Windows user account used by SkylineGlobe: NT AUTHORITY\NETWORK SERVICE
 - Machine Name: TEST
 - Database Type: Oracle
 - Connection String: Data Source=xe;User ID=skylineglobe;Password=*****
 - Connection Status: Ok
 - Gazetteer Status: [Install](#)
 - Permissions Status: Resources dir: OK, SGManager dir: OK, SkylineGlobe dir: OK
 - Resources Directory: C:\Program Files\Skyline\SkylineGlobe\SGResources
- Authentication:**
 - Authentication Mode: Forms
- Settings:**
 - Language: English (English)
 - Public URL: http://TEST
 - TerraGate URL (InternetLicense): http://terragate/
 - Collaboration Server URL: terragate:82
 - Disable TE Context Menu:
 - 2D Mode: Force 3D

A "Save" button is located at the bottom of the settings section. The footer contains the copyright information: © 2012, Skyline Software Systems, Inc. with links to Skyline Home, Legal Notice, and Contact Us.

SkylineGlobe Manager

Customized Project Trees

Define the application's initial terrain and feature data, as well as other feature and raster layers that are available to website users. You can easily organize all overlay layers in custom folders in the Project Tree so users can easily toggle their display on/off. If you have created customized web applications (CWAs) for different user groups, you can create any number of different tree configurations, and then add the appropriate Project Tree to each of the CWAs.

Layers Manager

User: Skyline Logout ?

This page allows you to edit layers tree displayed in Layers tab of Skylineglobe. Click on node to edit properties. Right click on node to rename/delete/add layer/add folder.

Defined trees:

- Root
 - Countries
 - Cities
 - Nature
 - Recreation Areas**
 - Beaches and Bays
 - Transportation
 - Airports (US)

Recreation Areas properties

Name:

Icon:

Type: ▼

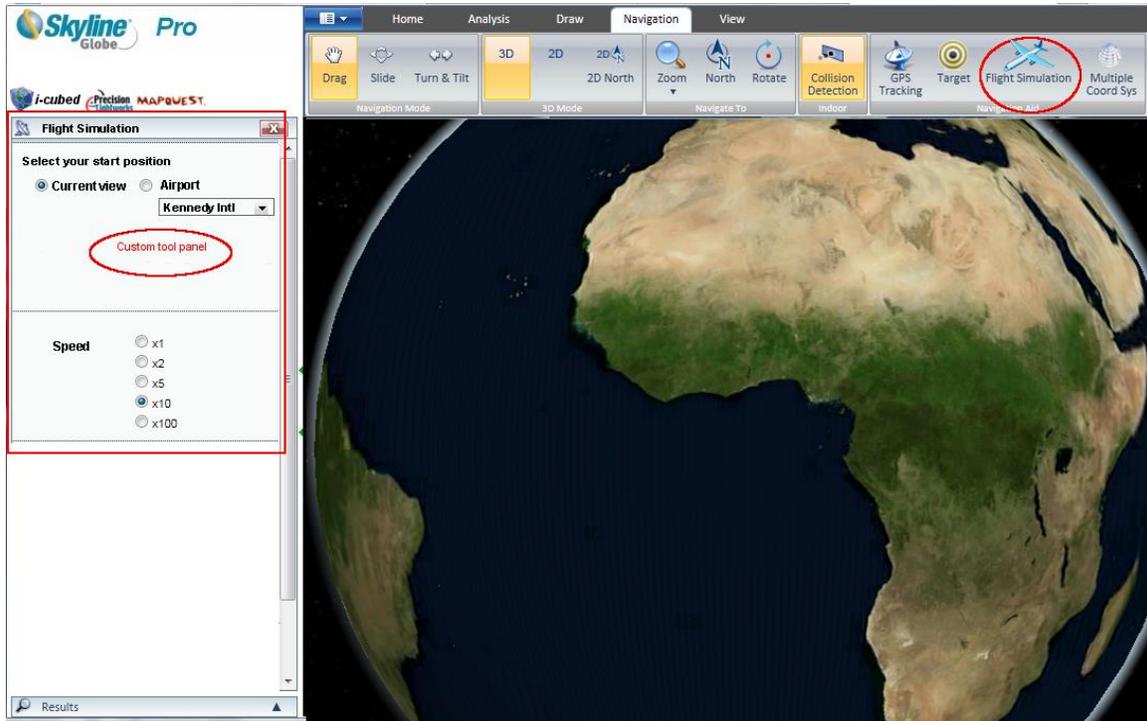
Fly Url:

