

## DSL & CABLE MAPPING ASSISTANCE GUIDELINES

The Massachusetts Broadband Institute (MBI) created and maintains estimated DSL & Cable service area maps for each town in Massachusetts, where service is known to exist, and is seeking local assistance in correcting and improving the accuracy of the service areas in your town. We ask that you evaluate and mark up the attached digital map, as appropriate and to the best of your ability, and encourage you to reach out to others in your town for assistance.

About DSL: DSL services areas were generated using a computer model to approximate the potential service areas surrounding central offices. Due to limitations of the model, many towns have missing or incomplete estimated service areas or service areas may be overestimated. DSL service originating from a central office may extend up to 18,000 cable feet in all directions, while DSL service originating from a remote terminal is often only available in specific directions for up to 18,000 cable feet. DSL service originating from remote terminals could not be estimated and mapped because the direction of DSL service, and in some cases the location of the remote terminal, is not known.

About Cable: The cable service areas were created from approximate cable strand locations filed with the MA Department of Telecommunications and Cable (DTC). Edits are primarily needed in recent cable plant expansion areas or where data conversion errors may have occurred. Information on future cable plant expansion areas that the service provider has agreed to should also be included.

## MAP TERMINOLOGY

- **Digital Subscriber Line (DSL)** – A technology providing "always on" broadband via copper telephone lines that is limited by distance, line quality and equipment.
- **Central Office (CO)** – A secure facility that connects local telephone lines to the greater telecom network and may also house DSL equipment. In rural areas, the CO is often a small, stand-alone building owned by the incumbent service provider (Verizon).
- **Remote Terminal (RT)** – An extension of a CO that consolidates local telephone lines back to the originating CO, and may also house DSL equipment. In rural areas, the RT is often located in a small cabinet by the side of the road. (See photos on page 2)
- **Cable** – A technology providing "always on" broadband via coaxial cable television lines (i.e. "cable strands").
- **Survey Data Points** – Collected through an ongoing survey launched by the MBI in May 2009, these represent the approximate locations of households and businesses (if any) who indicated they can access DSL services.







## CONTACT INFORMATION




Please send feedback or marked up maps to Christine Hatch at [hatch@masstech.org](mailto:hatch@masstech.org). If you have questions or comments about the process or how to edit the maps, you may contact Christine at 508-870-0312 x620.

## EXAMPLES OF REMOTE TERMINALS



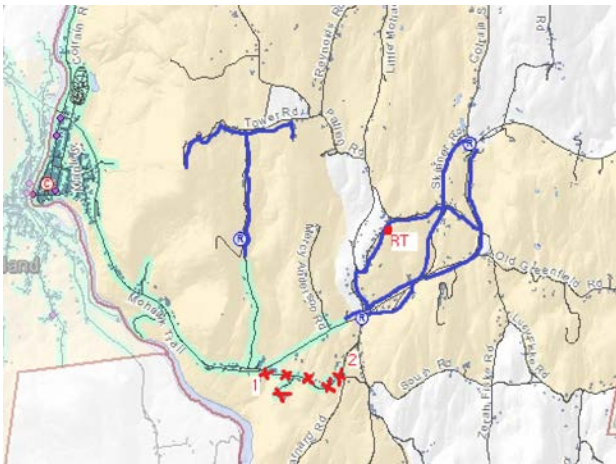
## HOW YOU CAN HELP

- Open the map document in the Paint or Adobe Reader (version XI only) program on your computer (you may have one or both installed on your PC).
  - In Windows Explorer, right click on JPG file and select “Open With...Paint” or right click on PDF file and select “Open With...Adobe Reader XI”. The PDF documents are higher quality, but you may use whichever program is better for you.
  - About Paint: Microsoft Windows 7 & 8 come with a new version of Paint. Editing is slightly different in the new version than it was in the old version, but the directions below should address both versions.
  - Paint Tips: Scroll up and down & back and forth to view the desired area; zooming can be done (very limited in the older version) using the “magnifier” tool from the toolbox or View tab (  ); the “undo” command is in the “Edit” menu or top left corner (  ) – note that you may only undo 3 edits in the older version.
  - About Adobe Reader XI: Drawing tools are only available in the newest version of Adobe Reader (version XI). If you’d like to download this version, go to: <http://www.get.adobe.com/reader/>
  - Adobe Reader Tips: Access the markup tools panel from “View” > “Comment” > “Drawing Markups.” The “undo” command is in the “Edit” menu.
- Mark on the map any known DSL or Cable service areas not already identified as having service.
  - Circle or highlight any roads with homes or businesses that have access to DSL. Make sure the start and end of service are clearly marked.
  - Paint Tips: Choose the “brush” tool (  or  ) from the tool box or Home tab; select a brush size (recommend the default, mid-weight); select a bright color (recommend blue) from the color box or menu.
  - Adobe Reader Tips: Choose the “connected line” or “pencil” (   ) tool (double-click to end a connected line). If needed, right click a markup to delete.
- If an area is incorrectly identified as having DSL or cable service, cross out the service area along the roads or portions of roads that do not have service.
  - Mark “X”s from the start to the end of the incorrect section.
  - Paint Tips: Choose the “brush” tool; select a bright color (recommend red).
  - Adobe Reader Tips: Choose the “pencil” tool.
- If you have additional information regarding service areas, such as the street address that service is last known to be available, please note that information in an email or separate document.
  - Number locations on the map that reference comments for the same number in an email or separate document. If necessary draw a line from the number to the point of interest to avoid covering up features on the map.

- Paint Tips: Choose “text”(  ), from the tool box or Home tab; select the color red; select area on map for comment; in newer versions – under the new text choose “opaque” (  Opaque ); designate a number.
- Adobe Reader Tips: Choose the “callout tool” (  ); select the location of interest; move the mouse to create a callout box in an open area; finalize placement with a second mouse click; designate a number; callout may be moved or resized at any time.
- Any additional comments about DSL or cable service in the community are welcome. For example, it is helpful to note if DSL service is not available to new customers because the DSL equipment is operating at maximum capacity. Note areas of the community that you are uncertain about.
- There may be RT locations that are missing from the DSL map. If you know of a RT location, please mark the location on the map and provide the nearest address or street intersection in an email or separate document. Please refer to the photos below for examples of what RTs look like.
  - Type the letters RT on the map where an RT is located and reference the RT when providing additional information in an email or separate document. Number the RTs if there is more than one.
  - Paint Tips: Use the “brush” tool to draw a red point at known RT location; use the “text” tool to place the letters “RT” next to it.
  - Adobe Reader Tips: Create a callout box (see notes above); place tip of arrow at known RT location; type “RT” into the box.
- If there are no edits to the map, please indicate this in an email.
- Save the edited map document and return per instructions in the cover letter.

**EXAMPLES OF MARKED UP MAPS**

In Paint



In Adobe Reader

