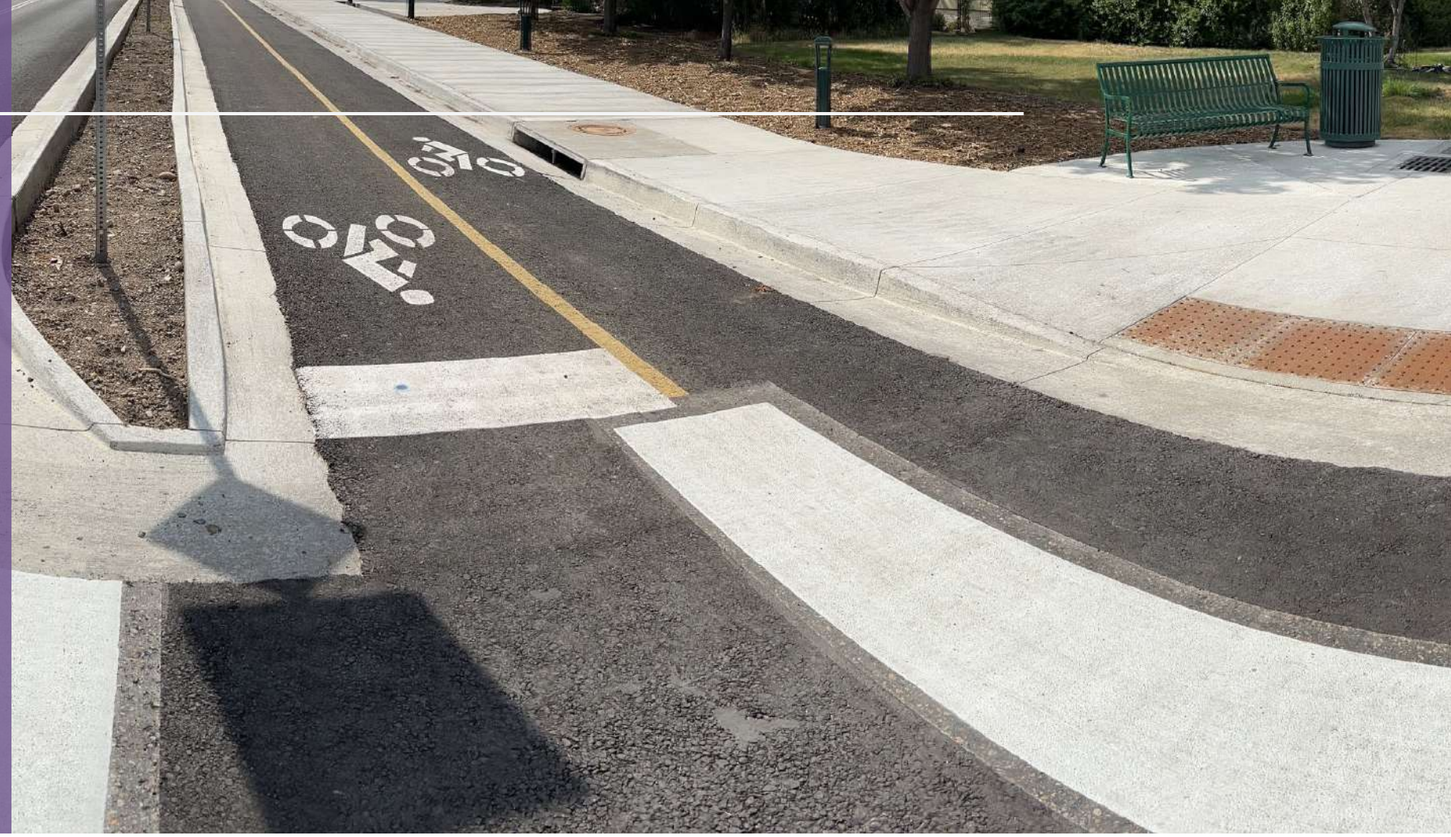
Maps and Baseline Data

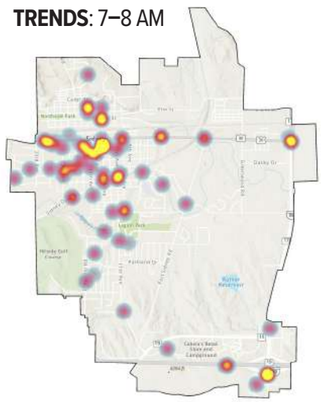


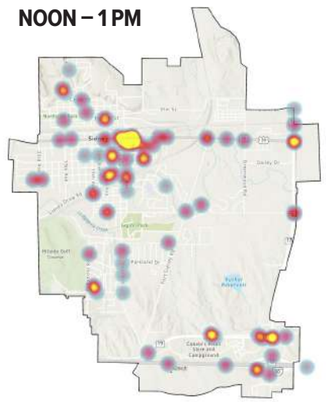
During the baseline data development and systemic crash analysis, various maps were created to help the planning consultant team and task force efficiently visualize transportation safety insights.

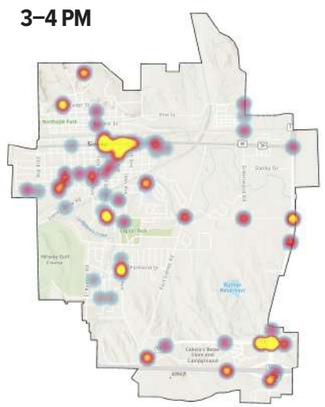
The **Maps and Baseline Data Appendix** provides a more detailed look at crash trends, hotspots, and high-incidence network analysis, allowing for a better understanding of collision patterns across Sidney. Additionally, maps highlighting public comment hotspots were developed to compare community concerns with actual crash locations, ensuring safety improvements aligned with community member feedback.

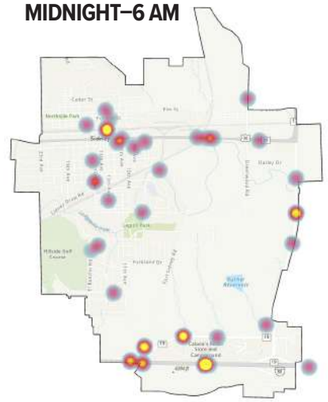
Many of these maps have been included in the map appendix for reference, offering a clear visual representation of identified safety issues. Baseline maps also captured street characteristics, including functional classification, street width, land use, demographics, roadway ownership, signage, the most recent Annual Average Daily Traffic (AADT) data, and speed limits. These visual tools played a crucial role in supporting data-driven decision-making and ensuring that both public concerns and documented crash patterns were thoroughly integrated into the safety action plan.

Crash Analysis and Roadway Safety Insights









Crash Trends Maps were developed to illustrate peak crash times and pinpoint where these incidents most frequently occur. These visual tools help identify high-risk periods and locations, providing valuable insight for targeted safety improvements.

Additional trend maps were developed to analyze crash patterns over time, including monthly breakdowns to identify seasonal variations in traffic incidents. These maps helped pinpoint trends such as weather-related impacts, fluctuations in roadway conditions, and high-risk periods for collisions.

Additionally, yearly hotspot maps were generated to highlight persistent crash locations across multiple years, allowing for a long-term assessment of safety concerns. These visual tools support data-driven decision-making, helping prioritize improvements and safety interventions based on historical crash data.

Data-Driven Crash Analysis and Roadway Safety Planning in ArcGIS Pro

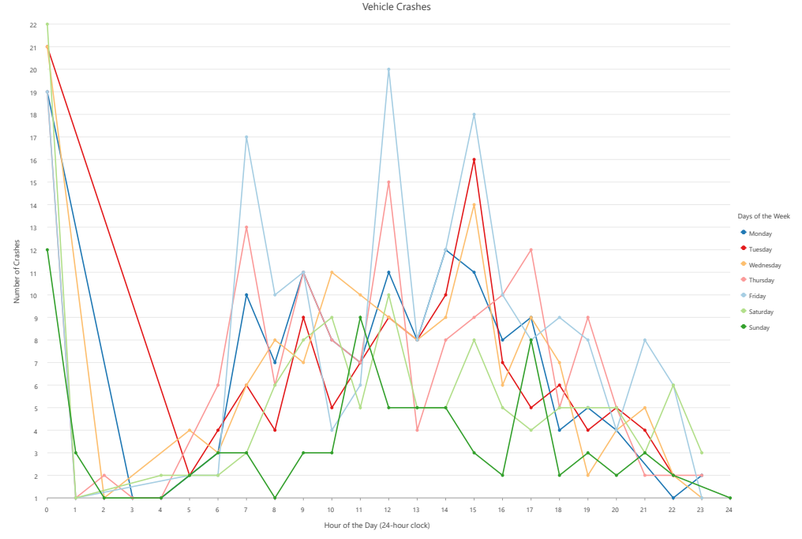
The consulting team performed ArcGIS Pro analysis beginning with crash data preparation, mapping incidents from NDOT databases while standardizing attributes and expanding details using police reports. Fields were calculated to categorize crashes by severity and contributing factors.

Next, the road network was structured for crash analysis, identifying high-risk roads through spatial processing techniques, including road segmentation, intersection mapping, and buffer zones to group roadway segments for detailed assessment.

A space-time pattern analysis was conducted, aggregating crashes over a 10-year period (2014-2023) using a space-time cube. Different grid and time step intervals were tested to identify hot spots of recurring crash activity. The emerging hot spot analysis categorized locations into patterns such as new, persistent, and sporadic crash zones, helping prioritize safety measures.

In the model, crashes were associated with roads, snapping incidents to the nearest roadway centerline and performing spatial joins to calculate crash rates per segment. Hot spot analyses for overall crashes, fatalities, and injuries identified statistically significant high-risk locations, emphasizing where targeted interventions are needed.

A comparison map and line chart analysis visualized peak crash times, highlighting dangerous periods based on hourly and daily trends. These insights support data-driven decision-making for enforcement strategies and transportation planning.

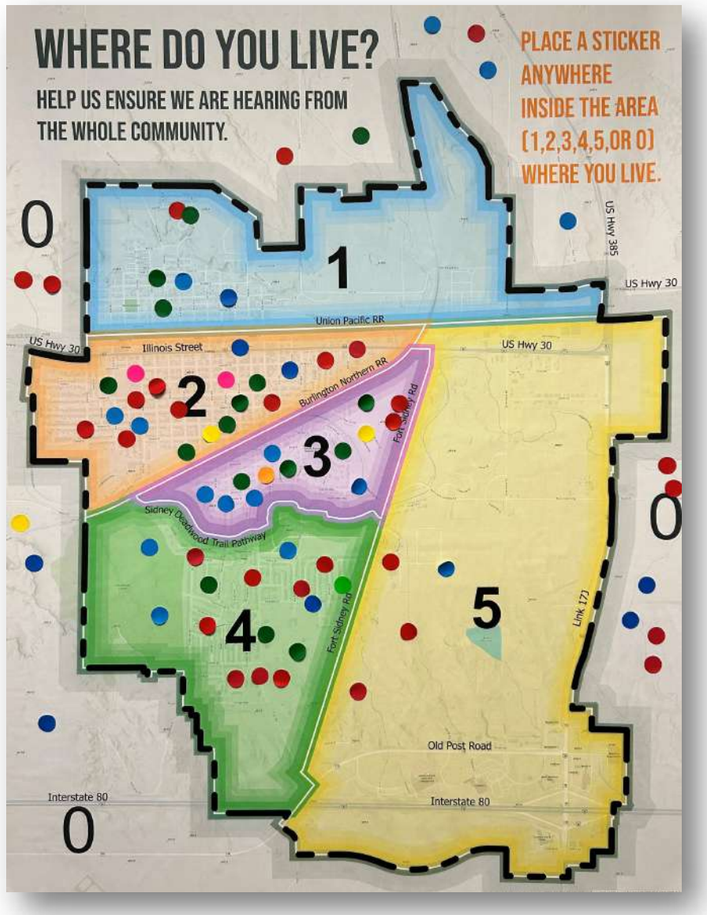


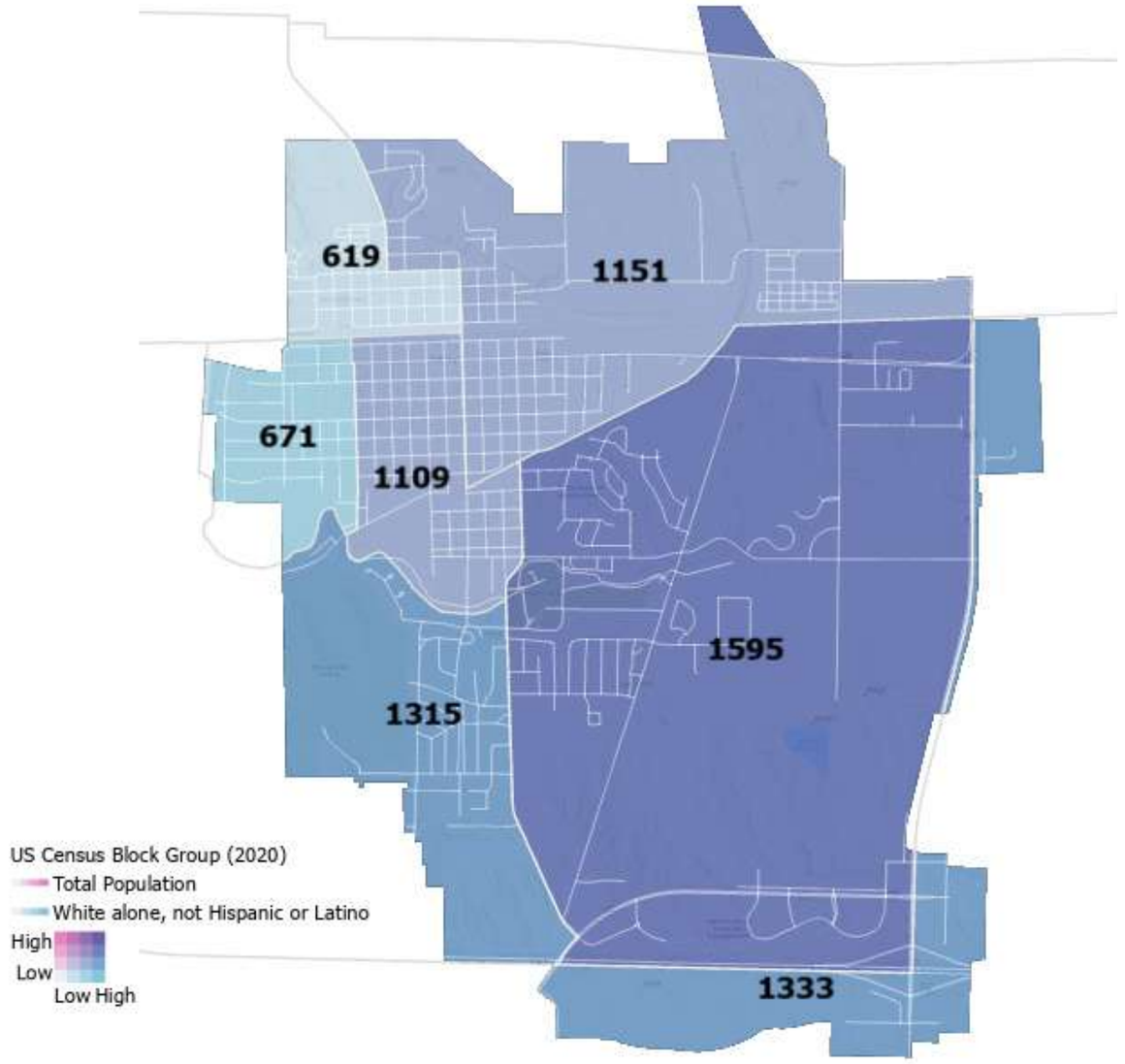
The consulting team's approach focused on identifying key roadway and environmental characteristics present in KSI (Killed or Seriously Injured) crashes, including traffic volume, lane width, shoulder conditions, speed limits, roadway curvature, land use, access points, crosswalk presence, and local demographics. By analyzing these factors, we were able to pinpoint locations within the roadway network that share similar characteristics, allowing for targeted safety interventions and proactive risk mitigation.

With the GIS crash model now in place—integrating all crashes, KSI incidents, the high-incidence network (HIN), and detailed street attributes such as width, speed, accesses, signage, and analysis bins—the city is positioned to strategically target specific locations and time periods for enforcement activities. This data-driven approach will enhance traffic safety initiatives, helping officials prioritize enforcement efforts where they can have the greatest impact.