Load on start:

Customizing the Project Tree

Customized Tools and Ribbons

Use HTML or JavaScript files to create custom tools for an application that can interact with the Web Package framework, as well as with the 3D window. Then customize the application's ribbon, adding the custom tool's button to the required tab. Your application can easily be configured to display different ribbons depending on the user's license and current mode (2D/3D).



Customized Web Application with Customized Tool and Ribbon

Creating Application Subsites for Different Users

Create customized web applications (subsites) for multiple target audiences (e.g. groups of interest or different user privileges, so that each group sees only the data and tools that are relevant or of interest to it. The SkylineGlobe Manager simplifies management of all of your customized web applications (CWAs) by providing a single interface from which you can define your CWAs, and configure layer, ribbon, and tool functionality for each. Using the Manager, you then create user roles to define which user should have access to each of the CWAs.

API Development

Extend your application by developing your own JavaScript or HTML tools, which use the SkylineGlobe Application Programming Interface (SGAPI) and the TerraExplorer API. The SkylineGlobe Application Programming Interface (SGAPI) provides the properties and methods to create tools to execute and manage SkylineGlobe tools and panels (e.g. Favorites, Project Tree, Results, and Search). SGFramework is the entry point to all SkylineGlobe classes. Through this class you can customize the different components of a web application as well as access all the properties and methods of the TerraExplorer v65 API.

The following classes are properties of the SGFramework class:

- ◆ **Favorites** - Provides methods for adding and removing any object or location to/from the SkylineGlobe Favorites panel.
- ◆ **GlobalEvents** - Controls the triggering of events and the association of functions with specific events.
- ◆ **ProjectTree** - Provides a method for managing the Project Tree in the SkylineGlobe Web Package.
- ◆ **ReferrerDetails** - Returns information about the CWA the user is currently connected to.
- ◆ **Results** - Provides methods for managing the Results panel of the SkylineGlobe Web Package.
- ◆ **Ribbon** - Exposes control over the ribbon.
- ◆ **Search** - Provides a method for executing a search tool on the SkylineGlobe Web Package.
- ◆ **SGWorld** - Exposes all the properties and methods of the **TerraExplorer v65 API**.

The **TerraExplorer Application Programming Interface (API)** provides a powerful way for integrating SkylineGlobe and custom applications. It also provides a way to create extensions that can access external information sources such as databases or geospatial files.

The following main issues are addressed by the TerraExplorer API:

- ◆ Navigating in the 3D world.
- ◆ Project management (e.g. creating extensions to add support for additional file and database formats).
- ◆ Feature and raster layers (e.g. editing of feature layers)
- ◆ Object management (e.g. real-time movement of objects for command and control applications or addition of custom-made objects).
- ◆ Terrain analysis (e.g. advanced terrain queries such as terrain profile).
- ◆ Event notifications.

In addition, TerraExplorer's API allows a variety of other operations such as controlling the content of the containers, querying the terrain for height information, taking snapshots, controlling the mouse and more.

ISGWorld61 is the main entry point to most TerraExplorer interfaces. Through this interface you can manage your application and 3D content and handle events.

