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**Regional Municipal Geospatial Parcel Update and Upgrade
to the
Standards of the
Cadastral & Parcel Data Standards and Guidelines 1.0
Accepted by the CT Geospatial Information Systems Council**

**Information for Municipal Staff
October 2013**



Photo: Emery Gluck, Cockaponset State Forester

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INTRODUCTION

The LCRVCOG (*RiverCOG*) has initiated a regional Geospatial Parcel Database project that involves all seventeen member towns of the LCRVCOG through a Resolution passed by your town. In 2013, LCRVCOG received a grant from Connecticut Office of Policy and Management to help create a 17 town, seamless regional parcel data set updated to the State Cadastral Level III Standards except for percentage of parcels created from survey which will be at least to the level II Cadastral Standard of 51%, and if possible to the level III standard of percentage of parcels from survey of 75%. In addition to the development of a regional GIS parcel data set, each town will be provided with an updated GIS parcel data set of their community, current to Grand List (GL) 2013, aligned to a ground-truthed surveyed town boundary.

Benefits to your community will include, the creation of a GIS parcel data set (for those communities that lack existing GIS data), updating existing GIS parcel data to CT Cadastral Standards, and alignment of parcels to a uniform region-wide ground-truthed surveyed town boundary. Town GIS parcel data sets will be provided to each community in the latest ESRI data format, referred to as the Parcel Fabric, as well as in your original database format (if desired) retaining existing unique attribute fields required for use by your community.

Benefits to the region will include the foundation on which to build a database of small, home-based and agricultural businesses to promote economic growth and support for those business owners. This will enable the COG to create a Strategic Economic Plan for the Region in partnership with the towns.

The RFQ was published and the Technical Committee met this summer to review and interview consulting firms. After a thorough interview process, the committee's choice was Tighe and Bond, a company with a local office in Middletown, Connecticut. The project schedule starts in October 2013 with a completion date of November 2014. Upon completion of the project, each town will be provided with an updated parcel layer current to GL 2013. What it will give the 17 town Region is a standardized parcel data set that is spatially aligned with town boundaries joined to CAMA data sets that are all current to GL 2013. This will allow us to complete the 2nd part of the project, the Strategic Economic Plan.

From October through December 2013, staff from RiverCOG and Tighe & Bond will work with towns to gather maps and data from the town offices, including the town clerks, town assessors, and land use staff. This may involve downloading digital mapped data, scanning survey maps or other maps with our portable scanner. We will work with you to avoid impact on your workload and daily operations, and meet with you very soon to go over the data gathering process and introduce you to the project.

Our staff looks forward to working with you toward a great final product which will benefit all our towns. Please call Dan Bourret at our office with any questions (860-581-8554).

PROJECT DESCRIPTION

The Lower CT River Valley Council of Governments (RiverCOG) is a new regional planning organization formed from merging the preexisting Ct River Estuary Regional Planning Agency and Midstate Regional Planning Agency. The Region consists of 17 municipalities:

- Cromwell;
- Middletown;
- Middlefield;
- Durham;
- Portland;
- East Hampton;
- Haddam;
- East Haddam;
- Chester;
- Killingworth;
- Clinton;
- Westbrook;
- Deep River;
- Essex;
- Old Saybrook;
- Lyme; and
- Old Lyme.

RiverCOG and our consultant Tighe & Bond will be working during the next 12 months to update and upgrade our municipalities existing geospatial parcel data to the standards of the *Cadastral & Parcel Data Standards and Guidelines 1.0* (<http://www.rivercog.org/rpip.html>) to ensure that our Region's data has the ability to integrate with other State cadastral mapping efforts, helps meet the objective of the CT Geospatial Information Systems Council (CGISC) to create a state-wide cadastral data set that contains common data elements and framework that will allow the created municipal cadastral data sets to effectively contribute to the future development of a production level cadastral standard, and will allow separate municipal and regional geospatial cadastral data sets to be merged, and collated into a single statewide geographic information systems (GIS) data set that is consistent with the FGDC Content Standard for Digital Geospatial Metadata that can be found at <http://www.fgdc.gov/metadata/csdgm/>. Currently geospatial parcel data sets for the region are of varying ages and accuracies and run the spectrum of rudimentary with no attribution to very good quality with a link to the assessor's computer aided mass appraisal (CAMA) data.

