

Effects of Conservation Measures on Motor Vehicle Mortality

The following steps were used to determine the reduced number of mortalities expected in the Action Area due to non-HCP generated traffic once the crossings are considered.

(A) Current Panther Mortality on High Mortality Road Segments

We looked at the current road segments and included any road segments that had panther road mortality from 2014 through 2018. We selected the 8 segments with the highest panther mortality to estimate the reduction in mortality from HCP-generated traffic increases if the 8 wildlife crossing the Applicants' funding is expected to facilitate are constructed at either these locations or similarly high mortality road segments in the future. The high mortality road segments with associated panther mortality are found in Table 5-9. Combined, a total of 22 panther mortalities have occurred on these road segments over a 5-year period and mortalities range from .4 to 1 per year on individual road segments.

(B) Current AADT on High Mortality Road Segments

These AADTs are found in Appendix A Table 10a in rows 1 and 3 through 9.

(C) 2070 AADT on High Mortality Road Segment from non-HCP generated Traffic

The 2070 AADTs on High Mortality Road Segment from non-HCP generated traffic was calculated using the Adjusted DIRPM Model and can be found in Appendix A. We calculated the 2070 AADT for all road segments in step 4 above, and the high mortality segments are identified in the appendix by the road segment identifier. The road segment identifier is the concatenated key used in the FDOT traffic model that serves as the bi-directional road segment identifier. Only those segments with a history of panther mortality were used for calculating future mortality because the equation for calculating future mortality includes a measure of current mortality. We assumed road segments with existing mortality contained all of the features that would contribute to future mortality, such as the presence of habitat and panthers adjacent to areas of current panther-vehicle collision.

(D) Future non-HCP Mortality on High Mortality Road Segments

We estimate the predicted proportion of future panther mortality due to non-HCP generated traffic on each road segment with a history of high panther mortality using the following formula:

Future non-HCP Mortality on High Mortality Road Segments = (Current Panther Mortality on High Mortality Road Segments / Current AADT on High Mortality Road Segment) x 2070 AADT on High Mortality Road Segment from non-HCP generated Traffic.

Future non-HCP mortality on high mortality Road Segments ranges from 0.4 to 8, and can be found in Appendix A. These segments are identified in the appendix by the road segment identifier.

(E) Future non-HCP Mortality Reduction on High Mortality Road Segments

To estimate the amount of mortality that is predicted to be reduced along each high mortality road segment when the conservation measure is implemented we assumed 1 crossing with fencing in each location would reduce mortality by 80 percent (See section 5.2.2.4 for method used to determine 80 percent reduction per crossing) at that location. The following equation was used to determine the reduction at each high mortality road segment:

HCP Mortality Reduction on High Mortality Road Segment = Future HCP Mortality on High Mortality Road Segments x 0.80

The reduction per high mortality road segment is listed in Table 5-9, and in the Appendix.

(F) Future non-HCP Mortality Reduction due to HCP Conservation Measure

To estimate the total reduction in non-HCP mortality after the conservation measure is considered we totaled the reduction in non-HCP mortality at each high mortality road segment. The total reduction in panther mortality expected due to implementation of the 8 wildlife crossings is 4 fewer mortalities per year in the Action Area.

(G) Future Reduced non-HCP Mortality in the Action Area

To estimate total predicted proportion of future panther mortality due to non-HCP generated traffic after implementation of the minimization measure we used the following formula:

Future Reduced non-HCP Mortality in the Action Area = Future non-HCP Mortality in the Action Area – Future non-HCP Mortality Reduction due to HCP Conservation Measure