Public Comments and Ethnicity

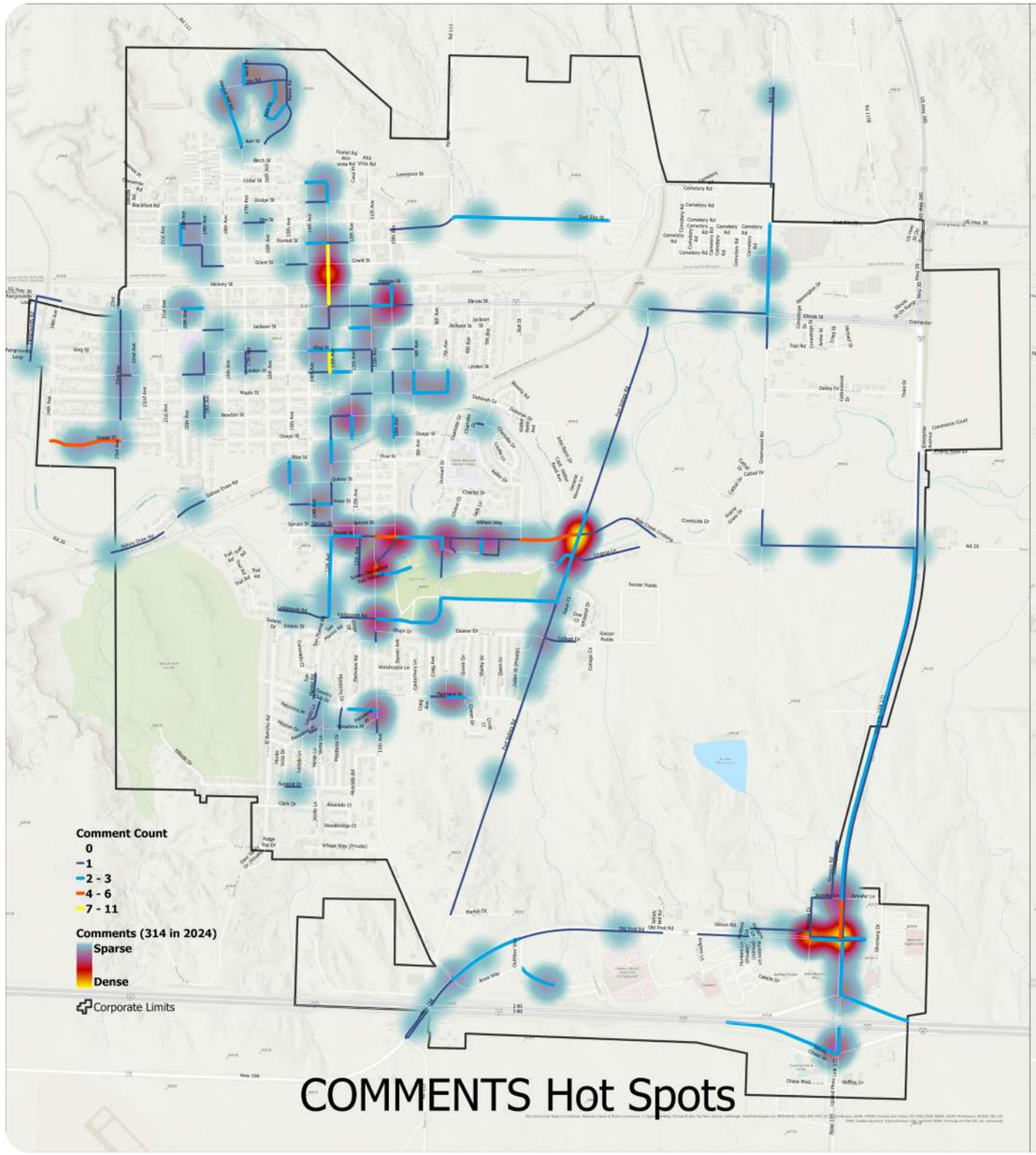
POPULATION ETHNICITY



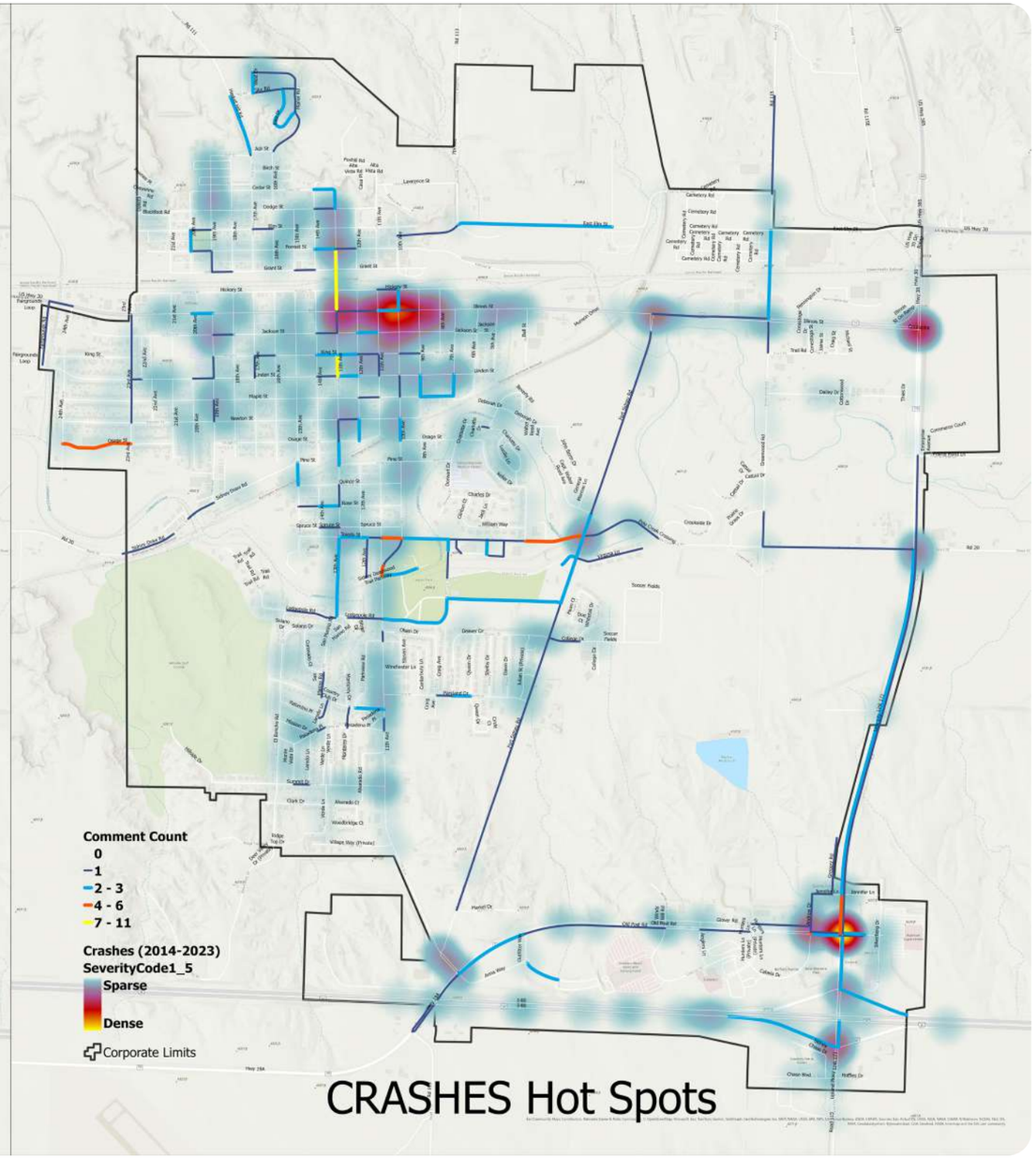


Esri, NASA, NGA, USGS, FEMA, Esri Community Maps Contributors, Nebraska Game & Parks Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Crash and Public Hot Spot Comparison



