## Metadata Data Sources and Metadata

#### FBRMPO Crash Data

* Description: This dataset contains all FBRMPO Crashes from 2016 to 2023.

Sources Used:

* All North Carolina Crashes
	+ Description: This layer contains all North Carolina Crashes. These crashes were located based on a series of methods. First, they were located by latitude and longitude, if that was missing, it was located by milepost, if a crash was missing those, it was located by the native latitude and native longitude columns, if it did not have any of the prior fields, it was not locatable. This layer contains information about where, when, and how severe the crashes are.
	+ Obtained March 2024
	+ Pulled from NCDOT
* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)

####  FBRMPO BikePed Crashes

* Description: This dataset contains all FBRMPO Bike/Ped Crashes from 2014-2023.

Sources Used:

* All NC Bicycle and Pedestrian Crashes
	+ Description: This layer contains located North Carolina bicycle and pedestrian crashes. It provides information such as when crashes happen (i.e month, day of the week, hour that the crash happened, etc…). This layer also contains information about the crash severity, where the crash happened, and information on who was involved in the crash. For example, it has the driver age, sex, race, impairment, the severity of injury for a bicyclist or pedestrian involved in the crash, speed limit, whether traffic controls were present, and the locality of the crash.
	+ Obtained January 2024
* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)

####  FBRMPO HIN BikePed

* Description: This layer contains corridors of High Injury Network Segments (top 3% of segments with 2 or more injury crashes) created from a percentile rank of EPDO for bike/ped crashes.

Sources Used:

* All NC Bicycle and Pedestrian Crashes
	+ Description: This layer contains located North Carolina bicycle and pedestrian crashes. It provides information such as when crashes happen (i.e month, day of the week, hour that the crash happened, etc…). This layer also contains information about the crash severity, where the crash happened, and information on who was involved in the crash. For example, it has the driver age, sex, race, impairment, the severity of injury for a bicyclist or pedestrian involved in the crash, speed limit, whether traffic controls were present, and the locality of the crash.
	+ Obtained January 2024
* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)
* All North Carolina Routes
	+ Description: This layer contains information for all North Carolina routes. This layer was obtained from HSIS 2021.
	+ Obtained March 2024
* All Inventory North Carolina Routes
	+ Description: This layer contains all inventory routes from North Carolina. It was obtained from HSIS 2021.
	+ Obtained March 2024

####  FBRMPO HIN Corridor Top3pct

* Description: This layer contains all corridors created from the top 3 percent of crashes based on EPDO percentile ranking.

Sources Used:

* All North Carolina Crashes
	+ Description: This layer contains all North Carolina Crashes. These crashes were located based on a series of methods. First, they were located by latitude and longitude, if that was missing, it was located by milepost, if a crash was missing those, it was located by the native latitude and native longitude columns, if it did not have any of the prior fields, it was not locatable. This layer contains information about where, when, and how severe the crashes are.
	+ Obtained March 2024

Pulled from NCDOT

* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)
* All North Carolina Routes
	+ Description: This layer contains information for all North Carolina routes. This layer was obtained from HSIS 2021.
	+ Obtained March 2024
* All Inventory North Carolina Routes
	+ Description: This layer contains all inventory routes from North Carolina. It was obtained from HSIS 2021.
	+ Obtained March 2024

#### FBRMPO\_Intersections\_TotalTop1pct

* Description: This layer contains the top 1 percent of intersections based on all crash EPDO score.

Sources Used:

* North Carolina Intersections
	+ Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region.
	+ Obtained March 2024
	+ Pulled from NCDOT
* All North Carolina Crashes
	+ Description: This layer contains all North Carolina Crashes. These crashes were located based on a series of methods. First, they were located by latitude and longitude, if that was missing, it was located by milepost, if a crash was missing those, it was located by the native latitude and native longitude columns, if it did not have any of the prior fields, it was not locatable. This layer contains information about where, when, and how severe the crashes are.
	+ Obtained March 2024
	+ Pulled from NCDOT
* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)

####  FBRMPO\_Intersections\_VRUTop1pct

* Description: This layer contains the top 1 percent of intersections based on the BikePed crash EPDO score.

