



CLOUGH HARBOUR & ASSOCIATES LLP

September 29, 2006

Mr. Michael McFadden  
MCF Communications, Inc.  
733 Turnpike Street, Suite 105  
North Andover, MA 01845

**RE: Visual Methodology**  
**Site: MCF Bolton**  
**Carpenter Road**  
**Bolton, CT 06043**  
**CHA # 14957-1002-1601**

Dear Mr. McFadden:

Clough Harbour & Associates LLP (CHA) conducted a visibility study for the proposed 130'-0" monopole located at Carpenter Road, Bolton, CT. The purpose of the study was to determine the visual impact, if any, that a proposed 130'-0" monopole would have on the surrounding community. The first portion of the study involved developing a computer model to estimate how the surrounding topography and vegetation within a 2 mile radius may obstruct the monopole's visibility. USGS topography maps were utilized to determine the ground elevations within the study area and 2004 aerial photographs were utilized to estimate the approximate limits of vegetation. The limits of vegetation were incorporated on the topography map and assumed to be 65' in height. The ground elevation at the base of the tower was determined from a 2C survey. The computer model developed hatched areas on the map indicating areas of potential visibility based on the surrounding topography, vegetation, and tower height.

Next, research of the surrounding study area was conducted to determine the locations of sensitive visual receptors such as historic sites, historic districts, schools, churches, cemeteries, parks, playgrounds, recreational areas, beaches, and scenic roads. Historic sites and districts were determined from national and state registers. Surrounding schools, churches, cemeteries, parks, playgrounds, recreational areas, and beaches were determined from street maps and town GIS data. Scenic roads were determined from the CTDOT list of designated scenic roads. All of the above sensitive visual receptors were added to the viewshed map.

To further investigate the potential visibility prior to completing the field analysis, sight lines were generated from USGS topography maps. Eight sight lines were produced showing the visibility along a two mile radius from the proposed monopole. A sight line was produced from all directions. The sight lines supplement the computer generated viewshed map by further illustrating how the topography and trees around the site will affect the monopole's visibility within the two mile study area.

On March 24, 2006 a field visual analysis was conducted to verify the sensitive visual receptors and the limit of visibility determined from our research and computer model. Weather conditions were favorable on the date of the visibility study as it was a clear and sunny day with winds between 5 and 10 MPH; therefore, visibility of the balloon from surrounding areas was not affected. In general, the field visibility study was conducted as follows: A 60" diameter red balloon was flown at a height of 150'-0" above existing grade, which was the tower height at the time of the field study and later on changed to 130'-0". Once the balloon was flown, CHA completed a field drive of the surrounding area to determine the visibility of the balloon, and thus the proposed

tower. Visibility from the sensitive visual receptors was our primary focus so photos were taken from each of these locations. Photos were also taken from major streets, intersections, and residential areas; from key areas where the balloon was visible; and from key areas where it was not visible. The limits of visibility determined from the computer model were field verified and adjusted as needed. Areas of potential seasonal visibility were field determined and marked on the viewshed map. Finally, the number of residences within the seasonal and year round visible areas was determined.

In conclusion, the year round visual impact to the surrounding community within a two mile radius is limited to the red hatched areas on the viewshed map. The year round visual impact limit is approximately 0.5%, or 37 Acres, of the total study area. The limit of year round visibility includes the area surrounding the following public streets: a 500' stretch along Carpenter Road, and a 1,300' stretch along I-384. The area with year round visibility will impact the following number of residences: 3 residences along Carpenter Road. The proposed monopole will not be seen year round from any of the sensitive visual receptors listed on the viewshed map. Immediately outside some of the limits of year round visibility, trees start to screen the proposed monopole giving the potential for seasonal views. The blue hatched areas on the viewshed map indicate the areas of potential seasonal visual impact, which is approximately 1%, or 88 acres, of the total study area. The limit of seasonal visibility includes the area surrounding the following public streets: an 800' stretch along Carpenter Road, an 800' stretch along Riga Lane, a 2,500' stretch along Bolton Center Road, an 800' stretch along Iroquois Trail, a 300' stretch along Williams Road, and an 850' stretch along I-384. The area with seasonal visibility will impact the following number of residences: 7 residences along Riga Lane, 4 residences along Iroquois Trail, 4 residences along Bolton Center Road, 3 residences along Carpenter Road, and 2 residences along Williams Road. The proposed monopole will be seen seasonally from three of the sensitive visual receptors listed on the viewshed map: a 1761 home located at 12 Carpenter Road, an 1802 cape located at 55 Bolton Center Road, and a 1780-1820 home located at 60 Bolton Center Road. The remainder of the two mile radius study area is screened by topography (3,856 Acres, 48%), vegetation (3,789 Acres, 47.5%), and buildings (283 Acres, 3%). Photos documenting the nonvisible and visible conditions described above have been included in the photo-simulations with their locations marked on the viewshed map.

If you have any questions or comments pertaining to the manner in which CHA completed the visibility study, or our conclusions, please do not hesitate to contact our office.