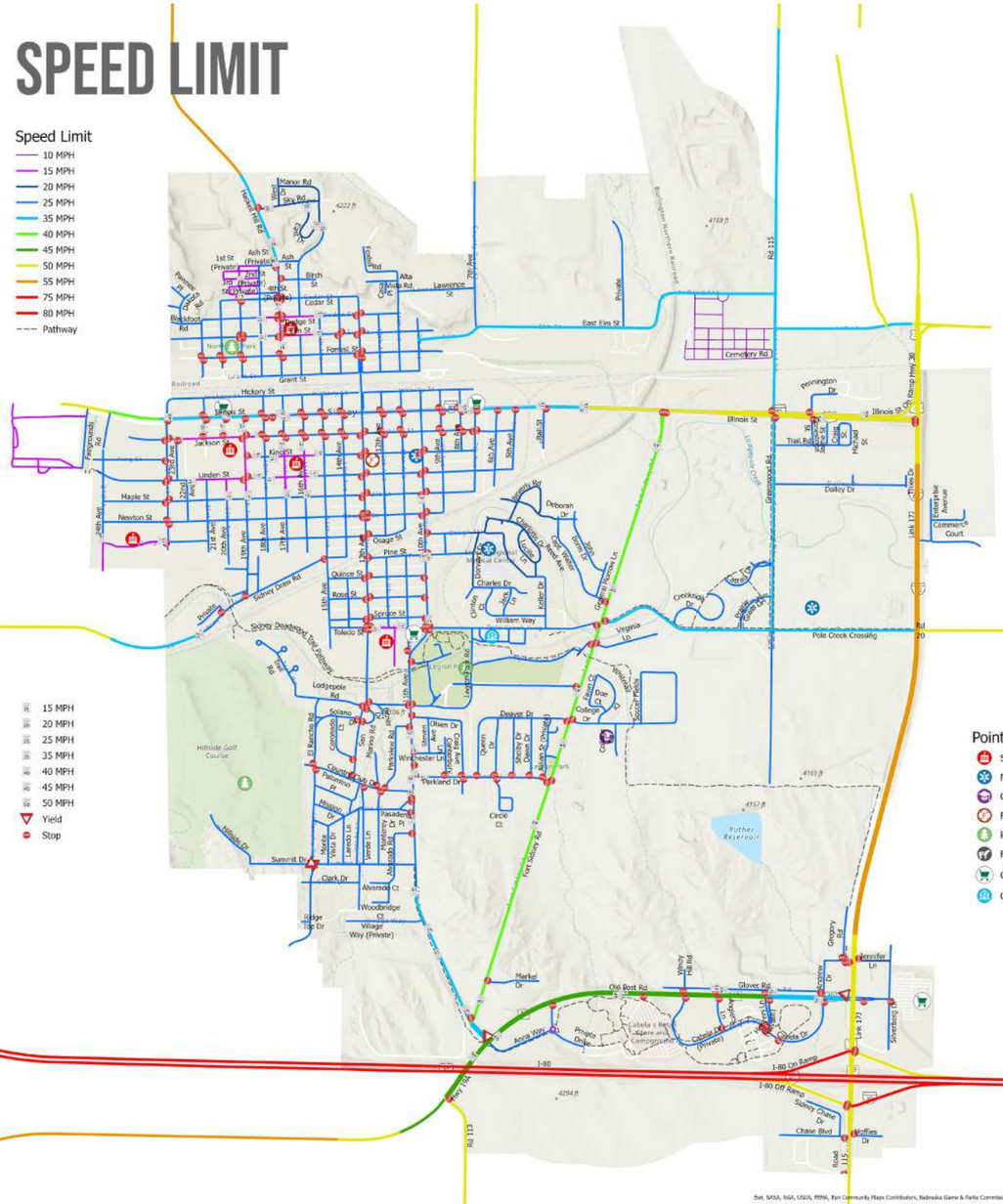
COMMENTS Hot Spots

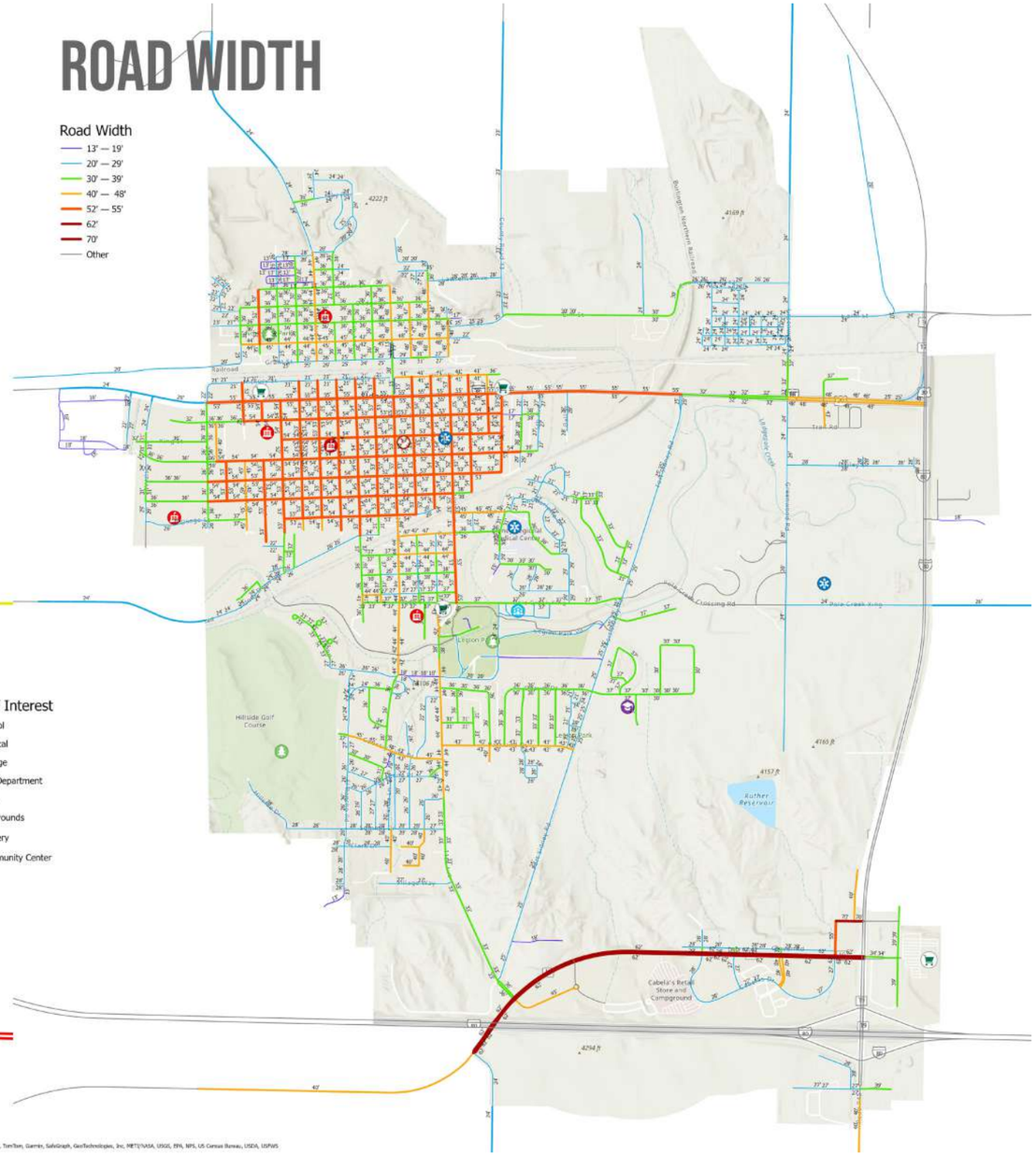


CRASHES Hot Spots

Speed Limits

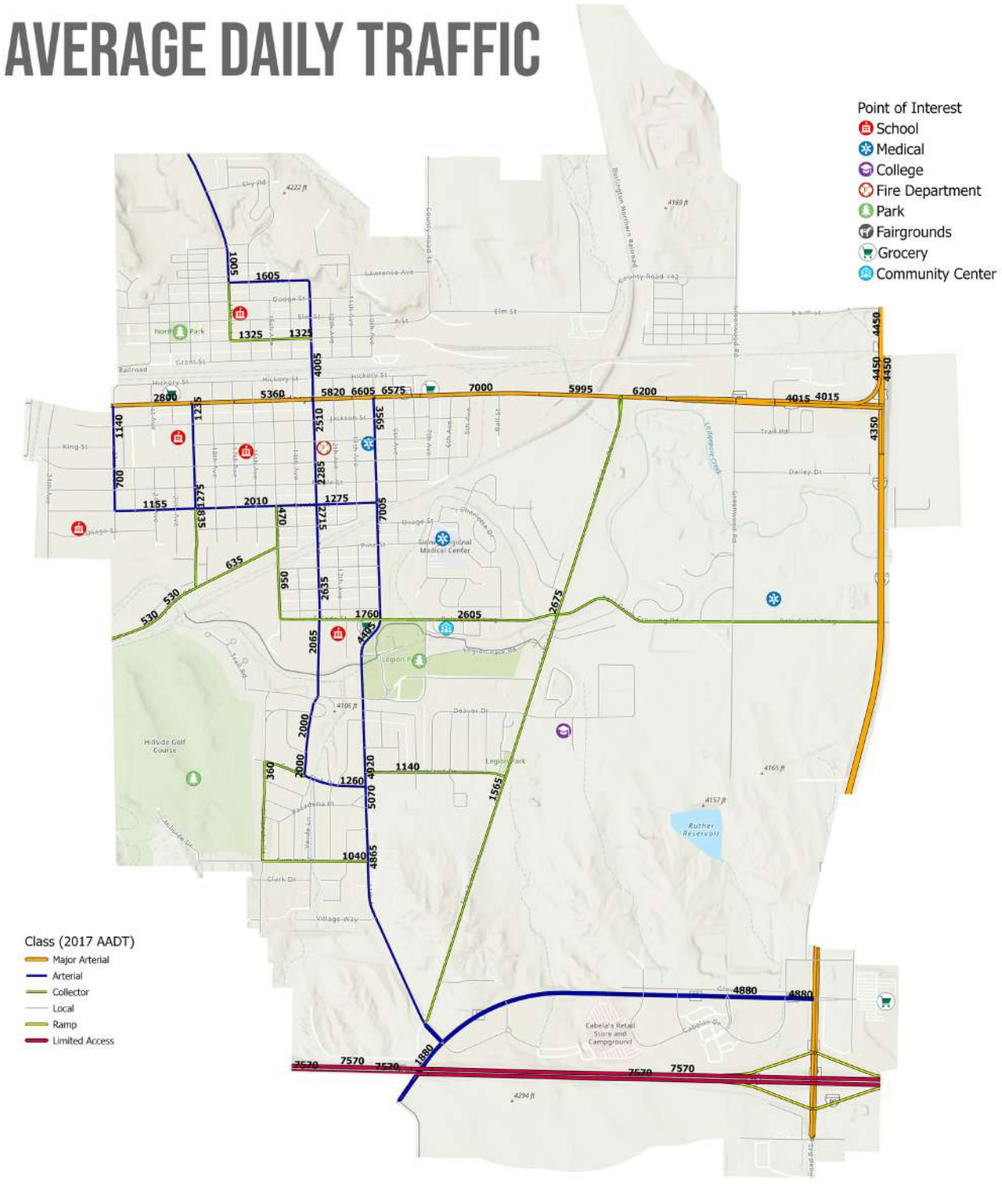
Road Width



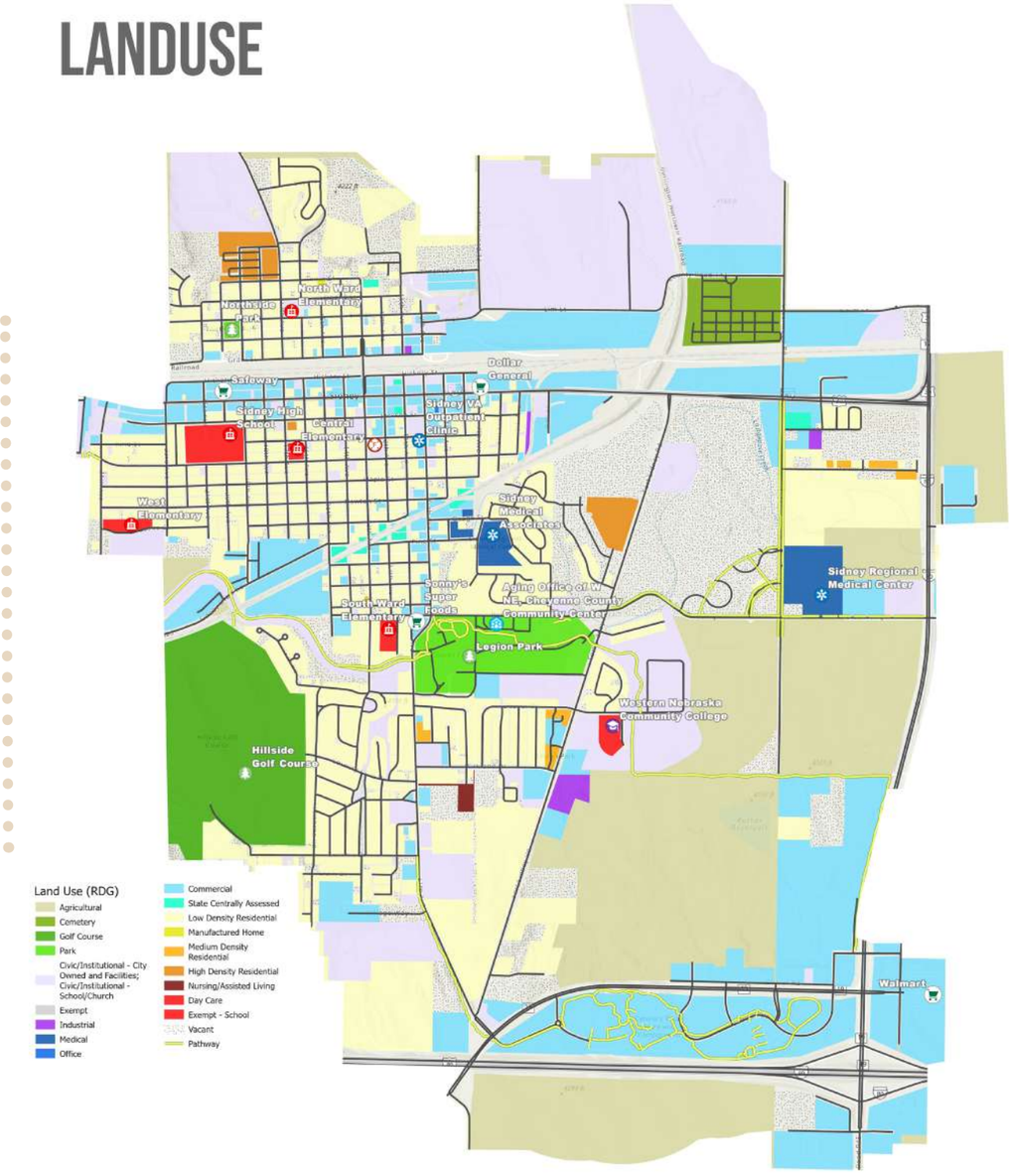


Average Daily Traffic Land Use

AVERAGE DAILY TRAFFIC



LANDUSE



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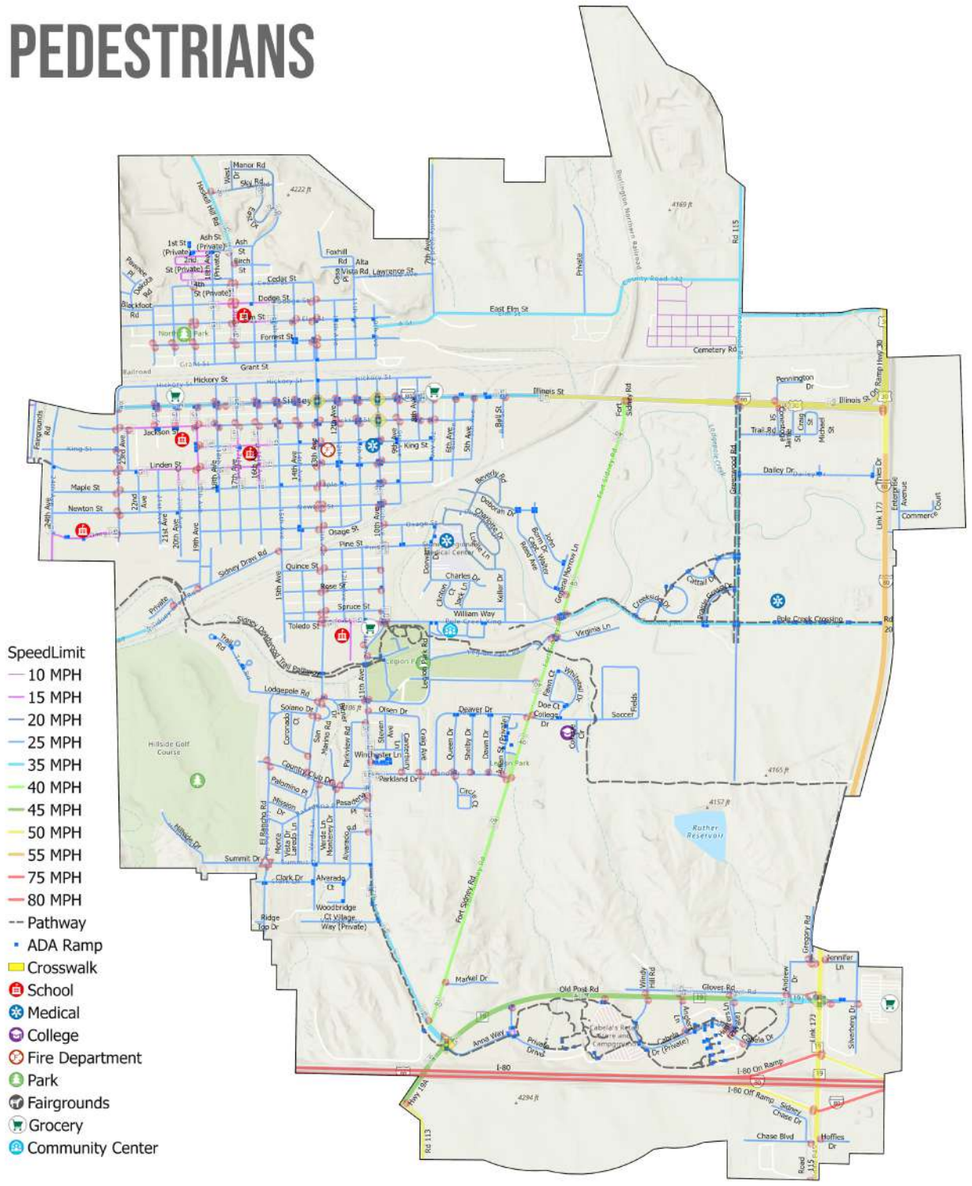
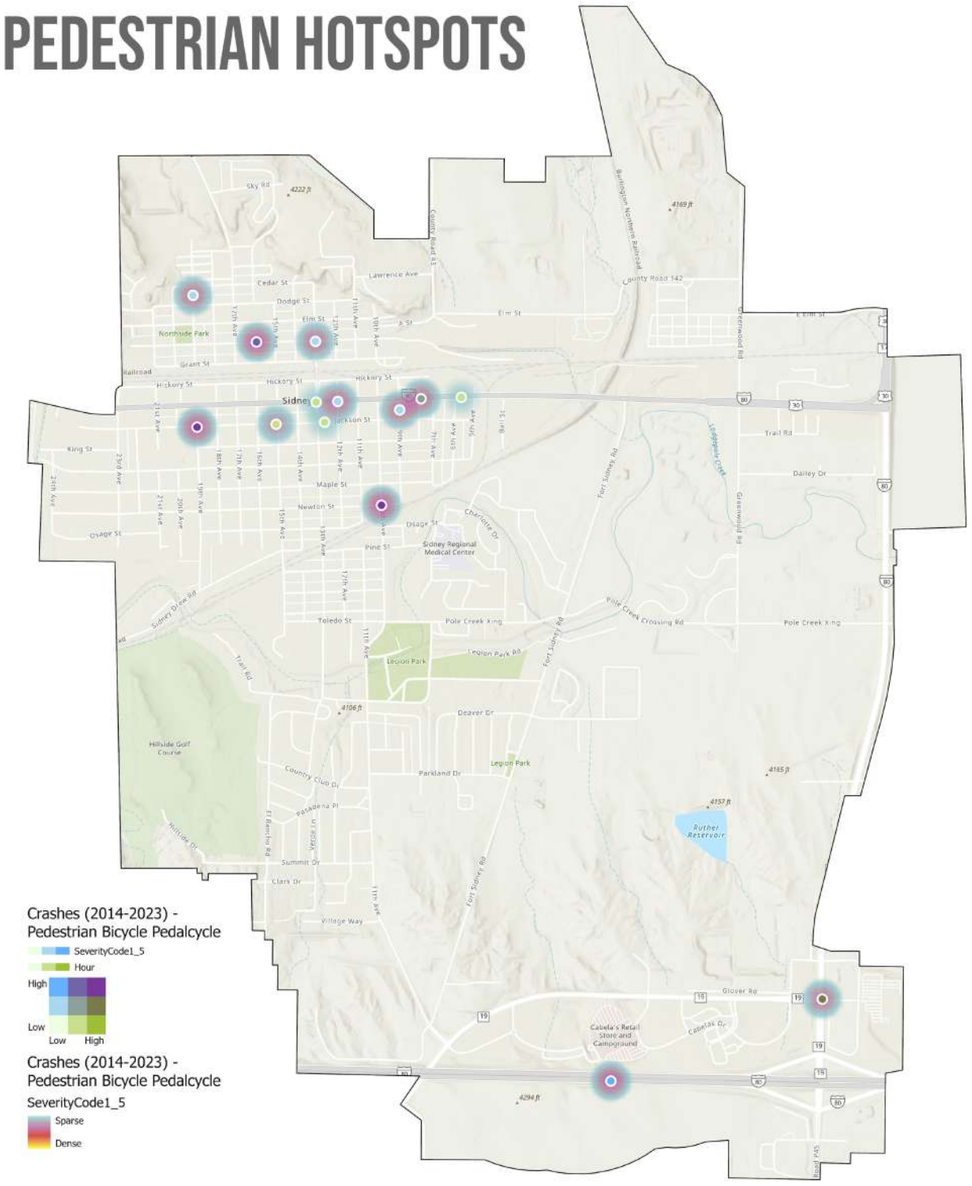
Points of Interest

PEDESTRIANS



Pedestrian Crashes

PEDESTRIAN HOTSPOTS



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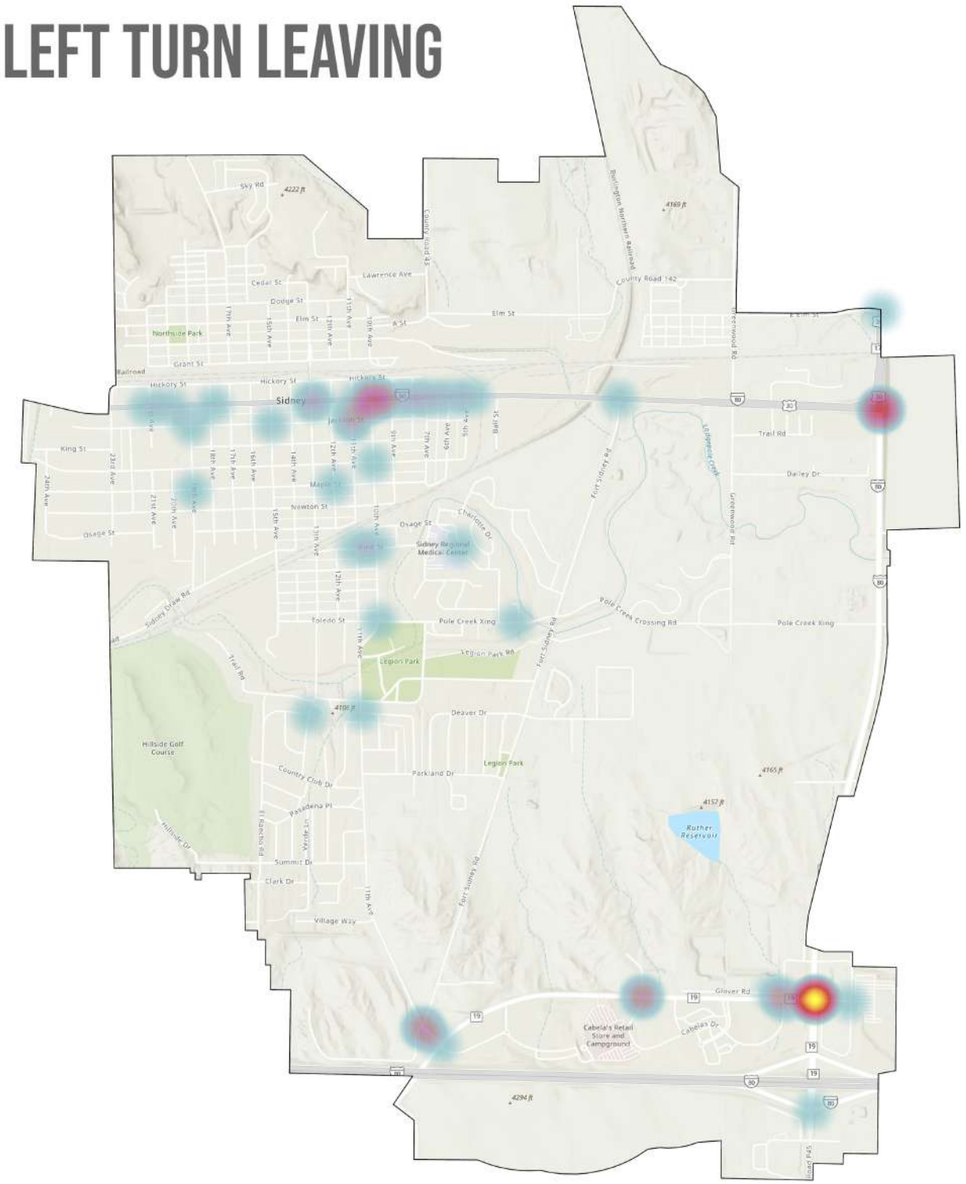
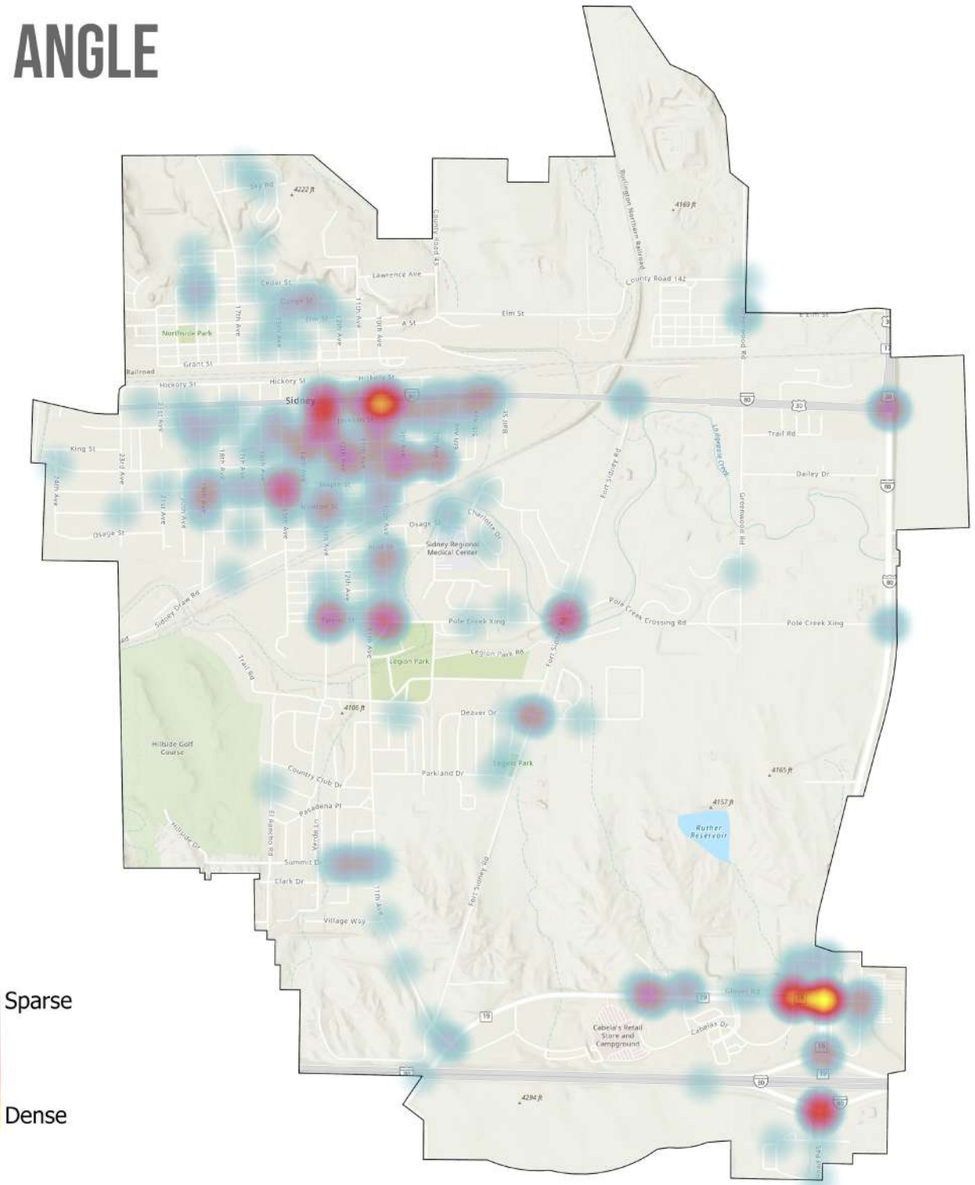
Crash Types

