## **Gulf Shores, Alabama**

Identification Information: Citation: Citation Information: Originator: Kucera International, Inc. Publication Date: 20090702 Title: 36107 Gulf Shores, AL Orthophoto Project Edition: One Geospatial Data Presentation Form: remote-sensing image Series Information: **Publication Information:** Publication Place: Jacksonville, FL Publisher: Olsen Associates, Inc. Other Citation Details: None Online Linkage: None Larger Work Citation: Citation Information: Originator: Kucera International, Inc. Publication Date: 20090702 Title: 36107Gulf Shores, AL Orthophoto Project Series Information: Publication\_Information: Publication Place: Jacksonville, FL Publisher: Olsen Associates, Inc. Online Linkage: None Description: Abstract: A digital orthophoto (DO) is a digital raster image of an aerial photograph which, through a process of differential rectification, has been brought to an accurate, uniform scale with a specified tolerance. The differential rectification process involves relating the digital photo imagery to terrain coordinates and elevations (e.g., a digital terrain model) so as to correct for scale variation due to terrain relief and image displacement due to the angular offsets of the aerial camera at the time of exposure. A digital orthophoto is essentially the image-based equivalent of a photogrammetrically compiled planimetric map. Purpose: A digital orthophoto is a geometrically accurate photographic

record of landscape conditions at the time of the corresponding aerial photography. As such, the digital orthophoto is useful for a variety of applications, such as environmental monitoring, facility engineering/maintenance, city/county planning, property line review, etc. The digital orthophoto can be used alone or as a raster basemap for corresponding vector line mapping. Supplemental Information: The DEM was obtained from the U.S. Geological Survey's National Elevation Dataset. Time Period of Content: Time Period Information: Single Date/Time: Calendar Date: 20090529 Range of Dates/Times: Multiple Dates/Times: Currentness Reference: Ground Condition Status: Progress: Complete Maintenance and Update Frequency: Unknown Spatial Domain: Bounding Coordinates: West Bounding Coordinate: -87.8033 East Bounding Coordinate: -93.1000 North Bounding\_Coordinate: 30.2840 South Bounding Coordinate: 30.1069 Keywords: Theme: Theme Keyword Thesaurus: None Theme Keyword: aerial photograph Theme Keyword: digital orthophoto Theme Keyword: orthophoto Place: Place Keyword Thesaurus: None Place Keyword: Gulf Shores Place Keyword: Alabama Stratum: Temporal: Access Constraints: None Use Constraints: None Point\_of\_Contact: Contact Information: Contact Person Primary: Contact Organization Primary: Contact Organization: Olsen Assocaites Contact Person: Albert E. Browder, Ph.D., P.E. Contact Position: Senior Coastal Engineer

Contact Address: Address Type: mailing and physical address Address: 4438 Herschel St. City: Jacksonville State or Province: AL Postal Code: 32210 Country: USA Contact Voice Telephone: 904-387-6114 Contact Facsimile Telephone: 904-384-7368 Contact Electronic Mail Address: abrowder@olsen-associates.com Hours of Service: None Security Information: Native Data Set Environment: Georeferenced TIFF Format Images Cross Reference: Citation Information: Series Information: **Publication Information:** Data Quality Information: Attribute Accuracy: Logical Consistency Report: None Completeness Report: Complete Positional Accuracy: Horizontal Positional Accuracy: Horizontal Positional Accuracy Report: This image complies with National Map Accuracy Standards. It has been tested at 90% confidence level to be within 2.5 feet of well defined points in unobscured areas. Does not apply to vertical surface features, such as structures, appearing in the digital orthophotography due to inherent lean. Vertical Positional Accuracy: Lineage: Source Information: Source Citation: Citation Information: Series Information: **Publication Information:** Larger Work Citation: Citation Information: Series Information: **Publication Information:** Source Scale Denominator: 6000 Type of Source Media: vidiodisk Source Time Period of Content: Time Period Information: Single Date/Time: Calendar Date: 20090529 Range of Dates/Times: Multiple Dates/Times: Source Currentness Reference: Ground Condition Source Citation Abbreviation: IMG

Source\_Contribution: Digital orthophotos from scanned aerial film

photography.

Process\_Step:

Process\_Description:

The orthophoto imagery was controlled by the GPS/IMU collected during the flight mission.

New color aerial photography of the site is acquired using a USGS calibrated/approved aerial camera system mounted in a twin-engine aircraft. The aerial camera used was Leica ADS40 SH51 During the aerial photography, the XYZ position of the camera center (principal point) and angular orientation of the aerial camera at the instant of each line is accurately measured using an airborne GPS/IMU system interfaced with the aerial camera. GPS base-station receivers are also operated on the ground over known site points during the flyover provide data necessary to relate the aerial camera position and orientation measurements to the terrain coordinate system. The aerial photography is processed, checked, scanned, and titled. The airborne GPS/IMU data is processed together with the simultaneously recorded ground-based GPS base station data to determine the aerial camera position and orientation in the terrain (project) coordinate datum. The scanned digital photo imagery for each exposure is directly oriented on digital orthophoto production stations using the associated airborne GPS/IMU data and rectified to digital elevation model data. Image rectification was performed using Leica G-PRO. Using automatic image processing software, blocks of rectified digital images are mosaicked together and radiometrically adjusted (tone balanced) across the images to achieve a generally seamless appearance. Mosaicking was completed using Inpho Systems Orthovista. Each mosaicked raster image was individually adjusted in Adobe Photoshop after automated processing to correct for anomalies in the mosaic. Automated image processing software is used to extract individual image tiles with client-specified tile system. Orthophoto tile system is modular and is defined by coordinate grid lines of NAD83/90 HARN Alabama State Plane Coordinate System, West zone. The individual final tiled images are subject to manual QC review, including feature representation, edge match, radiometry, and geometric accuracy. Positions of targeted ground points observable in the imagery are compared against their surveyed coordinate positions as a geometric