This data set is required for regional planning efforts and that portion of the final data set applicable to each municipality will be provided to them and their current consultants upon completion of the project. **This project is not meant to replace current municipal contracts and data sets unless deemed appropriate by each municipality.**

Funding for the project is being provided by the State of Connecticut Office of Policy and Management through the Regional Performance Incentive Program.

Project completion date is October 1, 2014.

PROJECT DELIVERABLES

- An ESRI Local Government Information Database Model (LGIM) containing a seamless, 17 community parcel data set compliant to the Level III Standards of the Cadastral and Parcel Data Standards and Guidelines 1.0 accepted by the CT Geospatial Information Systems Council on 10/24/2012 for feature level metadata except for the percentage of parcels from a survey source which will be at least 51% for the Region and meet or exceed the Level II standard for percentage of parcels created from survey, 17 individual community data sets, with enabled Parcel Fabric, 17 individual CAMA tables current as of GL 2013, and the new Seamless Regional Town Boundary and 17 Individual Town Boundary data sets.
- Individual community GIS parcel geodatabase data sets to include CAMA tables current to GL 2013 with communities existing data schema retained to be given to each community.
- Individual community CAMA data sets will include an additional database field containing a standardized existing land use classification for the Region.
- Kick Off and Final Project meetings to include Tighe & Bond presenting the project to the RPIP Technical Committee and a short presentation to the Council of Governments.
- Monthly conference calls and progress reports. On site meetings, not to exceed eight meetings.
- Quarterly meetings at the LCRVCOG site to include the technical advisory committee not to exceed six meetings.
- A website to be maintained by Tighe & Bond for the duration of the project for coordination of quality control of parcel development.

COG AND TIGHE & BOND RESPONSIBILITIES CONCERNING DATA ACQUISITION OF EXISTING TOWN PARCEL DATA SETS, CAMA EXTRACTS, AND GL2013 UPDATES

The LCRVCOG will be tasked with supporting Tighe & Bond with the collection of GIS parcel data sets, CAMA extracts, and GL2013 parcel updates from the 17 member community Assessors and their respective GIS consultants. Data to be collected includes:

- Digital copies of existing GIS parcel data sets (along with any available planimetric data)
- CAMA extracts
- Source documents to be used to include GL 2013 updates

LCRVCOG staff will initiate initial communication with each of the municipalities that have existing GIS parcel data to establish a point of contact that Tighe & Bond will use to coordinate the acquisition of existing parcel GIS data.

Tighe & Bond will create and collect from each municipality CAMA extract reports that will contain the data fields desired by the LCRVCOG. A CAMA extract report will be created for Vision, Equality, and Tyler/CLT systems and used in each municipality using the respective CAMA software. LCRVCOG staff will support Tighe & Bond's efforts to acquire a CAMA extract from each municipality.

LCRVCOG staff will support Tighe & Bond's efforts to collect GL 2013 parcel update source material from each community.

HOW WILL SOURCE DOCUMENTS AND EXISTING DATA BE COLLECTED?

Parcel Data Sets

Tighe & Bond will also be requesting the most recent GIS parcel data sets from each municipality. COG staff will be asking municipal staff for the most appropriate contact for Tighe & Bond to obtain this data.

CAMA Extracts

Tighe & Bond will be requesting GL 2013 CAMA extracts from each community Assessor. The process of extracting CAMA records into a file for use in a GIS or for annual required State of Connecticut records filing is likely familiar to most communities. Tighe & Bond will provide an extract report template to each Assessor configured for their CAMA systems (Vision, Equality, or CLT/Tyler). Tighe & Bond will meet with each community Assessor to run the report and save the resulting CAMA extract file.

Source Material

The scanning process for most of the municipalities in the region will be relatively simple. The intention of the COG in this project is to not put any undo work or stress upon municipal staff. We will strive to work with you and hinder your daily routines as little as possible. If you have any questions or concerns please contact Dan Bourret, RiverCOG's GIS Coordinator @ 860-581-8554.

- Municipalities currently with digital survey data will need to provide access to the computer or storage device where those file are currently stored. The COG will bring an external hard drive so that we can transfer these files to it for the project. We will also need to scan the remaining survey maps that the town has that are not yet in digital format. The COG has purchased a portable scanner that we will set up in a location determined by the town clerk. The COG will just need to be shown or told which maps have not been scanned and we will scan them. We can provide these scans to the town to update their records.
- For municipalities without digital survey data sets the COG process will be more involved. The COG will need to scan all survey maps that are in adequate condition for the project. This has a side benefit in that the COG will be able to provide the indexed digital survey maps back to the municipality.