LEFT TURN LEAVING



ANGLE



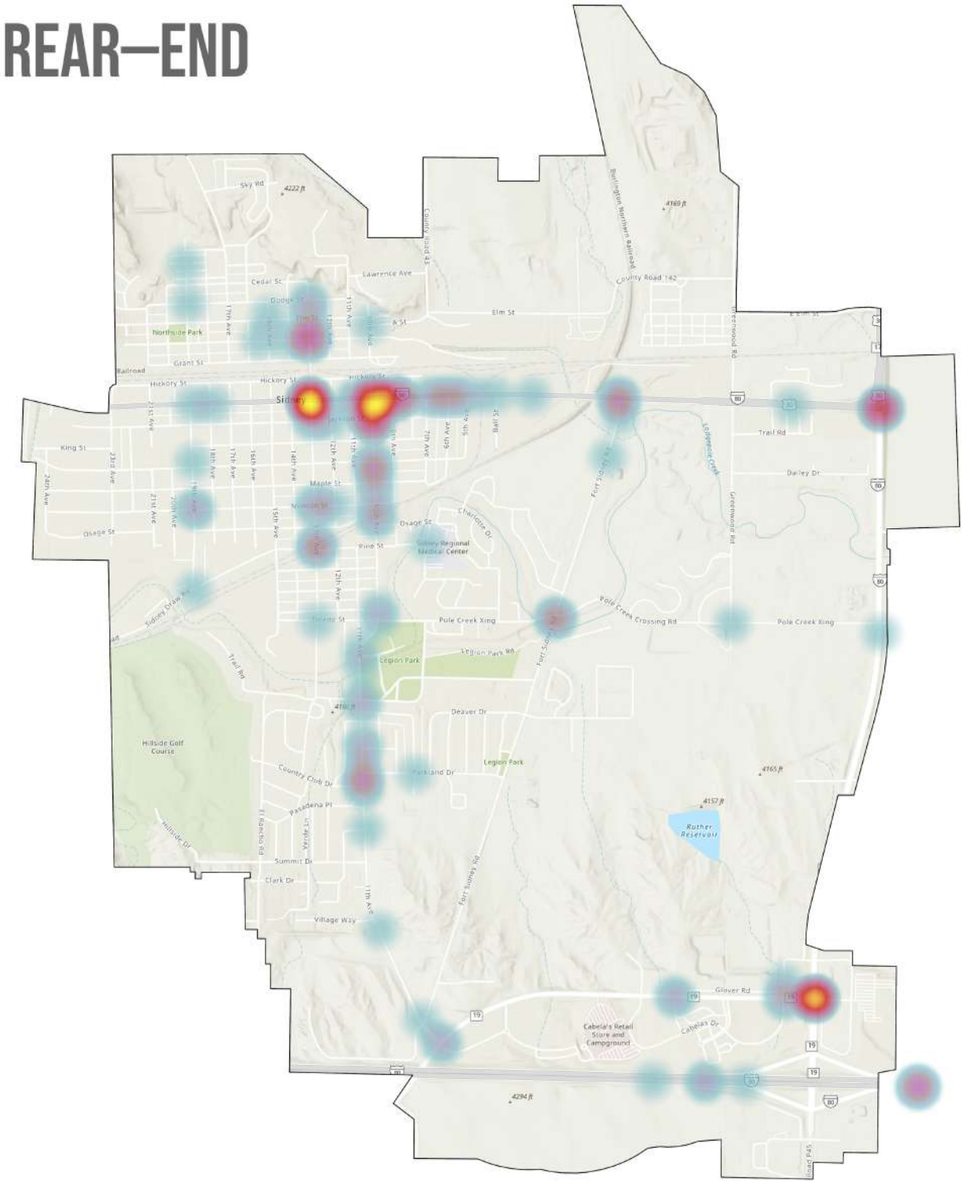
Sparse

Dense

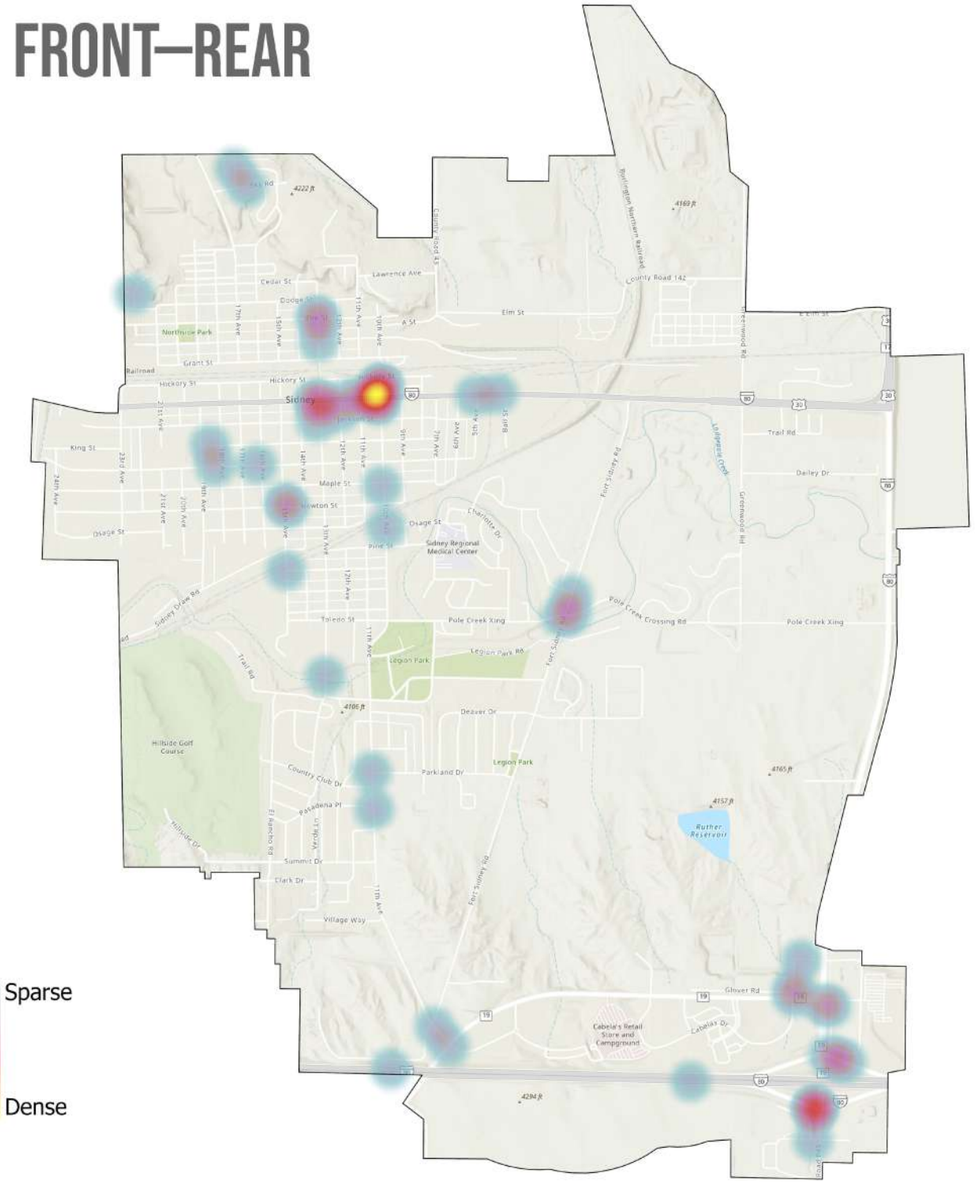
Esri, NASA, NGA, USGS, FEMA, Esri Community Maps Contributors, Nebraska Game & Parks Commission, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS

Crash Types

REAR–END



FRONT–REAR



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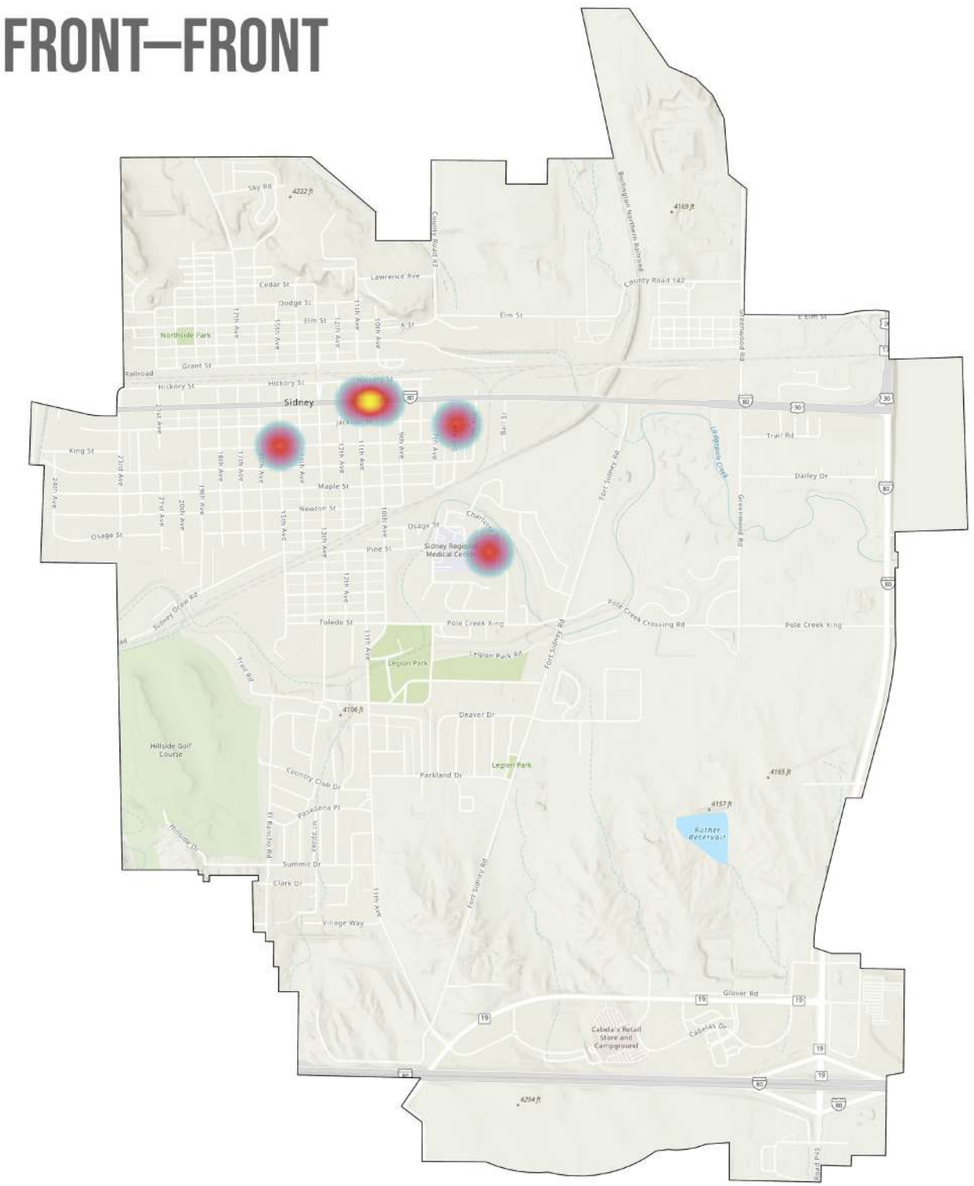
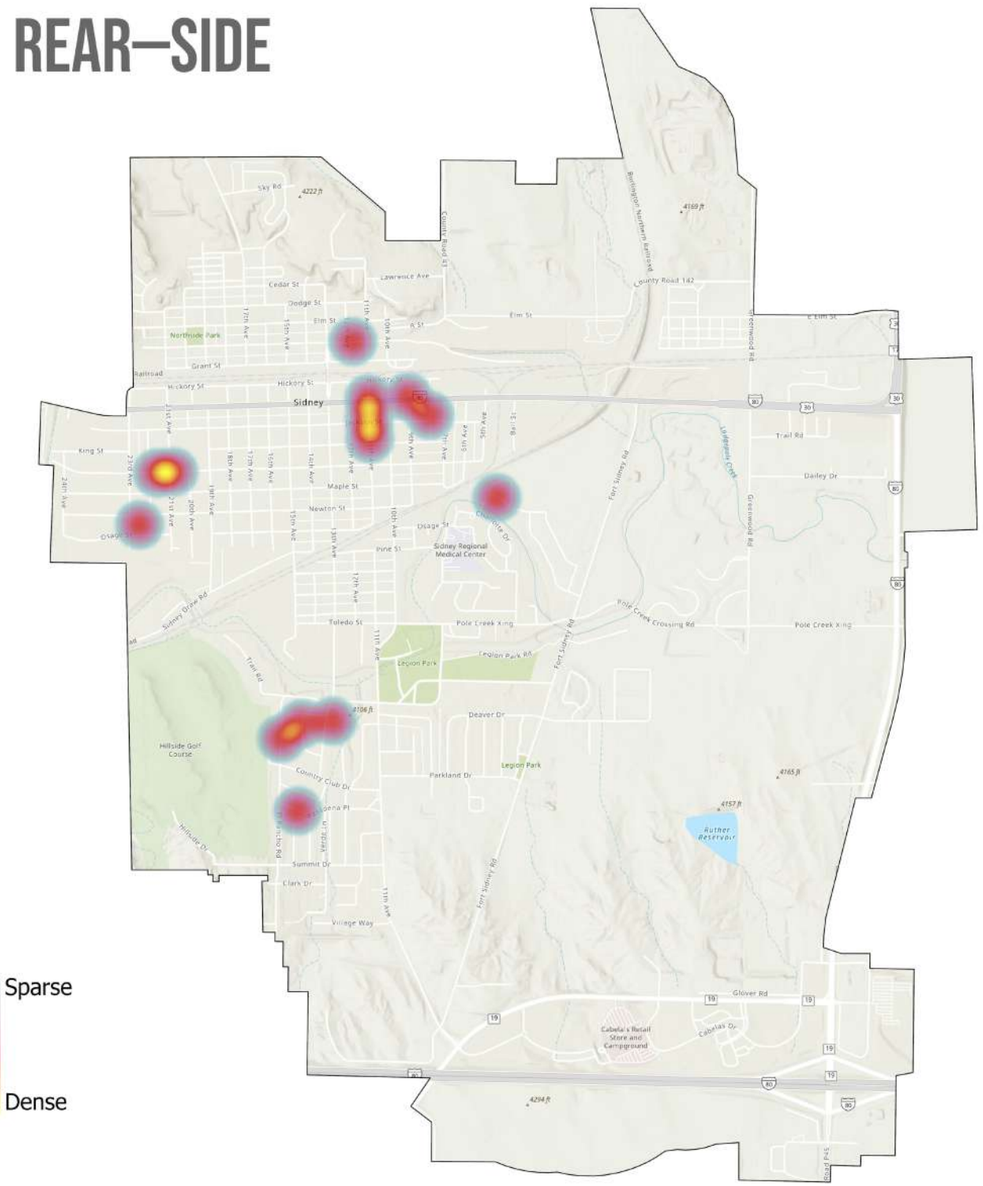
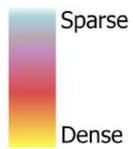
Crash Types