The following interfaces are properties of the ISGWorld61 interface:

- ◆ **IProject61** (.Project) – Open the project, manage its properties and save the project.
- ◆ **INavigate61** (.Navigate) – Navigate in the 3D world by setting the camera position and produce complex movements such as FlyTo and Zoom in and out.
- ◆ **IProjectTree61** (.ProjectTree) - Provides complete access to the TerraExplorer Project Tree. It allows the creation of groups and queries on objects in the tree.
- ◆ **ICreator61** (.Creator) – Create and delete all layers, objects, positions, geometry, colors, and presentations.
- ◆ **IAnalysis61** (.Analysis) – Perform terrain analysis operations
- ◆ **ITerrain61** (.Terrain) – Exposes information, such as the MPT file name that is being used, and additional information about the MPT coordinate system, and height information.
- ◆ **IWindow61** (.Window) – Allow the user to query the 3D world according to points on the screen, create and manage popup windows, create snapshots and manage user interface elements such as on screen layers and controls.
- ◆ **ICommand61** (.Command) – Enable activation of TerraExplorer user interface operations such as turning on and off the underground mode or start manual object editing.
- ◆ **ICoordServices61** (.CoordServices) – Coordinate system related features. It allows you to define a coordinate system for your input coordinates, and have TerraExplorer convert them to the coordinate system of the current terrain database.
- ◆ **Events** – Listen to TerraExplorer events using the AttachEvent method.

See <http://www.skylinesoft.com/skylineglobe/corporate/developer/default.aspx?> for an API reference guide.

System Requirements

SkylineGlobe Web Package (SGWP) Server - System Requirements

- ◆ **Operating System**
Windows® Server 2003 SP2 / 2003 R2 SP2 / 2008 SP 2 / 2008 R2 / 2012.
- ◆ **Processor**
Pentium Dual-Core or equivalent. SkylineGlobe Web Package works best in a multi-core environment and can utilize multiple CPU's and hyper-threaded processors.
- ◆ **Memory (RAM)**
1GB of RAM (2 GB or more recommended).
- ◆ **Internet Connection**
Broadband connection (recommended).
- ◆ **Browser**
Microsoft Internet Explorer (7 and higher), Firefox (3 and higher), or Google Chrome (All versions). Required only for accessing SkylineGlobe Web Administration.
- ◆ **User Privileges**
Administrator privileges required for installation and configuration.
- ◆ **Additional Software**
 - Microsoft Internet Information Services IIS6, IIS7, or IIS7.5.
 - Microsoft .Net Framework 3.5.
 - An Oracle or SQL database server must be accessible from the machine on which SGWP is installed.
 - In order to connect to the Oracle Spatial data source, Oracle Database Client and Oracle Data Provider for .NET (ODP.NET) v2.0 must be installed on the SkylineGlobe Web Package.

SkylineGlobe 3D Web Application - System Requirements

- ◆ **Operating System**
Windows® XP / Vista / 7 / 8.
- ◆ **System Memory**
1GB of RAM (4 GB or more recommended).
- ◆ **Video Card**
256MB of video memory (1024 MB or more recommended). Pixel and vertex shader v3.0.
- ◆ **Processor**
Pentium Dual-Core or equivalent.
- ◆ **Internet Connection**
Broadband connection (recommended).
- ◆ **Browser**
Microsoft Internet Explorer 7 or higher.
- ◆ **Additional Software**

- .Net Framework 4.0 extended deployment or later is required for the Make3DML and extract & publish tools.
- .Net Framework 2.0 extended deployment or later is required for Catalog and Resolution Pyramid tool.

SkylineGlobe Solutions

SkylineGlobe Solutions include all the tools needed to build your own privately hosted, 3D visualization platform based on SkylineGlobe technology. Three different software bundles are available to meet your specific 3D visualization needs:

- ◆ SkylineGlobe Enterprise Solution
- ◆ SkylineGlobe Plus Solution
- ◆ SkylineGlobe Basic Solution

SkylineGlobe Enterprise Solution contains all the software necessary to create, view, annotate, edit analyze, and share 3D environments. This all-in-one solution provides a full Application Programming Interface (API) that enables you to customize your interface according to your requirements or easily build your own 3D web application based on SkylineGlobe technology. SkylineGlobe Enterprise includes TerraBuilder, TerraBuilder CityBuilder, TerraExplorer Pro, TerraGate Terrain Service, TerraGate DirectConnect, TerraGate Spatial Framework Services (SFS), SkylineGlobe Web Package, and SkylineGlobe Viewer.

