New Hampshire Broadband Mapping Program

**Rural Addressing Project**

**Detailed Procedures**

**Standard History:**

November 22nd, 2011 – Version 1 (draft)

November 23rd, 2011 – Version 2 (draft)

November 28th, 2011 – Version 3 (draft)

January 17th, 2012 – Version 4 (task timeline update)

February 6th, 2012 – Version 5 (final)

**Objective:**

Map address points for the 40,000 New Hampshire households in rural 2010 Census blocks. (NTIA defines “rural” Census blocks as those greater than 2 square miles in area.)

**Result:**

NH\_Addresses point feature class stored in an ESRI file geodatabase for inclusion in the NHBMPP database

**Required Input Data:**

1. NH\_Addresses feature class template
2. Reference USA household records in rural Census blocks, geocoded to XY coordinates
3. Digital parcel data and linkable assessing records from RPCs, municipalities, and other commercial sources where possible
4. Rural block field maps for GPS data collection (will feature TIGER roads – RPCs may produce supplemental maps with regional or state-maintained layer if needed)
5. 2010 1-foot aerial photography where available, latest NAIP 1-meter imagery where necessary.

**Overview of Procedure – Data Collection:**

1. Nashua Regional Planning Commission (NRPC) reviews geocoded address points from Reference USA to identify initial set of census blocks requiring field data collection
2. NRPC reviews available digital parcel and assessing data to further refine where address data gaps exist
3. All RPCs organize volunteer groups for collecting GPS data
4. NRPC coordinates volunteer training sessions with other RPCs and UNH Cooperative Extension
5. NRPC produces and distributes regional field maps to RPC volunteer teams
6. Volunteer teams collect GPS data where no digital parcels or assessing data addresses exist

**Overview of Procedure – Data Processing and Submittal:**

1. RPCs download any GPS data from volunteer collection efforts
2. RPCs prepare digital parcel data join with assessing records where possible
3. RPCs receive region-specific input data from NRPC
   1. Feature Class Template
   2. Reference USA geocoded points with relevant attributes
   3. Rural census block field maps with roads and aerial photography
4. RPCs acquire and join any digital parcel and assessing (address) datasets from municipalities that are not already prepared in-house
5. Using digital parcels and addresses, along with aerial photography, RPCs screen-edit Reference USA and GPSed points to residential building rooftops where possible
6. RPCs ensure that data attributes are complete and adhere to data model standards (see separate documentation – NH Rural Addressing Data Model)
7. RPCs submit all complete rural blocks of address points to NRPC via email on a monthly basis based on a pre-arranged submission schedule
8. NRPC compiles monthly submissions from all RPCs, processes and checks data, and submits to UNH in master geodatabase
9. UNH delivers periodic updates to NTIA

**Specific Procedures**

1. **Data Model Distribution and Application**

* NRPC will develop the data model for the address point feature class, including domains for several fields to ensure standard data entry
* NRPC will distribute the feature class in its associated file geodatabase (ArcGIS ver. 10.x) as a blank template to all RPCs (shapefile to be distributed if versioning issues occur)
* If needed, NRPC will create and distribute a data dictionary compatible with the GPS technology being used by volunteers in the field
* RPCs will upload data dictionaries to GPS units

1. **GPS Data Collection** 
   1. **NOTE: As of this version, GPS equipment has not been determined**

* NRPC will prepare and distribute a project-specific volunteer sign-in form, as careful tracking of all volunteer efforts is required to meet the project match
* RPCs will distribute field maps to volunteer teams
  + Prioritize field data collection based on number of points in a community and by ease of collection
* Volunteers will collect residential address points at ends of driveways
  + These points do not require a high level of accuracy – GPS settings will be determined to maximize productivity
  + At minimum, the house number attribute should be collected while in the field. Other attributes are likely best filled in after downloading the data but can be collected in the field if needed.
  + Separate points must be collected for any address that is part of a structure with 3 or less total units (single-family, duplex, and triplex). These points can be collected at the same driveway spot – they will be moved on-screen to their proper rooftop location in processing.
  + Any 4-unit or larger building will be collected as one point with a numbered range as the house address (ex. “1-8 Granite Rd.” or “2A-2F Birch St.”)
* Volunteers will submit data to RPC for post- and on-screen processing