Town Boundary

Tighe & Bond will be supported by Vanasse Hangen Brustin (VHB) located in Middletown, Connecticut as sub consultant on this project. VHB is a licensed CT land survey company with extensive experience in the region. VHB will build a new ground-truthed regional Town boundary data layer of the 17 communities within the project limits.

Tighe & Bond's subcontractor VHB will perform research and field work to produce a ground-truthed Town boundary GIS data layer for the 17 member communities. VHB's work efforts will start immediately upon commencement of the contract. VHB will develop a spatially accurate representation of municipal boundaries as defined by each community's Town charter and other sources. Along

watercourses VHB will digitize boundaries using 2012 orthophoto imagery. The remaining land based boundaries will require locating major angle point monuments using mapping grade GPS measurement procedures.

Public research will be performed under the direct supervision of a licensed land surveyor in the State of Connecticut. During this task, Town boundary information will be collected at the State Archives, Town Clerks, CT DOT offices or other offices as applicable. The intent of this effort is to collect available written evidence and mapping of the Municipal Boundary lines. Information searched and collected will include:

- Written descriptions of municipal boundaries and charters
- Plans and perambulation maps depicting Town boundaries
- State of Connecticut DOT right of way mapping and records and
- Recorded Private Property Surveys of land adjacent to Municipal Boundaries

After research is complete, collected information will be compiled, plotted and analyzed in order to determine the intended Town boundary line locations. During this review, markers or monuments that were intended to be set at the Town Boundary corners or angle points will be plotted onto a map. This map will be used for reconnaissance during the field survey effort. The courses and distances of the described Municipal boundaries will be compiled. Each Town will be plotted independently, which may depict possible gaps or overlaps in the written descriptions and /or maps.

Using maps compiled during the research compilation task, land surveyors will perform up to four (4) days of mapping grade "GPS" (Global Positioning System) surveying at each municipality, with the purpose of searching and locating physical evidence of the Municipal Boundaries. The features to be field located during this task will most likely include stone or granite monuments, stone piles, trees and CDOT highway monuments. After field surveying is complete, collected GPS files will be downloaded for further post processing and differential correction. The expected accuracy for these GPS locations, after post processing, is one to four meters and will vary at each location. Accuracies will be dependent on atmospheric conditions, terrain, and satellite availability. After post processing is complete, the features will be exported into CAD software and will be referenced to the CTNAD83 Feet coordinate system.

Information collected and compiled during the research compilation and field survey tasks, will be plotted into one seamless AutoCAD file. In this file, the written descriptions, maps and field collected evidence (monuments) will be analyzed using typical land surveying principles and practices for boundary location determination. Resulting Town Boundary lines will be imported into an ESRI ArcGIS geodatabase format, including Federal Geographic Data Committee (FGDC) compliant metadata. Additionally, all mapping will be prepared and conform to a class 'D' standard as described in the Standards for Surveys and Maps in the State of Connecticut, as adopted by the Connecticut Association of Land Surveyors in 1996. The final Town Boundary data will be used as the framework for parcel development.

WHO WILL BE WORKING WITH YOU?

RiverCOG Staff

Jeanne Davies, AICP
Principle Planner/Deputy Director
 (Extension 711, jdavies@rivercog.org)



M.S.-Geography/Planning, Planning Studies /Netherlands, B.A. Government, Fine Arts, Education, American Institute of Certified Planners (AICP) Proficiency: Government, Planning Program Management, Research, Urban, Rural & Town Planning, Long Range Planning, Transportation, Economic Development, Teaching, Zoning, Environmental, Coastal, Grants, Geospatial & Software Applications, Emergency Management, Special Studies, Design Districts, SCRRRA Resource Recovery

COG Program Coordination-Contracts, Regional Plan, Transportation Planning, Corridor Studies, Economic Development, Grants Management, Emergency Management, RPIP, Town Assistance

Years of Work Experience: 26

Margot Burns
Environmental Planner
 (Extension 702, mburns@rivercog.org)



M.S. – Geography/Environmental Protection, B.A. – Environmental Geography

Environmental Planning Proficiency: Open Space and Natural Resource Planning; Non-Profit and Community Outreach and Coordination; GIS; Small Business Administration

Recreational Trails, Greenway/Blueways, Energy conservation, Title VI Accessibility, Scenic Road, Viewshed, Open Space Inventories, Data Analysis, RPIP, Non Profit Coordination, Mapping, Conservation, Forestry

Years of Work Experience: 26

Dan Bourret
Geospatial Coordinator
 (Extension 710, dbourret@rivercog.org)