accuracy check. Back-up copies of raw scanned and rectified imagery are maintained. Process Date: 20090702 Process Contact: Contact\_Information: Contact Person Primary: Contact Person: Andrew Kaschalk Contact Organization: Kucera International, Inc. Contact Organization Primary: Contact Position: Cadastral Mapping Managert Contact Address: Address Type: mailing and physical address Address: 38133 Western Parkway City: Willoughby State or Province: OH Postal Code: 44094 Country: USA Contact\_Voice\_Telephone: 440-975-4230 Contact Facsimile Telephone: 440-975-4238 Contact Electronic Mail Address: a.kaschalk@kucerainternational.com Hours of Service: 0900-1630 Spatial Data Organization Information: Direct Spatial Reference Method: Raster Raster Object\_Information: Raster Object Type: Pixel Row Count: 11115 Column Count: 11775 Vertical Count: 0 Spatial Reference Information: Horizontal Coordinate System Definition: Planar: Grid Coordinate System: Grid Coordinate System Name: State Plane Coordinate System Universal Transverse Mercator: Transverse Mercator: Universal Polar Stereographic: Polar Stereographic: State Plane Coordinate System: SPCS Zone Identifier: 0903 Lambert Conformal Conic: Transverse Mercator: Scale Factor at Central\_Meridian: 0.9999411765 Longitude of Central Meridian: -081.000000 Latitude of Projection Origin: +24.333333 False Easting: 152400.3048006096 False Northing: 0 **Oblique** Mercator: **Oblique Line Point:** 

1983

Polyconic: ARC Coordinate System: Equirectangular: Azimuthal\_Equidistant: Planar Coordinate Information: Planar Coordinate Encoding Method: coordinate pair Coordinate Representation: Abscissa Resolution: 1.5 Ordinate Resolution: 1.5 Distance and Bearing Representation: Planar Distance Units: Survey Feet Geodetic Model: Horizontal Datum Name: North American Datum of 1983 Ellipsoid Name: Clarke 1866 Semi-major Axis: 6,378,206 Denominator of ALattening Ratio: 294.9787 Vertical Coordinate System Definition: Altitude System Definition: Depth System Definition: Entity and Attribute Information: Detailed Description: Entity Type: Attribute: Attribute Domain Values: Attribute Value Accuracy Information: Overview Description: Entity and Attribute Overview: Color orthophotos are comprised of pixels. Each pixel is assigned a value of 0 to 255. That number will refer to a color look-up table which contains red, green and blue (grey) values, each from 0 to 255, for that pixel within the image. Entity and Attribute Detail Citation: None Distribution Information: Distributor: Contact Information: Contact Person Primary: Contact Person: Albert E. Browder, Ph.D., P.E. Contact Organization: Olsen Associates, Inc. Contact Organization Primary: Contact Position: Senior Coastal Engineer Contact Address: Address Type: mailing and physical address Address: 4438 Herschel St. City: Jacksonville State or Province: AL Postal Code: 32210 Country: USA Contact Voice Telephone: 904-387-6114 Contact Facsimile Telephone: 904-384-7368 Contact Electronic Mail Address: abrowder@olsen-associates.com

Hours of Service: 0900-1630 Resource Description: None **Distribution Liability:** Olsen Associates, Inc. provides the geographic data "as is". This organization makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. Also, this organization makes no warranty, either express or implied, regarding the condition of the product or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although these files have been processed successfully on computers at this organization, no warranty is made by this organization regarding the use of these data on any other system, nor does the fact of distribution constitute or imply such a warranty. Standard\_Order Process: Digital Form: Digital Transfer Information: Digital\_Transfer\_Option: Online Option: Computer Contact Information: Network Address: **Dialup** Instructions: OfALine Option: Recording Capacity: Available Time Period: Time Period Information: Single Date/Time: Range of Dates/Times: Multiple Dates/Times: Metadata Reference Information: Metadata Date: 20090702 Metadata Review Date: 20090702 Metadata Contact: Contact Information: Contact Person Primary: Contact Person: Mr. John Antalovich, Jr. Contact Organization: Kucera International, Inc. Contact Organization Primary: Contact Position: President Contact Address: Address Type: mailing and physical address Address: 38133 Western Parkway City: Willoughby State\_or\_Province: OH Postal Code: 44094 Country: USA Contact Voice Telephone: 440-975-4230 Contact Facsimile Telephone: 440-975-4238 Contact Electronic Mail Address: map@kucera-gis.com Hours of Service: 0900-1630

Metadata\_Standard\_Name: FGDC Content Standards for Digital Geospatial Metadata Metadata\_Standard\_Version: FGDC-STD-001-1998 Metadata\_Security\_Information: