

Abstract: Petroleum products are transported daily through pipelines and railways. However, recent accidents have caused both of these modes of transport to come under heavy scrutiny as these events have caused harm to human life, property and the environment. Research and media often focus on one mode of transport or the other, lauding each as the safer option for both humans and the environment. This presentation focuses on using geospatial tools to assess the locations of these occurrences and their proximity to water bodies and ecologically significant areas to determine which mode of transport has the greater potential to impact sensitive areas of the environment. Using geospatial tools in ArcGIS Pro, the distances between pipeline and rail occurrences and the sensitive areas were calculated. These values were then used to create a matrix that determined which mode of transport had less impact on the environment. Restricting the occurrence dataset to events that occurred between 2008 and 2020, the matrix indicates that pipelines are more hazardous to the environment, mainly due to their proximity to watercourses. However, if the entire rail occurrence dataset is used, railways are more hazardous to both watercourses and water bodies. Unfortunately the federal database for both occurrences is inadequate due to poor data reporting.