

**National Spatial Data Infrastructure
Cooperative Agreement Program
Category 5
Geographic Information Integration and Analysis**

Agreement No. 06HQAG0098

Interim Report

Project Dates: Initiated March 2006 – March 2007

Organization:

Connecticut Geospatial Information Systems Council
c/o Connecticut Department of Information Technology
101 East River Drive
East Hartford, CT 06108
www.ct.gov/gis

Project Leader:

Michael Varney (*Please note change from Thomas Confrey)
Connecticut Department of Information Technology
101 East River Drive
East Hartford, CT 06108
(860) 622-2462
michael.varney@ct.gov

USGS Mapping State Liaison:

Lynn C. Bjorklund
Geospatial Liaison for ME, NH, VT, MA, RI, CT
National Spatial Data Infrastructure (NSDI) Partnerships Office
U.S. Geological Survey
10 Bearfoot Rd.
Northborough, MA 01532-1558
office 508-490-5074, cell 508-612-5195, fax 508-490-5068
lcbjorklund@usgs.gov
<http://www.usgs.gov/ngpo/>

Collaborating Organizations:

Tyler Kleykamp
CT Office of Policy and Management
450 Capitol Avenue
Hartford, CT 06106
Tyler.kleykamp@po.state.ct.us

James Spencer

GIS Development and Computer Systems Section
Bureau of Policy and Planning
Connecticut Department of Transportation
2800 Berlin Turnpike PO BOX 317546
Newington, CT 06131-7546
James.spencer@po.state.ct.us

Data Themes:

Administrative and Political Boundaries

- State, county, municipal, independent city, borough, village
- Connecticut regional planning organizations
- U.S. Congressional districts
- Connecticut Senate districts, Connecticut House districts
- American Indian reservations and trust lands
- Voting districts
- School districts
- Fire districts
- U. S. zip code areas

Base Map Imagery

- Georeferenced USGS topographic quadrangle maps
- Georeferenced NOAA nautical charts
- Includes current and previously published maps

Cadastral Information

- Privately owned parcels
- Publicly administered land - military reservations, state parks, open space

Census and Demographics

- Census blocks and tracts
- Urban areas

Critical Infrastructure

- State and federal offices
- Municipal offices, police stations, firehouses
- Hospitals, clinics, EMS, nursing homes, emergency shelters
- Universities, colleges, schools
- Stadiums and conference centers
- Military and National Guard bases
- Emergency equipment and supply houses

Elevation and Bathymetry

- Elevations of land surface (bare earth)
- Height of natural and manmade structures (trees and buildings)
- Depths below water surface (bathymetry)
- Spot elevations

Contour lines
3D surfaces

Geodetic Control

Geodetic control - a common reference system for establishing accurate coordinate positions of all geographic data
Geodetic control stations (GPS base station)
National Geodetic Survey control points

- Bench marks, Monuments, survey markers

Geographic Names and Places

Georeferenced official names of natural, physical and cultural features such as bars, bays, beaches, channels, cliffs, falls, flats, gaps, hills, hill ranges, islands, lakes, ledges, points, populated places, reefs, ridges, rivers, rocks, swamps, towns, valleys, etc.

Oblique Photo Imagery

Georeferenced aerial photography (side view)
Color, leaf on, leaf off, etc.

Orthoimagery

Georeferenced aerial photography (bird's eye view)
Includes current and historic photography
Black and white, color, color infrared, leaf on, leaf off, etc.
Example – 2004 orthophotos
Orthoimagery provides a positionally correct image of the earth. Many geographic features, including those that are part of the framework, can be interpreted and compiled from an orthoimage.

Photo Imagery

Un-georeferenced aerial photography (bird's eye and side-view photos)
Black and white, color, color infrared
Leaf on, leaf off
Photo index (georeferenced photo center points)
Example – 1965 photos

Hydrography

Surface water features such as lakes and ponds, streams and rivers, canals, bays, harbors, oceans, and shorelines
Dams, waterfalls, canals
USGS stream monitoring stations
Stream linear network (flow lines) – flow direction, stream order, gradient
Shoreline linear network (coastlines)
Historic, mean high, mean low water shorelines
Drainage basin, watershed boundaries

Land Use and Land Cover

Derived through analyses of satellite-based remote sensing images
Land use and land cover (residential, commercial, deciduous forest, etc.)
Impervious surface
Examples - land cover for the years 1985, 1990, 1995, and 2002

Transportation

Roads

- Linear referenced centerlines incorporating unique feature identification codes or route numbers and measures for all roadway segments including all public, local, and private roadways in Connecticut
- Associated features attribution – depicting functional class, level of service, impacting feature sets (bridges and tunnels) and more
- Street address ranges
- Road Planimetrics – Graphical representation of roadway structure and characteristics including edge of road curb line and more
- Address geocoding and routing services

Trails – centerlines for all types of trails including hiking, bicycle and pedestrian trails, and pathways using linear referencing systems where available

Railroads - centerlines using linear referencing systems where available.

- Associated and impacting features and attribution (stations, levels of service, infrastructure, ownership, and use)

Airports/Heliports - feature identification, ownership, and level of service

Harbors and ports - feature identification, ownership, and level of service

Ferries - feature identification, ownership, and level of service

Bus and para-transit service - feature identification, ownership, and level of service

Project Summary:

This project seeks to implement a means for providing Connecticut's latest geospatial information to the public and other interested parties. To best provide this service and to align with other New England data models and the goals of the National Map, Connecticut will be implementing a web portal that will allow for the use and potential download of many of the geospatial datasets available to Connecticut. Current plans include the incorporation of the 2004 ortho-imagery and various State resource datasets. Future plans and design included many other framework datasets and associated metadata as they become available. Keys to the success of this project have been tied to the planning and coordination; Staffing resources, and the commitment of a few dedicated individuals leading the effort.

As Connecticut is in it's infancy concerning the development of it's geospatial information much work will need to be done in providing our geospatial information in an organized fashion. To begin this effort, in the early spring of 2006, the newly established Connecticut Geospatial Information Systems Council (CGISC) created the Data Inventory and Assessment Working Group with the charge of identifying

framework datasets for Connecticut, establishing individual subcommittees tasked to evaluate, document and provide recommendations for each framework dataset, and to establish policies, standards and general procedures for the submission, evaluation, maintenance, on-line access, and dissemination of all geospatial data within the purview of the Council. This Data Inventory and Assessment Working Group has adopted the NSDI framework as the recommended model for use within the CGISC. To follow along with this effort, the CGISC and the Data Working Group will be continuing to develop Connecticut's geospatial Information and the Web Portal. These groups will also be continuing to coordinate with the National Map and Geospatial One-Stop to insure Links to our data.

Being that Connecticut is new to the effort of exposing its Geospatial Information, the CGISC and Data Working Group are working on methods to acquire and dedicate staffing to assist in this continued commitment and effort. As part of the implementation we are developing standards to follow the update of data within the portal. Within this effort staff are being identified as stakeholders to perform these roles.

Through strong coordination between the CGISC, the Data Working Group and the DEMHS/DOIT GIS Project Manager, we have been able to successfully move forward on many of these initiatives, however due to the change in available and dedicated staffing the project has been delayed. These shortcomings have been identified and addressed with new dedicated personnel assigned to perform these important roles to ensure success of this project.

Connecticut's commitment and coordination with the USGS extends back many years through the CT Department of Environmental Protection. As Connecticut moves forward in organizing it's geospatial efforts, more formal coordination and agreements with the USGS and National Map will be sought.