21. Electric and Magnetic Fields

21.1. Chapter Overview

21.1.1. Introduction

This chapter discusses the changes to the evaluation of electric and magnetic fields (EMFs) resulting from the modification of the Preferred Alternative as presented in the Northern Branch DEIS. While several elements of the original Preferred Alternative were refined or adjusted, not all changes affect the assessment of electric and magnetic fields. Specifically, the following revisions apply to this re-analysis:

- Change in project terminus: the revised Preferred Alternative terminates at the Englewood Hospital and Medical Center Station as opposed to a terminal station at the Tenafly-Cresskill border as proposed in the DEIS.

One comment was received on the DEIS on the subject of EMF, pertaining to health concerns over exposure to electromagnetic fields. This information was discussed in the DEIS. This reanalysis therefore addresses only the changes to the SDEIS Preferred Alternative.

21.1.2. Summary of Findings of the DEIS and the SDEIS

The Preferred Alternative is not anticipated to exceed suggested acceptable International Commission on Non-Ionizing Radiation Protection (ICNIRP) and American Conference of Governmental Industrial Hygienists (ACGIH) exposure thresholds within rail vehicles or at wayside and platform locations. As such, it can be reasonably concluded that EMF exposure levels from the proposed project would pose no additional health risk for Northern Branch passenger rail users or study area residents living in the vicinity of the rail right-of-way.

21.2. Methodology

The methodology for this assessment is the same as described in the DEIS and involved a review of EMF exposure thresholds and standards as well as recent relevant studies associated with EMF exposure.

21.3. Environmental Review

21.3.1. Existing Conditions

There are no changes to the Existing Conditions as compared with the DEIS.

21.3.2. Potential Impacts and Mitigation

21.3.2.1. *No Build Alternative*

There are no changes to the impacts associated with the No Build Alternative as compared with the DEIS.

21.3.2.2. *Preferred Alternative*

Impacts – The change in the terminus of the Preferred Alternative would eliminate overhead catenary and electrical traction power substations north of the border of Englewood and Tenafly. The removal of these project elements eliminates the potential for EMFs associated with the revised Preferred Alternative north of Englewood.

Mitigation – No significant EMF impacts are foreseen, and no mitigation is warranted.

21.4. Summary of Potential Environmental Effects of the DEIS and the SDEIS

Although no dose-effect cancer risk from EMF exposure has been proven, exposure standards have been developed by professional organizations for other health purposes. Data on EMF exposure levels for the closest comparable catenary powered transit system to have undergone detailed EMF exposure analysis indicate electric and magnetic field strengths below suggested exposure levels, both within rail vehicles and at wayside and platform locations. Therefore, it can be reasonably concluded that EMF exposure levels from the proposed project would pose no additional health risk for Northern Branch passenger rail users or study area residents living proximate to the rail alignment. The relocated oil-static electric transmission line would be placed in a concrete conduit as a matter of standard procedure, and as a result, adjacent uses would be shielded from the EMF produced by the line.