1. **On-Screen Point Processing**

* Reference USA data
  + RPCs will import Reference USA data from only their region into empty feature class
  + RPCs will screen-edit Reference USA data points to proper rooftop locations where possible using digital parcel and address data along with best available aerial photography.
  + Separate points must be mapped for any address that is part of a structure with 3 or less total units (single-family, duplex, triplex). If all points are not accounted for by Reference USA dataset, these points can be created or copied from master point record
  + If rooftop is not visible using aerial photos, point will be manually placed in the approximate parcel centroid and marked as such in the proper attribute field
  + All other attributes will be filled in by RPCs, following data model standards (see separate document)
  + Any addresses that are not included in Reference USA dataset but clearly exist, as determined by parcel and assessing databases, can be added manually or GPSed if necessary.
* GPSed data
  + RPCs will download data from GPS units and add them to feature class template
  + RPCs will screen-edit points and enter attribute data (see above)

1. **Data Submittal and Reporting**
   * RPCs will submit feature classes to NRPC on a regular basis – initial submissions will be monthly but interval may be extended at a later date
   * RPCs will submit volunteer and staff reporting sheets to NRPC on a monthly basis

**Development Schedule**

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| **Year 2, Quarter 3 (July 1st – September 30th, 2011) - COMPLETE** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Incorporate 2010 Census figures | * Update rural area and HH count based on 2010 Census data |
| Preliminary gap analysis | * Survey RPCs and communities to establish existing dataset availability * Obtain commercial datasets |
| Administrative updates | * Monthly project management meetings * Monthly status report * Quarterly report |

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| **Year 2, Quarter 4 (October 1st – December 31st, 2011)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Gap analysis | * Identify address point gaps through cataloguing existing data **COMPLETE** |
| Execute RPC subcontracts | * Identify which RPCs will participate and split up total workshare among them **COMPLETE** * Develop scopes and execute subcontracts - ONGOING |
| Host kickoff meeting | * Invite participating RPCs **COMPLETE** |
| Data model | * Establish data collection protocol * Establish data attribute model Establish data submittal protocol - ONGOING |
| Administrative updates | * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 3, Quarter 1 (January 1st – March 31st , 2012)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Data collection kickoff meeting | * Review data collection protocol * Discuss volunteer participation options * Set data collection schedule |
| Data collection administration | * Acquire GPS equipment * Train RPC staff |
| Volunteer coordination | * Develop volunteer option list at RPC level * Begin to coordinate and train volunteers |
| Administrative updates | * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 3, Quarter 2 (April 1st – June 30th , 2012)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Volunteer coordination | * Complete volunteer training |
| Data collection | * Begin data collection in the field and on the screen |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 3, Quarter 3 (July 1st – September 30th , 2012)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Data collection | * Continue data collection in the field and on the screen * Regular submittals and data checks |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 3, Quarter 4 (October 1st – December 31st , 2012)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Data collection | * Continue data collection in the field and on the screen * Regular submittals and data checks |
| Data verification and integration | * Begin integration and verifying data using crowdsourcing and iwantbroadbandnh.org |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 4, Quarter 1 (January 1st – March 31st , 2013)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Data collection | * Continue data collection in the field and on the screen * Regular submittals and data checks |
| Data verification and integration | * Continue integration and verifying data with crowdsourcing & iwantbroadbandnh.org |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 4, Quarter 2 (April 1st – June 30th , 2013)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Data collection | * Continue data collection in the field and on the screen * Regular submittals and data checks |
| Data verification and integration | * Continue integration and verifying data with crowdsourcing & iwantbroadbandnh.org |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 4, Quarter 3 (July 1st – September 30th , 2013)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Finalizing project | * Begin final deliverable – point feature class of rural addresses with FGDC-compliant metadata record |
| Administrative updates | * Host quarterly RPC meeting * Monthly project management meetings * Monthly status report * Quarterly reports |

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| **Year 4, Quarter 4 (October 1st – December 31st , 2013)** | |
| **Primary Milestones** | **Corresponding Primary Activities** |
| Finalizing project | * Produce final deliverable – point feature class of rural addresses with FGDC-compliant metadata record |
| Administrative updates | * Final reports |