FRONT–FRONT



REAR–SIDE





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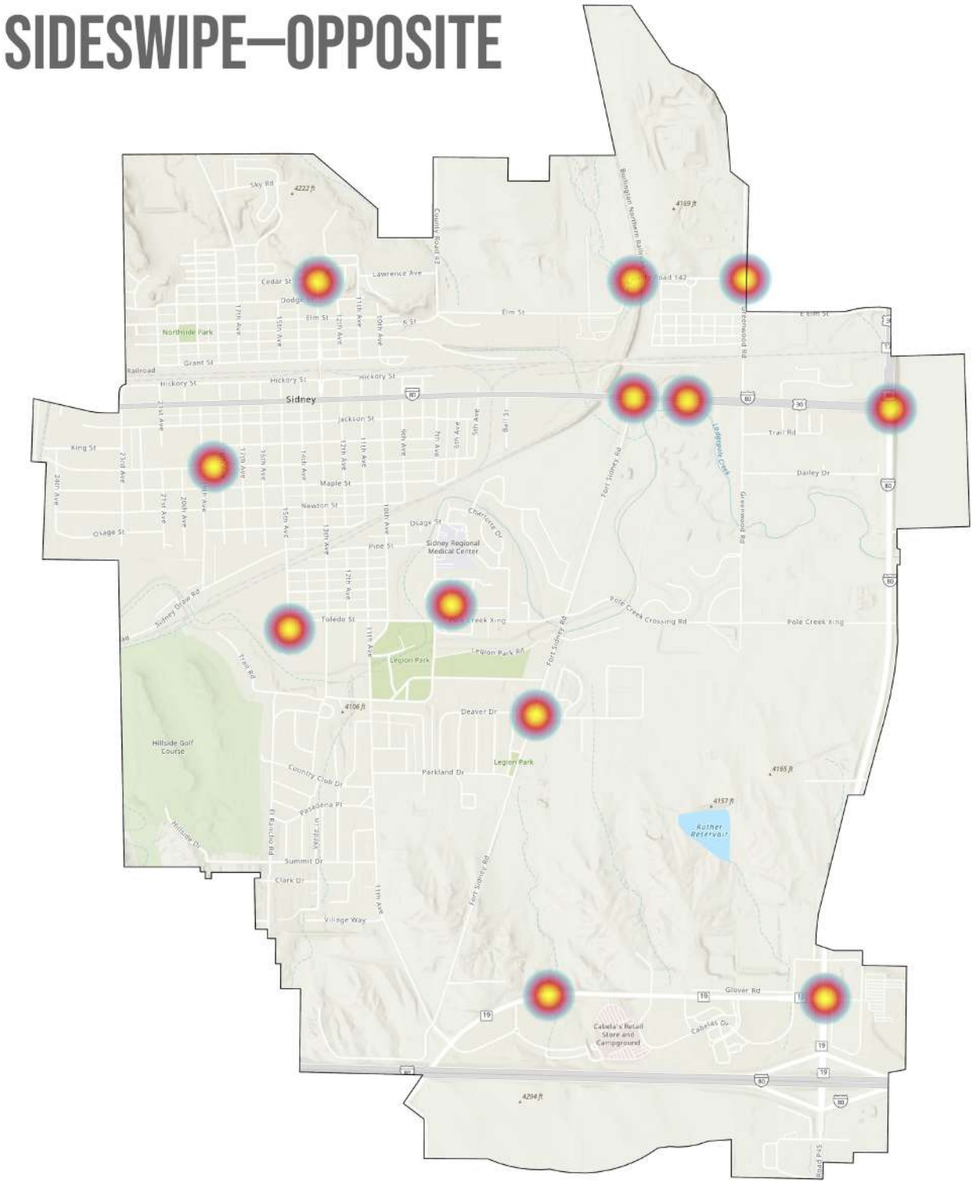
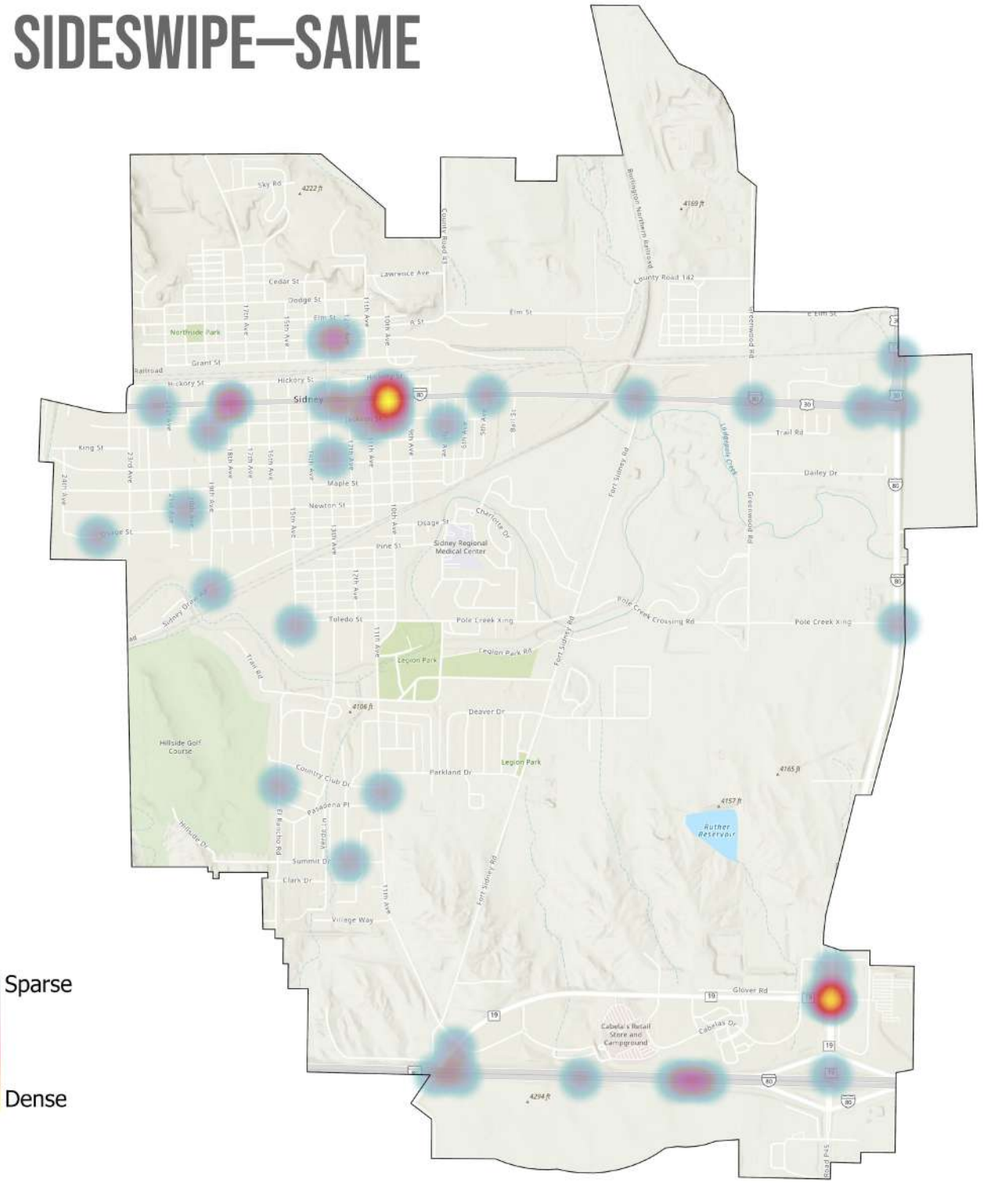
Crash Types

SIDESWIPE–OPPOSITE



SIDESWIPE–SAME



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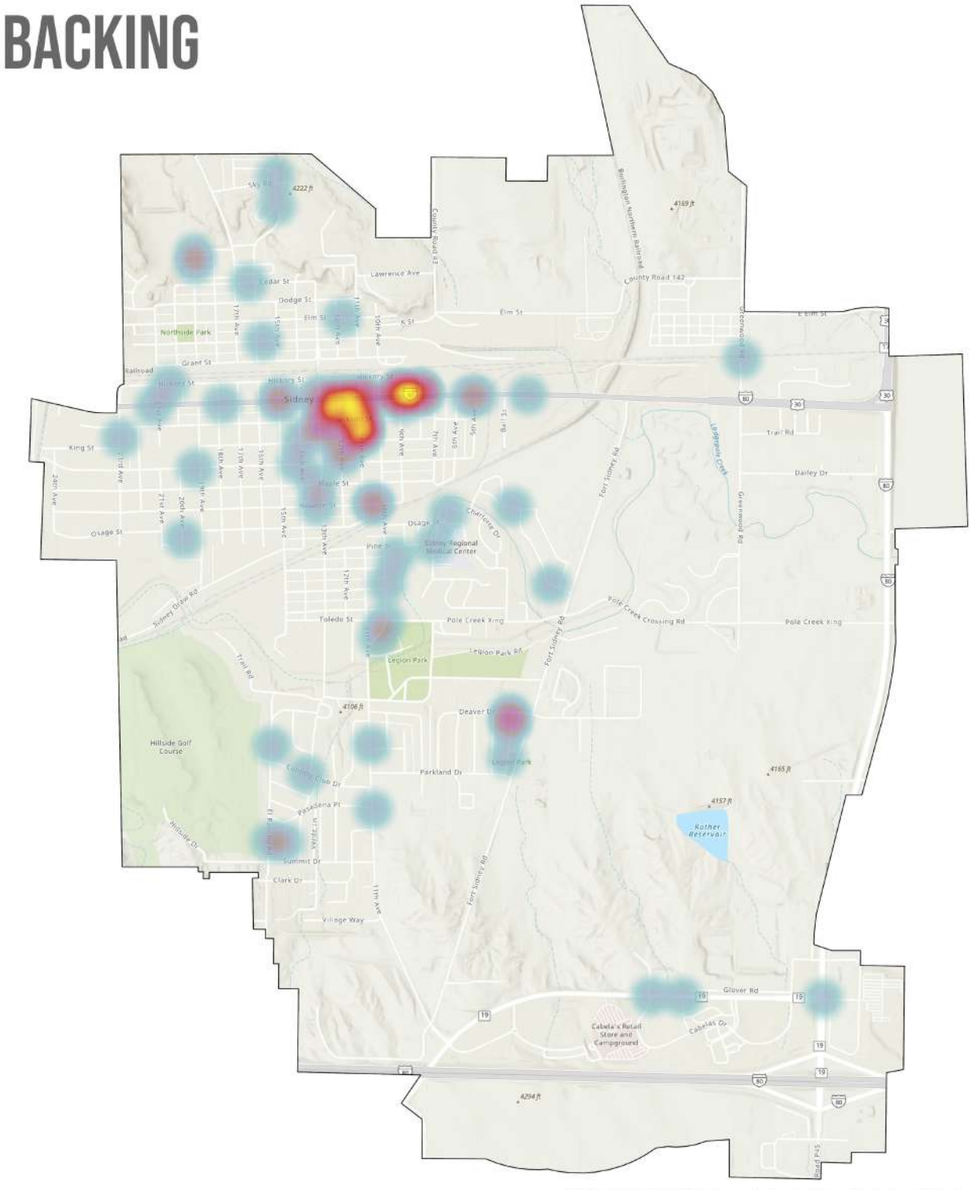
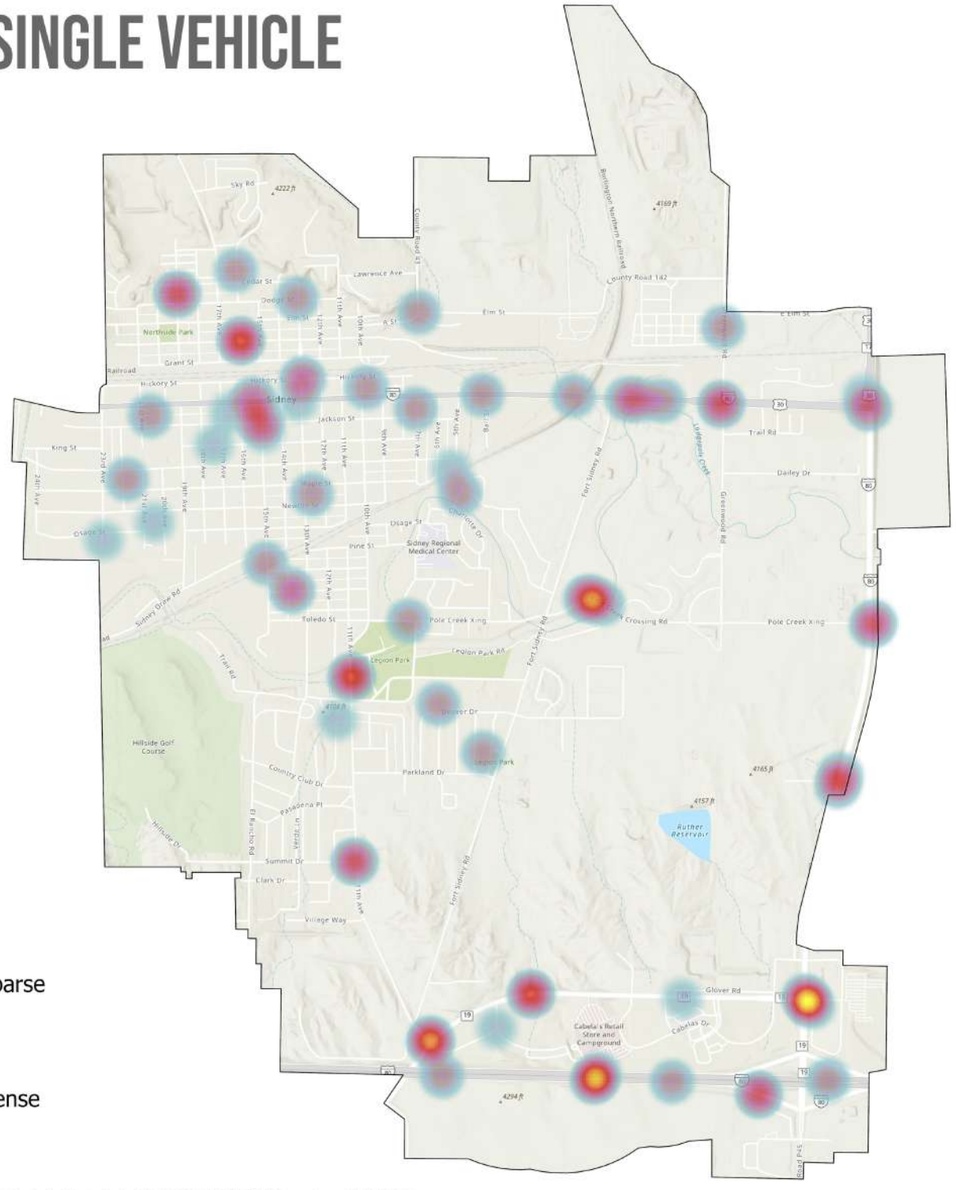
Crash Types

BACKING



SINGLE VEHICLE



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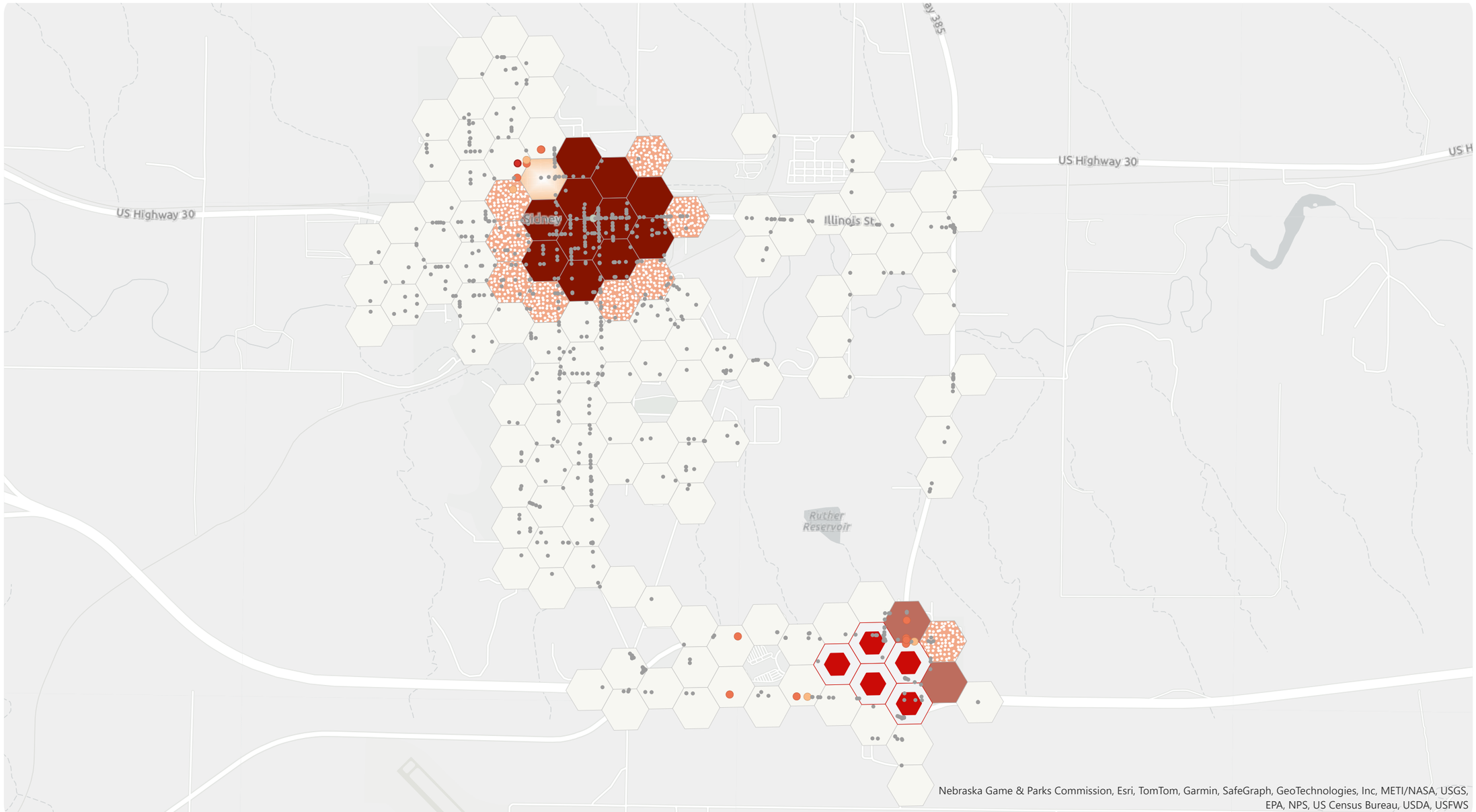
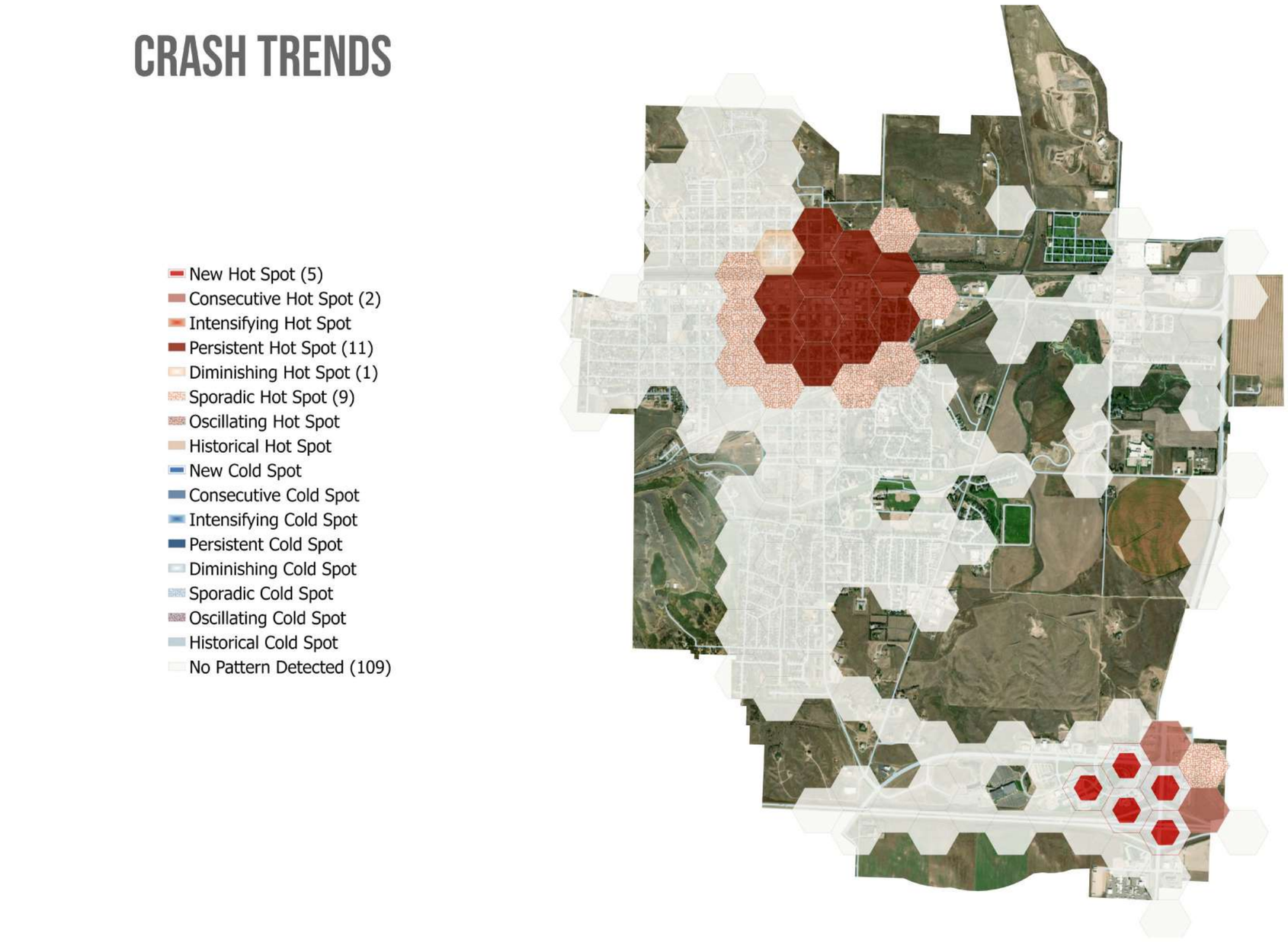
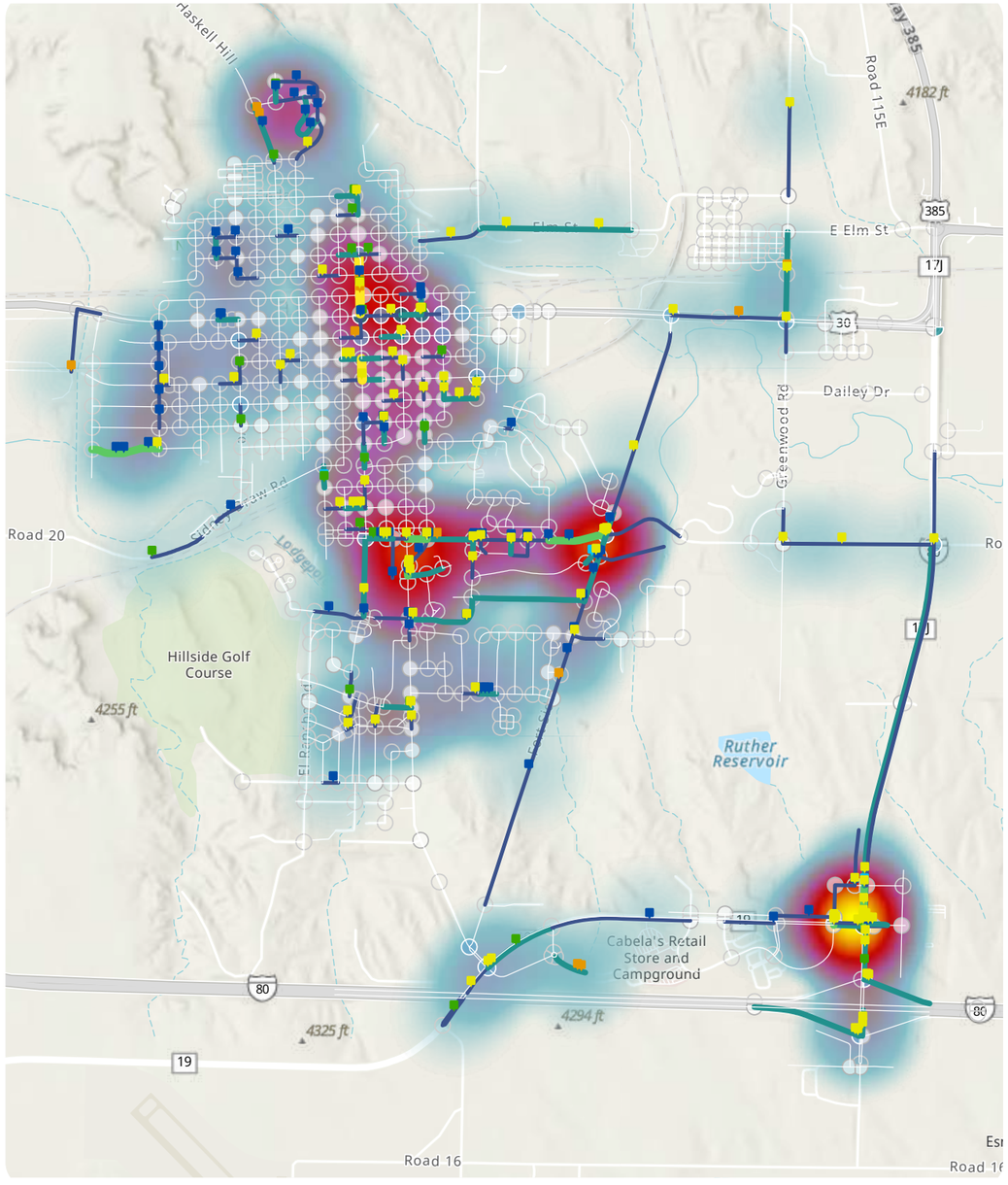
Crash Trends and All Crash Locations