Sources Used:

* North Carolina Intersections
	+ Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region.
	+ Obtained March 2024
	+ Pulled from NCDOT
* All NC Bicycle and Pedestrian Crashes
	+ Description: This layer contains located North Carolina bicycle and pedestrian crashes. It provides information such as when crashes happen (i.e month, day of the week, hour that the crash happened, etc…). This layer also contains information about the crash severity, where the crash happened, and information on who was involved in the crash. For example, it has the driver age, sex, race, impairment, the severity of injury for a bicyclist or pedestrian involved in the crash, speed limit, whether traffic controls were present, and the locality of the crash.
	+ Obtained January 2024
* 2022 Standardized Crash Cost Estimates for North Carolina
	+ Description: This file contains a cost per crash type. To get the EPDO of a crash, VHB used the cost per crash in 2022 and determined the weight of Severe Injury Crashes(K+A), B injury crashes, C injury crashes, and Property Damage Only (PDO) Crashes. VHB took the total cost of each crash type and divided it by the cost of a PDO crash. This allowed VHB to weigh crashes based on severity.
	+ Obtained: [Microsoft Word - Crash Costs 2022\_20230602.docx](https://connect.ncdot.gov/resources/safety/Documents/Crash%20Data%20and%20Information/2022%20Crash%20Costs.pdf) Used values from (Table 1a)

####  FBRMPO\_Routes\_Likelihood

* Description: This layer contains a comprehensive route network in the FBRMPO region with connected attributes used to determine the likelihood that a crash would happen on each segment.

Sources Used:

* All North Carolina Routes
	+ Description: This layer contains information for all North Carolina routes. This layer was obtained from HSIS 2021.
	+ Obtained March 2024
* All Inventory North Carolina Routes
	+ Description: This layer contains all inventory routes from North Carolina. It was obtained from HSIS 2021.
	+ Obtained March 2024
* All North Carolina Crashes
	+ Description: This layer contains all North Carolina Crashes. These crashes were located based on a series of methods. First, they were located by latitude and longitude, if that was missing, it was located by milepost, if a crash was missing those, it was located by the native latitude and native longitude columns, if it did not have any of the prior fields, it was not locatable. This layer contains information about where, when, and how severe the crashes are.
	+ Obtained March 2024
* All NC Bicycle and Pedestrian Crashes
	+ Description: This layer contains located North Carolina bicycle and pedestrian crashes. It provides information such as when crashes happen (i.e month, day of the week, hour that the crash happened, etc…). This layer also contains information about the crash severity, where the crash happened, and information on who was involved in the crash. For example, it has the driver age, sex, race, impairment, the severity of injury for a bicyclist or pedestrian involved in the crash, speed limit, whether traffic controls were present, and the locality of the crash.
	+ Obtained January 2024
* North Carolina Transportation Disadvantage Index.
	+ Description: This layer contains North Carolina Transportation Disadvantage Index (TDI) scores derived from spatial statistical analysis of American Community Survey demographic data at the block group level.
	+ Obtained: 2024
	+ Pulled from: [TDI\_Polys\_New - Overview](https://www.arcgis.com/home/item.html?id=4261552363194d7eb022c29058ea8ac9)
* North Carolina Block Groups
	+ Description: This layer contains boundaries of North Carolina Block Groups for 2023.
	+ Obtained: October 2024
	Pulled from: [TIGER/Line® Shapefiles](https://www.census.gov/cgi-bin/geo/shapefiles/index.php)
* North Carolina Intersections
	+ Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region.
	+ Obtained March 2024 from NCDOT
* Pavement Condition
	+ Description: NCDOT Pavement condition poor, fair, or good.
	+ Obtained: 2024
	+ Pulled from: NCDOT ArcGIS Online
* Parcel Boundaries
	+ Description: All NC Parcels as part of NC One-Maps ongoing parcel update project. See link for additional info: https://www.nconemap.gov/pages/parcels
	+ Obtained: 2024
	+ Pulled from: NC\_OneMap
* All North Carolina Transit Stops
	+ Description: This layer contains the most up-to-date version of transit stops.
	+ Obtained: May 2024
	+ Pulled from the NCDOT Access in Appalachia project.
* NCDOT Trail Crossings
	+ Description: Existing trail crossings collected through HSIP.
	+ Obtained: 2023
	+ Pulled from: VHB- HSIP Trail Crossing Updates geodatabase
	+ Name in geodatabase: NCDOT\_trailCrossings
* Schools
	+ Description: Point shapefile of schools in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Colleges Universities
	+ Description: Point shapefile of Colleges and Universities in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Census Data Total Population
	+ Description: American Community Survey 2021 5 year estimates for population
	+ Obtained October 2024
	+ Pulled from: [TIGER/Line with Selected Demographic and Economic Data](https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-data.html#:~:text=These%20geodatabases%20bring%20together%20geography%20from)
* Total Jobs
	+ Description: Total Employment - total workers in a block group.
	+ Obtained: June 2024
	+ Pulled from: [Data - Longitudinal Employer-Household Dynamics](https://lehd.ces.census.gov/data/)
* Social Vulnerability Index
	+ Description: 2022 Social Vulnerability Index. Created by the Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR)/ Geospatial Research, Analysis, and Services Program (GRASP).
	+ Obtained: 2024
	+ Pulled from: [CDC/ATSDR Social Vulnerability Index 2022 USA - Overview](https://www.arcgis.com/home/item.html?id=414c0b43a0ec4adc829d5815bc621750)
* All North Carolina Existing Sidewalks
	+ Description: This layer contains existing sidewalks
	+ Obtained: February 2024
	+ [Pedestrian and Bicycle Infrastructure Network (PBIN) | Connect NCDOT](https://connect.ncdot.gov/projects/BikePed/Pages/PBIN.aspx)