SkylineGlobe Basic Solution and **SkylineGlobe Plus Solution** are alternative bundle options for use in facilities, which require a privately-hosted, 3D visualization solution but do not need some of the more advanced features of the SkylineGlobe Enterprise Solution. Both solutions provide a full Application Programming Interface (API) that enables you to customize your interface according to your requirements or easily build your own 3D web application based on SkylineGlobe technology.

- ◆ **SkylineGlobe Basic Solution** includes TerraExplorer Pro, TerraGate Terrain Service, SkylineGlobe Web Package, and SkylineGlobe Viewer.
- ◆ **SkylineGlobe Plus Solution** contains all the software of the Basic Solution **plus** the TerraGate SFS component, which enables you to stream feature layers from a remote server and provides TerraCatalog search interface for remote users.
- ◆ **SkylineGlobe Enterprise Solution** contains all the software of the Plus Solution **plus** TerraBuilder, which enables you to create 3D terrain models and TerraGate DirectConnect, which allows streaming of 3D geographic data directly from the original sources.

What's included in each of the SkylineGlobe Solutions?

	Enterprise Solution	Plus Solution	Basic Solution
TerraBuilder	✓		
TerraGate Terrain Service	✓	✓	✓
TerraGate DirectConnect	✓		
TerraGate Spatial Framework Services (SFS)	✓	✓	
TerraExplorer Pro	✓	✓	✓
SkylineGlobe Web Package	✓	✓	✓
SkylineGlobe Viewer (Internet License)	✓	✓	✓

- ◆ [TerraBuilder](#): Generates terrain and urban model databases from a wide variety of data types. The TerraBuilder terrain builder product creates 3D terrain databases from imagery and elevation data, whereas TerraBuilder CityBuilder creates fully textured urban models (3DML) from 3D mesh models and classification layers and/or from model layers.
- ◆ [TerraGate](#): A family of tools designed to support the client-server data delivery requirements of Skyline's 3D technology. This powerful network feature and terrain server technology efficiently streams massive amounts of 3D geographic and feature data to thousands of concurrent users, giving each user uninterrupted viewing.
 - **TerraGate Component**: Delivers 3D geographic data from terrain databases (MPT) or directly from the original sources through the DirectConnect extension of the Terrain Service. This component also enables the use of extended TerraExplorer Pro API capabilities in the SkylineGlobe web application, as well as hosts TerraExplorer collaboration sessions.
 - **TerraGate Spatial Framework Services (SFS) Component**: A powerful network feature server technology that delivers feature, map, and 3DML data in OGC Web Feature Service (WFS), Web Map Service (WMS), and 3DML Service protocols and provides TerraCatalog search interface for remote users (CSW).
- ◆ [TerraExplorer Pro](#): A powerful, easy-to-use tool for analyzing, annotating and publishing photo-realistic interactive 3D environments. Allows users to fly over and edit geo-referenced 3D terrain databases created through TerraBuilder and overlay unique information.
 - **SkylineGlobe Viewer**: A standard TerraExplorer Viewer that provides advanced API capabilities only when it is embedded in a SkylineGlobe web application. After installation, TerraExplorer Viewer can be run either as a stand-alone application, providing only standard capabilities, or from SkylineGlobe web application, using the Internet License to provide advanced API.
- ◆ [SkylineGlobe Web Package](#): A complete out-of-the-box web application for publishing interactive 2D and 3D geospatial environments that increase understanding and improve decision making. Website users can navigate through an intuitive, virtual environment, viewing, analyzing, and annotating data in its geographical context. You can customize the application, from the included data layers to the application tools and commands, as well as create customized subsites for different user groups.

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Technical support: support@skylinesoft.com

General information: info@skylinesoft.com

Contact Skyline on the Internet at <http://www.skylinesoft.com>