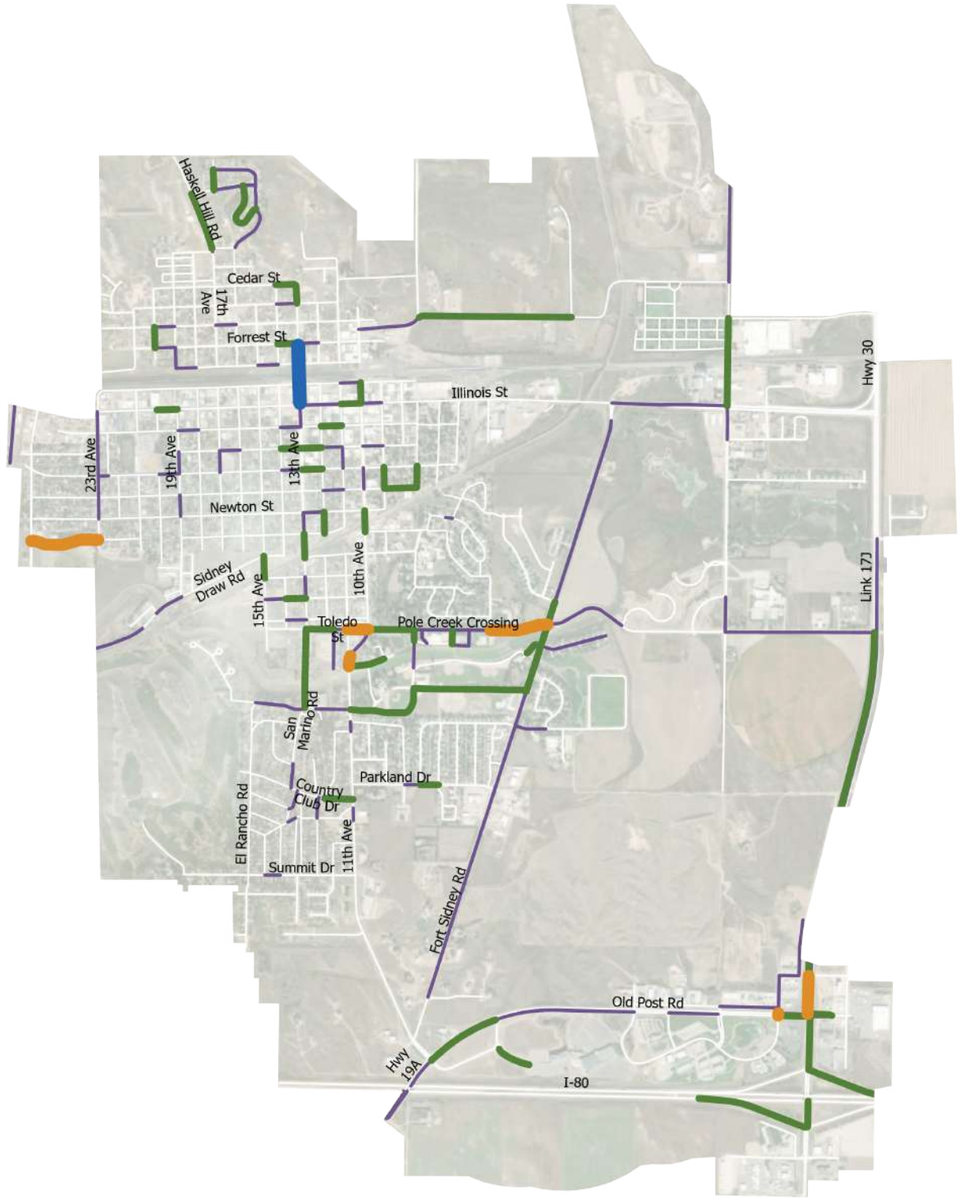


Crash Trends



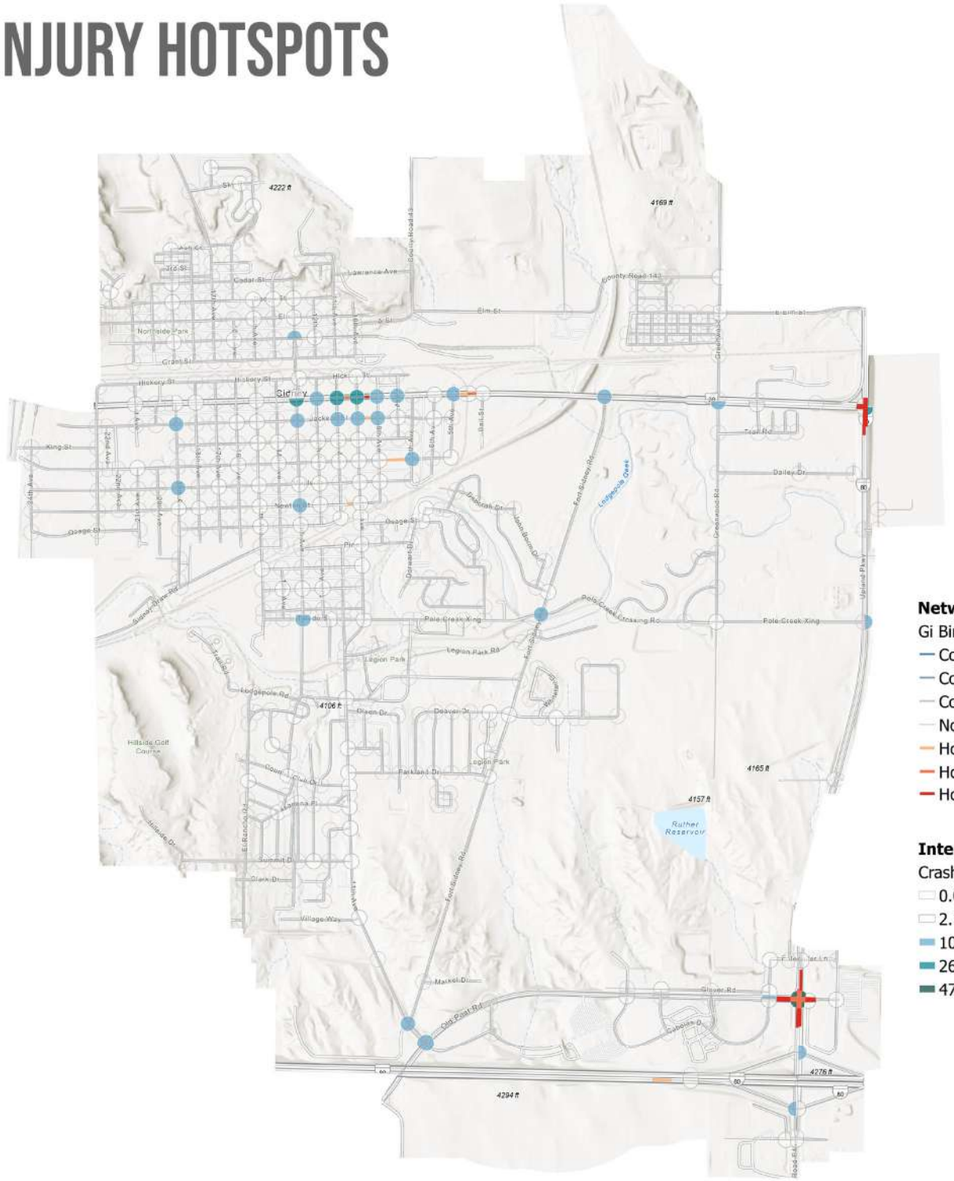
Comment Hotspot Intersections & Corridors