####  FBRMPO\_Intersections\_Likelihood

* Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region with connected attributes used to determine the likelihood that a crash would happen on each intersection.

Sources Used:

* North Carolina Intersections
	+ Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region.
	+ Obtained March 2024 from NCDOT
* North Carolina Transportation Disadvantage Index.
	+ Description: This layer contains North Carolina Transportation Disadvantage Index (TDI) scores derived from spatial statistical analysis of American Community Survey demographic data at the block group level.
	+ Obtained: 2024
	+ Pulled from: [TDI\_Polys\_New - Overview](https://www.arcgis.com/home/item.html?id=4261552363194d7eb022c29058ea8ac9)
* North Carolina Block Groups
	+ Description: This layer contains boundaries of North Carolina Block Groups for 2023.
	+ Obtained: October 2024
	Pulled from: [TIGER/Line® Shapefiles](https://www.census.gov/cgi-bin/geo/shapefiles/index.php)
* All North Carolina Transit Stops
	+ Description: This layer contains the most up-to-date version of transit stops.
	+ Obtained: May 2024
	+ Pulled from [\\vhb.com\gis\proj\Charlotte\39260.04 NCDOT-AccessAppalachia\Data\Transportation\Statewide Transit Stops\StatewideTransitStops.shp](file:///%5C%5Cvhb.com%5Cgis%5Cproj%5CCharlotte%5C39260.04%20NCDOT-AccessAppalachia%5CData%5CTransportation%5CStatewide%20Transit%20Stops%5CStatewideTransitStops.shp)
* NCDOT Trail Crossings
	+ Description: Existing trail crossings collected through HSIP.
	+ Obtained: 2023
	+ Pulled from: VHB- HSIP Trail Crossing Updates geodatabase
	+ Name in geodatabase: NCDOT\_trailCrossings
* Schools
	+ Description: Point shapefile of schools in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Colleges Universities
	+ Description: Point shapefile of Colleges and Universities in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Census Data Total Population
	+ Description: American Community Survey 2021 5-year estimates for population
	+ Obtained October 2024
	+ Pulled from: [TIGER/Line with Selected Demographic and Economic Data](https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-data.html#:~:text=These%20geodatabases%20bring%20together%20geography%20from)
* Total Jobs
	+ Description: Total Employment - total workers in a block group.
	+ Obtained: June 2024
	+ Pulled from: [Data - Longitudinal Employer-Household Dynamics](https://lehd.ces.census.gov/data/)
* Social Vulnerability Index
	+ Description: 2022 Social Vulnerability Index. Created by the Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR)/ Geospatial Research, Analysis, and Services Program (GRASP).
	+ Obtained: 2024
	+ Pulled from: [CDC/ATSDR Social Vulnerability Index 2022 USA - Overview](https://www.arcgis.com/home/item.html?id=414c0b43a0ec4adc829d5815bc621750)

####  FBRMPO\_Routes\_Exposure

* Description: This layer contains information of FBRMPO Routes that have a varying volumes of vehicle traffic on a segment.

Sources Used:

