We have recently shown that a ‘sphere+disk’ geometry Compton corona model provides a good description of Rossi X-ray Timing Explorer (RXTE) observations of the hard/low state of Cygnus X–1. Separately, we have analyzed the temporal data provided by RXTE. In this paper we consider the implications of this timing analysis for our best-fit ‘sphere+disk’ Comptonization models. We focus our attention on the observed Fourier frequency-dependent time delays between hard and soft photons. We consider whether the observed time delays are: created in the disk but are merely reprocessed by the corona; created by differences between the hard and soft photon diffusion times in coronae with extremely large radii; or are due to ‘propagation’ of disturbances through the corona. We find that the time delays are most likely created directly within the corona; however, it is currently uncertain which specific model is the most likely explanation. Models that posit a large coronal radius [or equivalently, a large Advection Dominated Accretion Flow (ADAF) region] do not fully address all the details of the observed spectrum. The Compton corona models that do address the full spectrum do not contain dynamical information. We show, however, that simple phenomenological propagation models for the observed time delays for these latter models imply extremely slow characteristic propagation speeds within the coronal region.