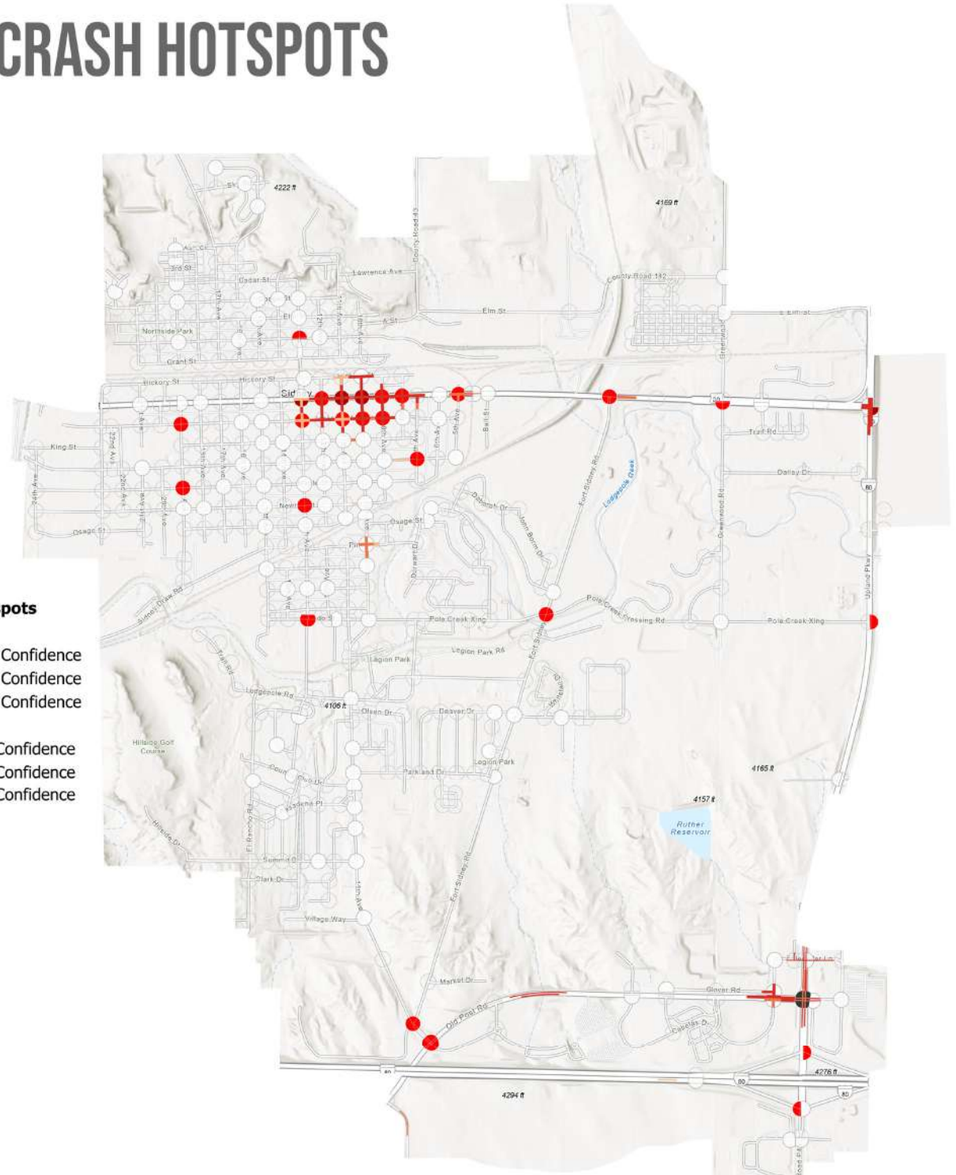


Injury Crashes vs. All Crashes Hotspots

INJURY HOTSPOTS



CRASH HOTSPOTS



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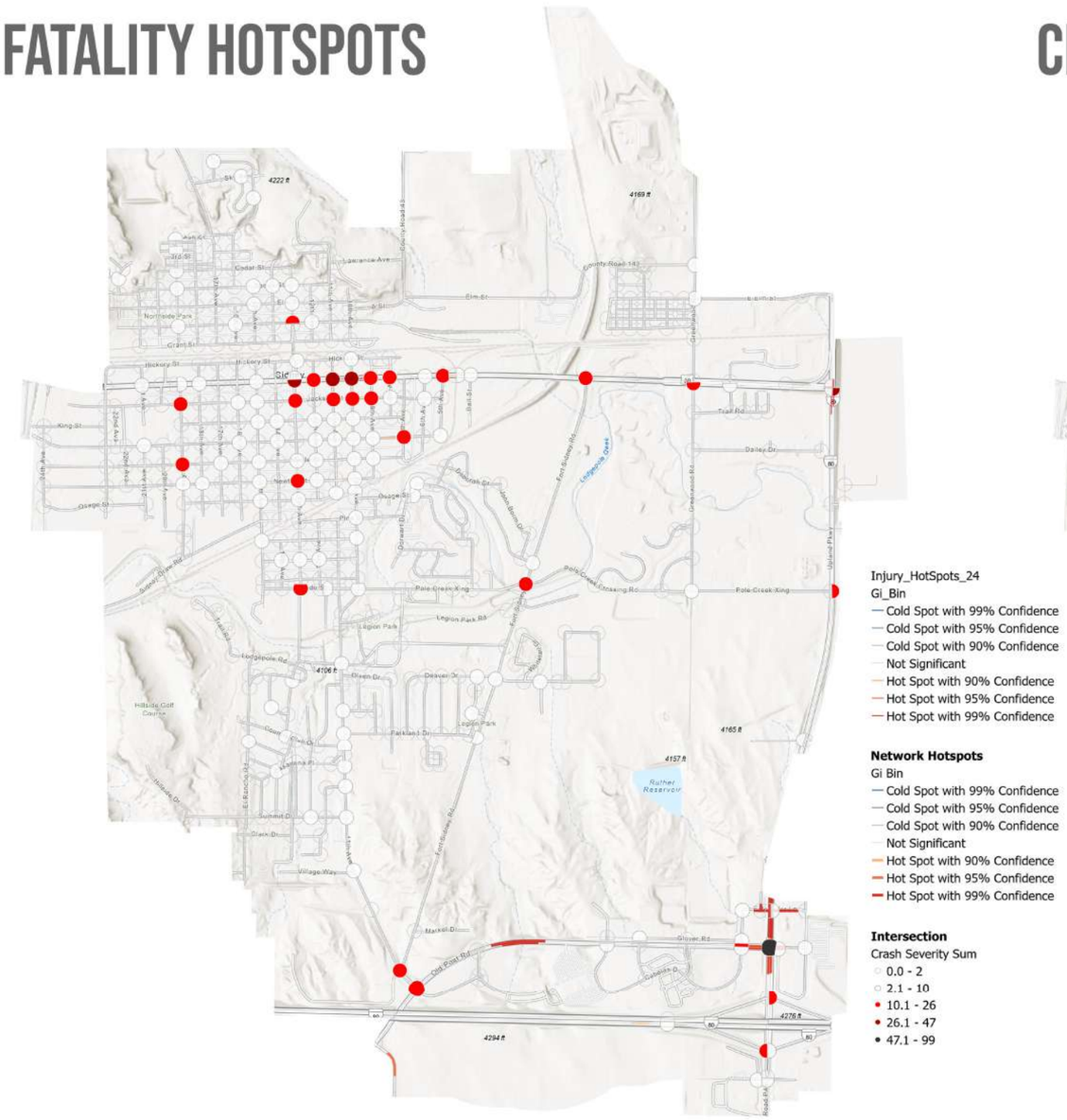
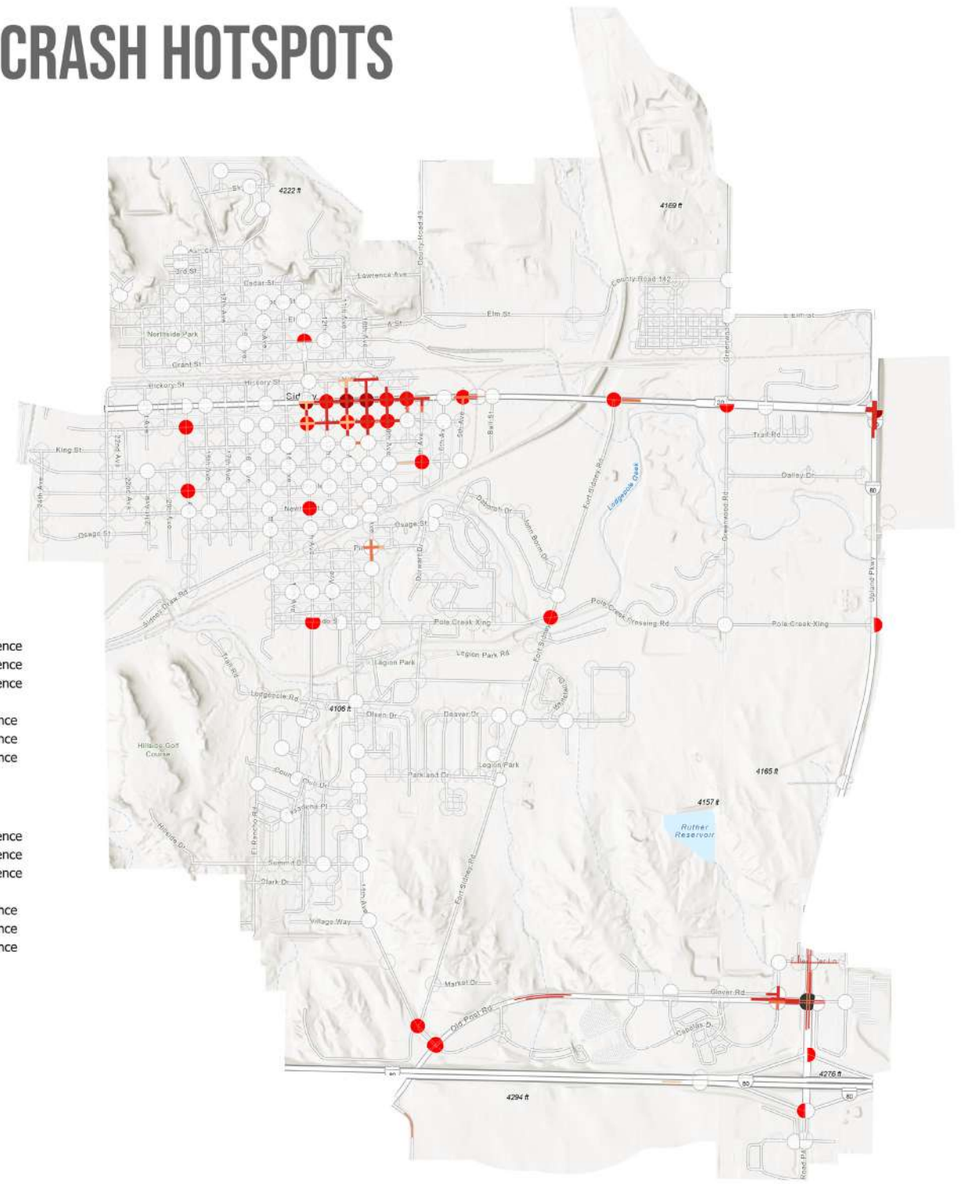
Fatality Crashes vs. All Crashes Hotspots

FATALITY HOTSPOTS



CRASH HOTSPOTS



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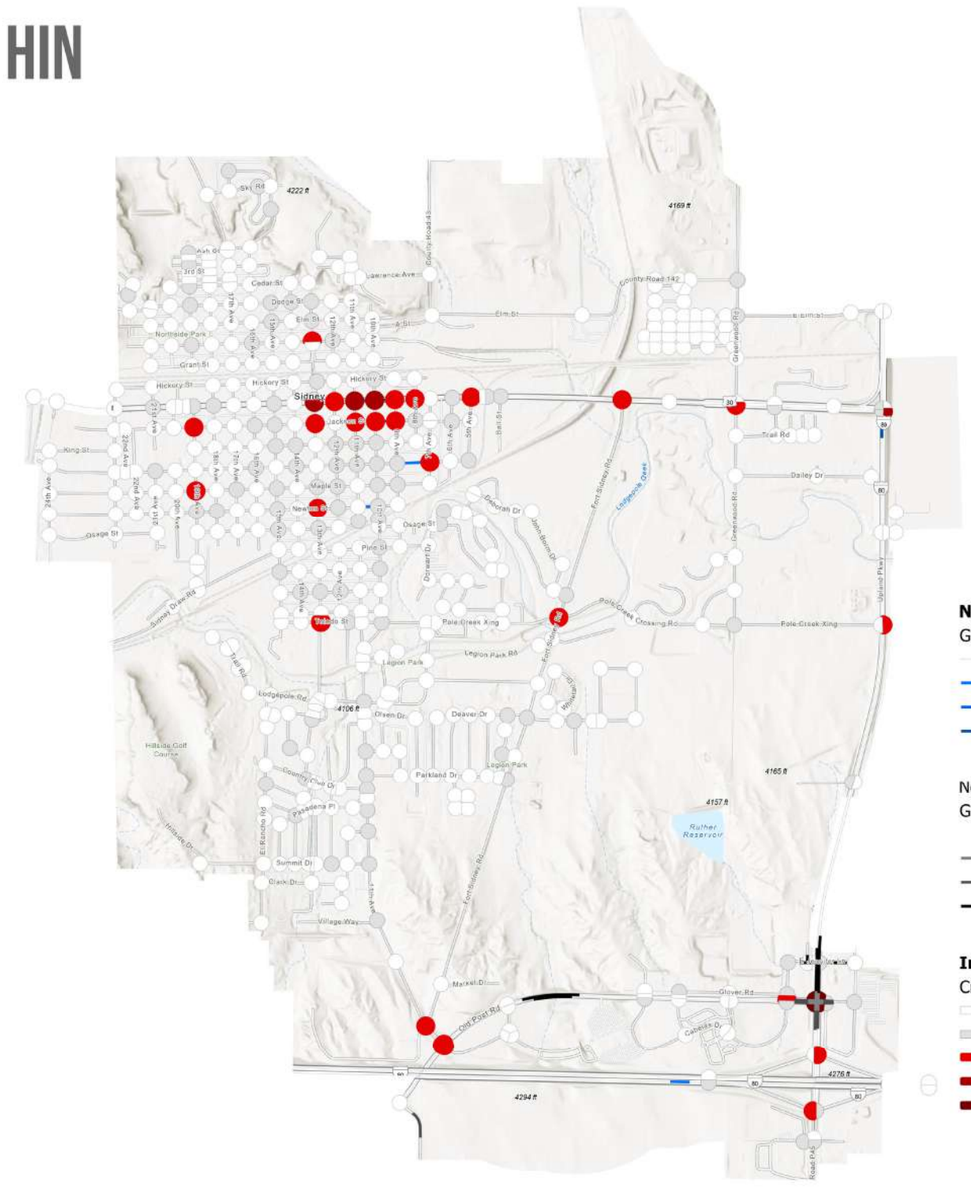
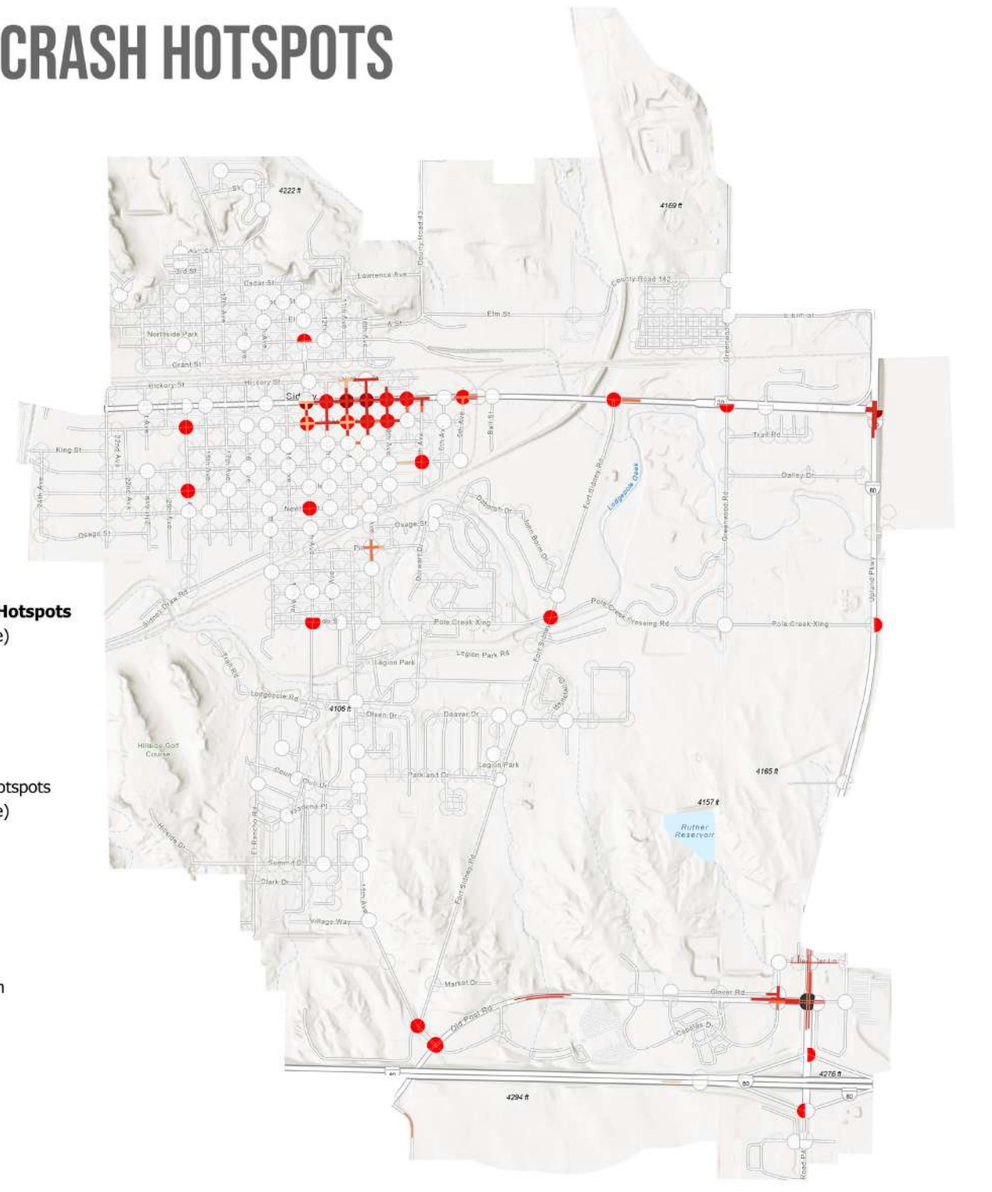
High Injury Network vs. All Crashes Hotspots

HIN



CRASH HOTSPOTS



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Project Emphasis Areas for Prioritization



Old Post Road Intersection, AND Corridor, AND Pathway Connections



13th Avenue Underpass - Mobility and ADA Pedestrian and Bicycle Pathway



Downtown | Complete Streets



Safe Routes to School (Recent closure of North Ward Elementary School)



Pole Creek Crossing and Fort Sidney Road Intersection (Visibility)



South Ward Elementary (Circulation)



West Ward Elementary (Circulation)



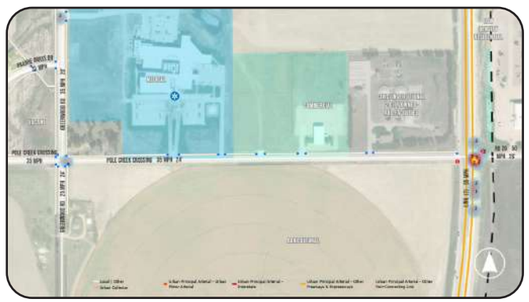
Crosswalk Enhancements (around schools and citywide)



Toledo Street and 10th Avenue Intersection and Geometrics



Speed | At-Grade Railroad Crossings



Pole Creek Crossing and Link 17J Intersection



US 30 and Link 17J Intersection

Geodatabase Metadata

SidneySS4A.gdb Metadata

Summary

Sidney SS4A Safety Action Plan

The City of Sidney received $300K in funding from the Safe Streets for All (SS4A) discretionary grant program to develop a Safety Action Plan. This plan aims to identify the community's most critical transportation safety concerns and includes strategies to mitigate these issues, reducing fatalities and serious injuries. It also facilitates additional planning, demonstration projects, and implementation eff orts, contingent on future funding, to address the outlined needs effectively.

Description

This geodatabase was developed to support the Safe Streets and Roads for All (SS4A) Safety Action Plan for the City of Sidney, Nebraska. It contains spatial and tabular data used to analyze traffic crash patterns, identify high-injury corridors, prioritize safety projects, and guide community engagement efforts.

Data layers include:

- Crash locations and severity (2014–2023)
- High Injury Network (HIN)
- Public comment points and heat maps
- Prioritized project locations
- Roadway and intersection characteristics
- Demographic and socioeconomic overlays

The geodatabase integrates local, state, and federal data sources, including crash reports from NDOT, U.S. Census ACS data, and community input collected through the online commenting platform. It is intended for planning and analysis purposes only and should not be used for legal or emergency response purposes.

For more information, please contact the Sidney SS4A Project Team, M.C. Schaff & Associates, Inc.

Credits

MCS family of companies

NDOT Crash Data: 2014-2023 - IMPORTANT! See Limitations for Usage.

US Census Bureau, 2020: Demographics, TIGER roads, blocks, block groups, tracts, places

City of Sidney GIS datasets: land use (2023 Comp Plan, RDG), corporate limits (Comp Plan, RDG), street light poles

Use limitations

This geodatabase is intended for planning-level analysis, mapping, and decision support as part of the Sidney Safe Streets and Roads for All (SS4A) Safety Action Plan. The data within this geodatabase was compiled from multiple sources, including local field review, aerial imagery, crash records, public input, and U.S. Census data. While every effort has been made to ensure accuracy and relevance, the following limitations apply:

Not Survey-Grade:

The spatial data and digitized features are not field-surveyed and are suitable for planning and public engagement only, not for engineering design or construction.

Data Currency:

Many features were digitized using 2024 aerial imagery or based on available datasets as of 2024–2025. Some infrastructure elements may have changed since data collection.

Crash Data Limitations:

Crash analysis is based on historic reported crashes (2014–2023). Unreported incidents, near-misses, or recent changes in conditions may not be reflected.

Public Input Representativeness:

Public comments included in the dataset reflect perceived safety concerns and are not equivalent to validated crash data.

Demographic Data Accuracy:

Census and ACS demographic data are estimates and may include sampling error or outdated population figures, particularly in small geographies.

No Legal Authority:

This geodatabase is for informational and planning purposes only and carries no legal or regulatory authority.

Summary Statement:

This geodatabase is best used to inform safety planning decisions, support project prioritization, and engage the community but should be supplemented with field verification, engineering review, and additional data before any implementation.

The analysis process for Sidney involved several key steps. Crash data and police reports for the 2014–2023 period were obtained, covering both the city's crashes and those from similarly sized communities for comparison. This data, which includes details such as crash location, time, severity, weather, and other contributing factors, was enhanced with additional information from police reports for crashes involving fatalities or serious injuries (KSI). Given the complexity of visualizing crash patterns from point data alone, the data was restructured to explore space-time trends. Hexagon grids were created to identify "hot spots" of crashes, which were categorized into patterns like sporadic, consecutive, and new hot spots. For further analysis, the most dangerous roads were identified by mapping individual road segments, calculating crash rates, and using hot spot analysis to highlight areas with statistically significant clusters of crashes and KSI crashes. Additionally, time-of-day patterns were explored by charting crashes by hour and day of the week, identifying peak crash periods during morning and afternoon commutes. The resulting analysis identified areas of persistent problems over time and revealed patterns in the spatial distribution of crashes, particularly in high-crash locations and at specific times.

The analysis data layers are stored and organized in the project Geodatabase.

