

## 6 Potentially Affected Populations

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The population along the rail routes and around the rail yards and intermodal facilities directly affect the risk; thus, the population was evaluated as part of the QRA. A commercially available mapping tool, ArcGIS (ArcMap v10.2.1), along with commercially available census and rail databases, were used to estimate the nearby populations for the Hialeah Yard, Port Everglades, Port of Miami, Bowden Yard, and the FECR mainline rail and lead tracks to both Port Everglades and Port of Miami. By using ArcGIS, 2010 U.S. census data,<sup>54</sup> 2012 railroads geographic data,<sup>55</sup> and satellite imagery for the state of Florida, a multilayered GIS map was generated. The rail map layer was then filtered to exclude all non-FECR<sup>56</sup> railroads and census data was filtered to exclude all census blocks that did not intersect an area of 1.6 miles (2500 m) on either side of the FECR rail line.

### 6.1 Hialeah Yard Populations

Analysis of the Hialeah Yard's surrounding population was accomplished by defining the Hialeah Yard track in GIS rail map layer and excluding all other rail lines. Subsequently, a query of the census layer data was run to identify only the relevant census blocks that were within 1.6 miles (2500 m) of the specified yard track. The results of this map query identified 1,105 census blocks that were within 1.6 miles (2500 m) to either side of the approximate location of the yard line track. Finally, using geographical markers, such as highways and major roads, the resulting census map was grouped into four consolidated census blocks.

The population densities of the four larger consolidated census blocks represent an average population density for all of the census blocks contained within each. The consolidated census block population densities were directly used in the QRA analysis. An aerial view of the Hialeah Yard and four consolidated census blocks is depicted in Figure 36. A table of the population densities of the four consolidated census block is provided in Table 35.

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<sup>54</sup> Florida Geographic Data Library (FGDL) <http://www.fgdl.org>, March 11, 2010.

<sup>55</sup> Florida Geographic Data Library (FGDL) <http://www.fgdl.org>, 2012.

<sup>56</sup> As labeled in the FGDL 2012 railroad shapefile.