B.A. – Geography Proficiency: Geographic Information Systems – Planning Technology – Zoning – Spatial Analysis

Environmental Justice Mapping, Surveys and Outreach GIS Mapping, Data Analysis, Mapping State POCD Compliance, Mapping for Transportation RPIP – Mapping- Project Oversight, Mapping for RPOCD Mapping Services for Town by fee, Technology Planning

Years of Work Experience: 6

Tighe & Bond, Inc.
213 Court Street
Middletown, CT 06457



Tighe & Bond is a New England based full service Engineering, Environmental and GIS Consulting Company with offices located in Connecticut, Massachusetts and New Hampshire.

Tighe & Bond will be the prime vendor for the RPIP project and will conduct all parcel work out of our Middletown, Connecticut, Worcester and Westfield, Massachusetts offices by full-time Tighe & Bond GIS staff. Tighe & Bond will be supported by Vanasse Hangen Brustin (VHB) located in Middletown, Connecticut as sub consultant on this project. VHB is a licensed CT land survey company with extensive experience in the region. VHB will build a new ground-truthed regional Town boundary data layer of the 17 communities within the project limits. The combination of Tighe & Bond and VHB's local presence will allow us to frequently meet with the RiverCOG and consult with the member communities and their current GIS consultants to deliver a quality GIS deliverable meeting the region's needs.

Tighe & Bond delivers informed and well-developed GIS solutions to our clients with a full-time staff of GIS analysts, technicians, programmers, and information technology (IT) professionals. We have assisted over 40 New England municipalities, water suppliers, sewer agencies, and private organizations with GIS data development, and application development services. Tighe & Bond specializes in supporting the needs of New England municipalities by developing, maintaining, and delivering GIS data, technical applications and services. Our work regularly consists of the services required for this project, specifically high quality cadastral data development using esri's latest GIS parcel standards. In the last 6 years Tighe & Bond has completed GIS parcel development and update projects for dozens of CT and MA communities ranging from 1,700 parcels to over 17,000 parcels, totaling over 140,000 parcels.

Key staff who will work closely with the RiverCOG and interface with member communities include:

Nicole C. Dentamaro – Project Manager and Primary Contact. Nicole has over nine years of experience as a GIS professional. She currently manages GIS projects in Cromwell, East Lyme, Greenwich, Killingworth, New Canaan, North Branford, Orange and Ridgefield Connecticut. Project tasks include parcel-based web mapping applications, parcel and planimetric updates and conversions, automation of utility systems in GIS, mobile data collection, ArcGIS workflow training, and town-wide mapping. Nicole will serve as the day-to-day Project Manager to ensure that the RiverCOG is completely satisfied with the services provided by our team. Nicole works in Tighe & Bond's Middletown Connecticut office.

Michelle L. Santerre – Lead GIS Analyst. Michelle is a GIS Analyst and will serve as GIS support staff for this project. Michelle is the lead GIS Analyst for parcel projects and over the past four years has worked almost exclusively on parcel conversions, parcel updates, and tax map production. She is currently serving as the lead analyst for data development for the MassGIS statewide parcel conversion project. She has conducted several recent tax map conversions from Assessor's Maps and CAD including New Milford, and Orange Connecticut and Monson, Massachusetts, as well as parcel realignment projects in Orange and New Fairfield, Connecticut and Sturbridge, Massachusetts. She also works on parcel updates for the towns of Watertown, Haddam, Orange, New Milford and New Canaan, Connecticut and Monson, Agawam, Wilbraham and Sturbridge, Massachusetts. Michelle works in Tighe & Bond's Westfield MA office.

Christopher C. Danforth, P.L.S. – Land Surveying Manager, VHB. Chris has extensive and diverse experience in land surveying throughout New England. He has over 24 years of providing innovative land surveying solutions to public, private, and institutional clients. For this project, he will oversee the

operation of a team of land surveying professionals, including coordination of research, field survey, and final review of all town boundary determinations. He is professionally licensed in several states and has participated in thousands of boundary surveys. Chris works in VHB's Middletown Connecticut office.

Nathaniel C. Norton - GIS Director. Nat has over 16 years of experience in the GIS field. He has extensive experience directing the growth of GIS technology practices that provide services to both private and public sector clients. He is responsible for supporting Tighe & Bond's established GIS practice. Nat will provide project direction to the team and offer consultation to the RiverCOG as needed. Nat works in Tighe & Bond's Worcester Office.