* All North Carolina Routes
	+ Description: This layer contains information for all North Carolina routes. This layer was obtained from HSIS 2021.
	+ Obtained March 2024
* All Inventory North Carolina Routes
	+ Description: This layer contains all inventory routes from North Carolina. It was obtained from HSIS 2021.
	+ Obtained March 2024
* All North Carolina Crashes
	+ Description: This layer contains all North Carolina Crashes. These crashes were located based on a series of methods. First, they were located by latitude and longitude, if that was missing, it was located by milepost, if a crash was missing those, it was located by the native latitude and native longitude columns, if it did not have any of the prior fields, it was not locatable. This layer contains information about where, when, and how severe the crashes are.
	+ Obtained March 2024 from NCDOT
* All NC Bicycle and Pedestrian Crashes
	+ Description: This layer contains located North Carolina bicycle and pedestrian crashes. It provides information such as when crashes happen (i.e month, day of the week, hour that the crash happened, etc…). This layer also contains information about the crash severity, where the crash happened, and information on who was involved in the crash. For example, it has the driver age, sex, race, impairment, the severity of injury for a bicyclist or pedestrian involved in the crash, speed limit, whether traffic controls were present, and the locality of the crash.
	+ Obtained January 2024
* North Carolina Transportation Disadvantage Index.
	+ Description: This layer contains North Carolina Transportation Disadvantage Index (TDI) scores derived from spatial statistical analysis of American Community Survey demographic data at the block group level.
	+ Obtained: 2024
	+ Pulled from: [TDI\_Polys\_New - Overview](https://www.arcgis.com/home/item.html?id=4261552363194d7eb022c29058ea8ac9)
* North Carolina Block Groups
	+ Description: This layer contains boundaries of North Carolina Block Groups for 2023.
	+ Obtained: October 2024
	Pulled from: [TIGER/Line® Shapefiles](https://www.census.gov/cgi-bin/geo/shapefiles/index.php)
* North Carolina Intersections
	+ Description: This layer contains a comprehensive inventory of intersections in the FBRMPO region.
	+ Obtained March 2024 from NCDOT
* Pavement Condition
	+ Description: NCDOT Pavement condition poor, fair, or good.
	+ Obtained: 2024
	+ Pulled from: NCDOT ArcGIS Online
* Parcel Boundaries
	+ Description: All NC Parcels as part of NC One-Maps ongoing parcel update project. See link for additional info: https://www.nconemap.gov/pages/parcels
	+ Obtained: 2024
	+ Pulled from: NC\_OneMap
* All North Carolina Transit Stops
	+ Description: This layer contains the most up-to-date version of transit stops.
	+ Obtained: May 2024
	+ Pulled from [NCDOT](file:///%5C%5Cvhb.com%5Cgis%5Cproj%5CCharlotte%5C39260.04%20NCDOT-AccessAppalachia%5CData%5CTransportation%5CStatewide%20Transit%20Stops%5CStatewideTransitStops.shp) Access in Appalachia project.
* NCDOT Trail Crossings
	+ Description: Existing trail crossings collected through HSIP.
	+ Obtained: 2023
	+ Pulled from: VHB- HSIP Trail Crossing Updates geodatabase
	+ Name in geodatabase: NCDOT\_trailCrossings
* Schools
	+ Description: Point shapefile of schools in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Colleges Universities
	+ Description: Point shapefile of Colleges and Universities in North Carolina.
	+ Obtained: 2024
	+ Pulled from: USGS
* Census Data Total Population
	+ Description: American Community Survey 2021 5 year estimates for population
	+ Obtained October 2024
	+ Pulled from: [TIGER/Line with Selected Demographic and Economic Data](https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-data.html#:~:text=These%20geodatabases%20bring%20together%20geography%20from)
* Total Jobs
	+ Description: Total Employment - total workers in a block group.
	+ Obtained: June 2024
	+ Pulled from: [Data - Longitudinal Employer-Household Dynamics](https://lehd.ces.census.gov/data/)
* Social Vulnerability Index
	+ Description: 2022 Social Vulnerability Index. Created by the Centers for Disease Control and Prevention (CDC)/Agency for Toxic Substances and Disease Registry (ATSDR)/ Geospatial Research, Analysis, and Services Program (GRASP).
	+ Obtained: 2024
	+ Pulled from: [CDC/ATSDR Social Vulnerability Index 2022 USA - Overview](https://www.arcgis.com/home/item.html?id=414c0b43a0ec4adc829d5815bc621750)
* All North Carolina Existing Sidewalks
	+ Description: This layer contains existing sidewalks
	+ Obtained: February 2024
	+ [Pedestrian and Bicycle Infrastructure Network (PBIN) | Connect NCDOT](https://connect.ncdot.gov/projects/BikePed/Pages/PBIN.aspx)

####  FBRMPO\_Routes\_Severity

* Description: The Speed layer is represented by a combination of available GPS probe and connected vehicle information. This data typically comes from two sources, the probe data being a 5-minute real time flow that is aggregated to a single roadway segment, this is designed to capture the average speed on that segment in 5 minute intervals. It can be a combination of real-world observations from GPS probe or connected vehicle first, with additional trend model data to help complete the missing values. This is represented with a confidence interval to show what is real world observation vs trend filled in. This layer contains information for FBRMPO Routes.

Sources Used:

* North Carolina Speed Data
	+ Description: This layer contains NC speed data
	+ Obtained 2024

 Pulled from: RITIS if licensed or from the data vendor INRIX