1. **Crash Data Collection**: Crash data from 2014-2023, supplemented by police reports, was obtained to analyze crash patterns, severity, and contributing factors; additional data is available upon request.
2. **Space-Time Trends Analysis:** Hexagonal grid-based space-time cube analysis was used to identify statistically significant crash clusters over time; further details can be provided upon request.
3. **Hot Spot Identification**: Hot spot analysis of crashes and KSI incidents revealed key areas with high crash rates, with further specifics available upon request.
4. **Road Network Crash Association**: Crash data was linked to road segments to identify high-crash locations and compute crash, injury, and fatality rates; additional analysis details can be provided upon request.
5. **Time-of-Day Analysis**: Crash trends by time of day and day of the week were analyzed to determine peak crash periods; further information can be provided upon request.
6. **Road Segment Crash Rates**: Crash rates and KSI rates were calculated per mile for each road segment, highlighting areas with the highest rates of incidents; more details can be provided upon request.
7. **Comparison of Crash Hot Spots**: Crash, injury, and fatality hot spots were compared to identify key high-risk areas; additional data is available upon request.
8. **Intersection Crash Patterns**: Intersection points were mapped to identify high-risk crash areas based on crash frequency and severity; additional details can be provided upon request.
9. **Peak Commuting Time Crash Analysis**: Crash patterns during peak commuting times were examined to identify hazardous periods for drivers; more information is available upon request.
10. **Road Network Data Processing:** The road network was processed to refine crash data analysis, including segmentation and intersection adjustments; further specifics can be provided upon request.

More detailed metadata and information about the datasets, including the data processing methods and sources, can be provided upon request.

Geodatabase Metadata

SidneySS4A.gdb

Name	Type
HotSpots	File Geod
IntersectionsExisting	File Geod
IRR	File Geod
processCrashes	File Geod
processHotSpots	File Geod
processRoads	File Geod
Projects	File Geod
projectsTemplates	File Geod
SS4A	File Geod
USCensus2020	File Geod
Cheyenne_County_Sex_by_Age_2023_ACS_B01001_AgeBuckets	File Geod
CheyenneCountyMedianHouseholdIncome2023ACS_B19013	File Geod
CheyenneCountyPerCapitaIncome2023ACS_B19301	File Geod
CheyenneCountyrace2023ACS_B02001	File Geod
CheyenneCountyRaceEthnicity2023ACS_B03002	File Geod
CheyenneCountySexByAge2023ACS_B01001	File Geod
CommentsGeneral_Nov12_SnapToRd__ATTACH	File Geod
CommentsNov12_SnapToRd__ATTACH	File Geod
CommentsNov12_SnapToRd__ATTACHREL	File Geod
MCS_Sidney_Crash___2011_2023	File Geod
Poverty_Level_ACS_2023_B17021_Cheyenne_County	File Geod
TableCommentVotes_SidneySS4A	File Geod
TransportationHazardComments_Nov12__ATTACH	File Geod
TransportationHazardComments_Nov12__ATTACHREL	File Geod
VotingComments	File Geod

HotSpots Feature Dataset

Name	Type	Geometry
CommentsGeneral_Nov12_SnapToRd	File Geod	Point
CommentsNov12_SnapToRd	File Geod	Point
IntersectionRoadParts_7	File Geod	Line
Intersections_2	File Geod	Multipoint
Intersections_4_PairwiseBuffer40m	File Geod	Polygon
Intersections_21CrashesSummary_1423	File Geod	Polygon
PedestrianCrashes_1423	File Geod	Point
Road_CommentsCount_Nov12	File Geod	Line
Roads_1_PairwiseDissolve	File Geod	Line
tmpRoadsIntersections_6_Intersect40mBuffers	File Geod	Line
TransportationHazardComments_Nov12	File Geod	Point

IntersectionsExisting Feature Dataset

Name	Type	Geometry
ClippedIntersections170	File Geod	Polygon
IntRdBuffer	File Geod	Polygon
intRdBuffer170ft	File Geod	Polygon
Paintline	File Geod	Line
PaintPoint	File Geod	Point
PaintPoly	File Geod	Polygon
RdBuffer	File Geod	Polygon
RdBuffer_Master	File Geod	Polygon
RdWidthBuffer	File Geod	Polygon
RoadEdge	File Geod	Line

processHotSpots Feature Dataset

Name	Type	Geometry
AllCrashes_20142023_Severity_OptHotspotAnalysis	File Geod	Point
AllCrashes_20142023_Severity_OptHotspotAnalysis_300ft	File Geod	Point
AllCrashes_20142023_Severity_OptHotspotAnalysis_500ft	File Geod	Point
AllCrashes_20142023_SeverityOutlierAnalysis	File Geod	Point

Geodatabase Metadata

IRR Feature Dataset

Name	Type	Geometry
AllCrashes_HotSpotAnalysis	File Geod	Point
AllRoads_Crash_HotSpots_8	File Geod	Line
AllRoads_CrashCounts_7	File Geod	Line
AllRoads_Fatality_HotSpots_9	File Geod	Line
AllRoads_HotSpotAnalysis	File Geod	Line
AllRoads_KSI_HotSpots_9	File Geod	Line
Crashes_1_B_Hotspot	File Geod	Point
Crashes_1_C_Hotspot	File Geod	Point
HotSpot_CrashTrends_1_500	File Geod	Polygon
HotSpot_CrashTrends_2_1000	File Geod	Polygon
HotSpot_CrashTrends_3_700	File Geod	Polygon
HotSpot_CrashTrends_4_2000	File Geod	Polygon
HotSpot_CrashTrends_5_1500	File Geod	Polygon
HotSpot_CrashTrends_6_3000	File Geod	Polygon
IRR_1_RdCenterline	File Geod	Line
IRR_2_Rd_Dissolve	File Geod	Line

processCrashes Dataset

Name	Type	Geometry
AllCrashes_20142023	File Geod	Point
AllCrashes_20142023_Copy_20	File Geod	Point
CrashTrends_14	File Geod	Polygon
CrashTrends_15	File Geod	Polygon
CrashTrends_16	File Geod	Polygon
CrashTrends_17	File Geod	Polygon
CrashTrends_18	File Geod	Polygon
CrashTrends_19	File Geod	Polygon
Fatality_HotSpots_23	File Geod	Line
Injury_HotSpots_24	File Geod	Line
RoadCrashCounts_21	File Geod	Line
RoadCrashHotSpots_22	File Geod	Line

processRoads Dataset

Name	Type	Geometry
IntBuffers40m_6	File Geod	Polygon
IntBuffers40m_6b	File Geod	Polygon
Intersection_3	File Geod	Multipoint
IntersectionRoadFeatures_12	File Geod	Line
Intersections_5	File Geod	Point
IntRoadParts_7	File Geod	Line
Points_100m_9	File Geod	Point
RdsSpltAtInts_1	File Geod	Line
RdsSpltAtInts_2	File Geod	Line
RoadNetwork_13	File Geod	Line
Roads100m_10	File Geod	Line
RoadsNoInts_8	File Geod	Line
ShortRdSegs_11	File Geod	Line
SnapPoints_12	File Geod	Point
VertexCounts_4	File Geod	Point

Geodatabase Metadata

Projects Feature Dataset

Name	Type	Geometry
BikeLane	File Geod	Line
BikeLanePaint	File Geod	Point
BulbOut	File Geod	Polygon
CrosswalkHV	File Geod	Polygon
CurbProposed	File Geod	Line
Landscaping	File Geod	Polygon
PaintStripe	File Geod	Line
PedestrianCrossingIsland	File Geod	Polygon
PHB_HAWK	File Geod	Point
Project_Site3A_3H_anno	File Geod	Annotation
ProjectRegion	File Geod	Polygon
ProjectSite	File Geod	Point
RRFB	File Geod	Point
SharedLaneRoadway	File Geod	Line
SharedUsePath	File Geod	Polygon
SidewalkProposed	File Geod	Line
SignProposed	File Geod	Point
StreetFurnitureLighting	File Geod	Point
StreetTree	File Geod	Point

projectsTemplates Feature Dataset

Name	Type	Geometry
AccessiblePedestrianSignal	File Geod	Point
ADARampProposed	File Geod	Polygon
AdvancedWarningFlasher	File Geod	Point
BackplatesRRB	File Geod	Point
BicycleBoulevard	File Geod	Line
BikeSignal	File Geod	Point
GradeSeparatedCrossing	File Geod	Polygon
HatchedPaint	File Geod	Polygon
LeadingPedestrianInterval	File Geod	Point
PavedShoulder	File Geod	Line
PavementMarkingProposed	File Geod	Line
PedestrianLighting	File Geod	Point
ProtectedLeftTurnSignalPhasing	File Geod	Point
RaisedMedian	File Geod	Polygon
RaisedPedestrianCrossing	File Geod	Polygon
RedLightRunningCamera	File Geod	Point
ReducedCurbRadii	File Geod	Line
ReduceParkingAtIntersection	File Geod	Point
RumbleStrips	File Geod	Line

projectsTemplates Feature Dataset

ShoulderPededstrianFacility	File Geod	Polygon
SightDistanceImprovementLine	File Geod	Line
SignalTimingPhasing	File Geod	Point
SpeedBumpHumpTable	File Geod	Line
VehicleSpeedFeedbackSign	File Geod	Point
YellowChangeInterval	File Geod	Point

Geodatabase Metadata

SS4A Feature Dataset

Name	Type	Geometry
AccessPoint	File Geod	Point
CorporateLimits_Digitized	File Geod	Polygon
Crosswalk	File Geod	Polygon
ETJ	File Geod	Polygon
LandUse	File Geod	Polygon
ParkingSpace	File Geod	Point
Pathway	File Geod	Line
POI	File Geod	Point
preHIN_SidneySS4A	File Geod	Line
PubCmnts_VtngCmnts	File Geod	
PublicCommentsSidneySS4A	File Geod	Point
RampADA	File Geod	Point
Relationship_PublicCommentPointsVotes	File Geod	
Sidewalk	File Geod	Line
Sidney_1mileBuffer	File Geod	Polygon
Sidney_3mileBuffer	File Geod	Polygon
Sidney_200ftBuffer	File Geod	Polygon
Sidney_StreetIntersect	File Geod	Multipoint
SidneyTrafficSafetyConcerns	File Geod	Point

SS4A Feature Dataset

Sign	File Geod	Point
Streets_SidneySS4A	File Geod	Line
YardSign	File Geod	Point

USCensus2020 Feature Dataset

Name	Type	Geometry
Block2020	File Geod	Polygon
BlockGroup2020	File Geod	Polygon
CensusEthnicityData	File Geod	Polygon

Geodatabase Metadata

The Sidney SS4A Safety Action Plan geodatabase model organizes spatial and tabular data into a centralized structure to support analysis, mapping, and decision-making.

It includes feature classes for crash locations, the High Injury Network, proposed and prioritized project areas, pedestrian and bicycle infrastructure, school zones, and community facilities.

Additional layers incorporate demographic data, public comments, and roadway characteristics, all linked by consistent identifiers such as street names, block groups, and project IDs.

This model ensures data is easily accessible and integrated across planning, outreach, and implementation activities.

1. Feature Datasets and Key Layers

Feature Class / Layer	Feature Dataset	Feature Type	Description	Source	Key Fields
AccessPoint	SS4A	point	Point locations of accesses along street (driveways, alleys, drives)	digitized on aerial	AccessType, DataSource, PointWeight
CorporateLimits_Digitized	SS4A	polygon	Polygon of Corporate limits aligning with Sidney's 2023 Comp Plan	2023 Comprehensive Plan (digitized)	Name
Crosswalk	SS4A	polygon	Polygon of existing crosswalks	digitized on aerial	StreetCrossing, StreetAdjacent, Width
ParkingSpace	SS4A	point	Point locations at center of parking space	digitized on aerial	SpaceType, SpaceLocation, Arrangement
Pathway	SS4A	line	Centerline of pathway	digitized on aerial	Name, Width, Material, Status, Length
POI	SS4A	point	Points of interest (e.g. school, hospital, clinic, grocery, recreation)	digitized on aerial	Name, Type
preHIN_SidneySS4A	SS4A	line	Road segments (with many attributes) prior to HIN processing	City archive, MCS edits	SpeedLimit, Classification, Name, Width, Pavement, Jurisdiction, Surface Type, Status
PubCmnts_VtngCmnts	SS4A	join	Join used for public comments and votes	Consultant team	NA
PublicCommentsSidneySS4A	SS4A	point	Point locations of public engagement from online commenting map (template)	public commenting map	Comment, SubCat, GlobalID, Vote, Category, PublicView, Status, CreatedUser, Many Response Fields
RampADA	SS4A	point	Point locations of ADA ramps - digitized, not a complete inventory	digitized on aerial	Type
Relationship_PublicCommentPointsVotes	SS4A	relationship	Relationship used for public comments and votes	Consultant team	NA
Sidewalk	SS4A	line	Sidewalk line locations - digitized, not a complete inventory	digitized on aerial	Width, Condition
Sidney1mileBuffer	SS4A	polygon	Polygon, 1-mile buffer of Sidney Corporate Limits	buffer of Corporate Limits	Name
Sidney3mileBuffer	SS4A	polygon	Polygon, 3-mile buffer of Sidney Corporate Limits	buffer of Corporate Limits	Name
Sidney200ftBuffer	SS4A	polygon	Polygon, 200-ft buffer of Sidney Corporate Limits (used for commenting map boundary in online mapping)	buffer of Corporate Limits	Buffer Distance
Sidney_StreetIntersect	SS4A	point	Point locations of Sidney Street Intersections (with street names)	generated from centerline in GIS	Name, intersecting street name
SidneyTrafficSafetyConcerns	SS4A	point	Template point layer for creating online commenting map	public commenting map	Category, comment, votes, (many additional fields)
Sign	SS4A	point	Point locations of signs, digitized referencing streetview, majority of signs	digitized on aerial	Latitude, Longitude, Legend, SymbolRotate
Streets_SidneySS4A	SS4A	line	Road segments (with many attributes)	City archive, MCS edits	Name, SpeedLimit, adt, Width, Pavement, ROW (Right of Way), Length
YardSign	SS4A	point	Point location of yard signs used for promoting safety action plan website	digitized on aerial	Label, symbol rotation
Block2020	USCensus 2020	polygon	Polygon, US Census Blocks within Cheyenne County, 2020	US 2020 Census	GeoID
BlockGroup2020	USCensus 2021	polygon	Polygon, US Census Block Groups within Cheyenne County, 2020	US 2020 Census	GeoID, BlkGrpCe20 (Census Block Group)
CensusEthnicityData	USCensus 2022	polygon	Polygon, US Census Block Groups within Cheyenne County, 2020 (Ethnicity Data)	US 2020 Census	Median Household Income, GeoID, Per capita income, breakdown of ethnicities, age breakdown
CrashNDOT_Alcohol	crashNDOT	point	estimated data, Point feature, 2014-2020 alcohol related crashes digitized from NDOT online portal	Nebraska Department of Transportation (NDOT)	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_Bicycle	crashNDOT	point	estimated data, Point feature, 2014-2020 bicycle crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_COMBINED	crashNDOT	point	estimated data, Point feature, 2014-2020 all crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_Fatality	crashNDOT	point	estimated data, Point feature, 2014-2020 fatal crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_Motorcycle	crashNDOT	point	estimated data, Point feature, 2014-2020 motorcycle crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_Pedestrian	crashNDOT	point	estimated data, Point feature, 2014-2020 pedestrian crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_PossibleInjury	crashNDOT	point	estimated data, Point feature, 2014-2020 possible injury crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_SuspectedSeriousInjury	crashNDOT	point	estimated data, Point feature, 2014-2020 suspected injury crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_Truck	crashNDOT	point	estimated data, Point feature, 2014-2020 truck crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
CrashNDOT_VisibleInjury	crashNDOT	point	estimated data, Point feature, 2014-2020 visible injury crashes digitized from NDOT online portal	NDOT portal, not complete	Severity, Date, Time, Day of Week, Location, Alcohol Related, CrashKey, Weather
ClippedIntersections170	Intersections Existing	polygon	Polygon, buffered road centerlines, clipped to 170' from intersection, with intersection names	generated from centerline in GIS	Name
IntRdBuffer	Intersections Existing	polygon	Polygon, buffered road centerlines, clipped to 131' from intersection, with intersection names - Roadway related to intersection, to intersect crashes within 131' of intersection	buffered from centerline in GIS	Sum SeverityCode_1_5, Priority_SevCnt, Count of Points, Name
intRdBuffer170ft	Intersections Existing	polygon	Polygon, circular buffer of intersection at 170 feet	buffered from centerline in GIS	Name
Paintline	Intersections Existing	line	Existing street paint lines digitized from current Esri aerials for use with crash maps and proposed projects maps	digitized on aerial	Color
PaintPoint	Intersections Existing	point	Point locations for Stop lights, rotation is included in attribute	digitized on aerial	PointRotation
PaintPoly	Intersections Existing	polygon	Polygon white paint and brick features, existing; for use with crash maps	digitized on aerial	Color
RdBuffer	Intersections Existing	polygon	Polygon, continuous road buffer of all streets, using road width for buffer width	generated from centerline in GIS	NA
RdBuffer_Master	Intersections Existing	polygon	Polygon, MASTER continuous road buffer of all streets, using road width for buffer width	buffered from centerline in GIS	NA
RdWidthBuffer	Intersections Existing	polygon	Polygon buffers of road based on centerline width	buffered from centerline in GIS	Width
RoadEdge	Intersections Existing	line	Line features digitized on aerials of existing road pavement edge for use in crash maps	digitized on aerial	NA
AllRoads_HotSpotAnalysis	IRR *(injury risk roadway)*	line	Road centerlines with land use risk score, clipped to corplim, dissolved on road stereotype-alignment-aadt-lane width-shoulder width-speed limit, crashes…	derived from centerline and crash data	Name, class, speed, width, lanes, class, volume, land use, risk score, access density
IRR_1_RdCenterline	IRR *(injury risk roadway)*	line	Centerline of roads, injury risk roadway - step 1	generated from centerline in GIS	Name, speed, width, pavement, jurisdiction, surface, status, parking, lane miles…
IRR_2_Rd_Dissolve	IRR *(injury risk roadway)*	line	Road centerline corridor segmentation= aggregated by posted speed and road name; 1st Segmentation: Land Use; 2nd Segmentation: Road Stereotype; 3rd Segmentation: alignment; 4th Segmentation: AADT	derived from centerline and crash data	Name, speed, width, lanes, class, volume, lane use, lane use risk score, stereotype…
Crashes_1_Hotspot	IRR *(injury risk roadway)*	point	Point features of crashes, hotspot analysis - step 1	derived from NDOT XLS crash data	Severity Code, GiZScore, GiPValue, Nneighbors, Gi_BinFixed
Crashes_1_B_Hotspot	IRR *(injury risk roadway)*	point	Point features of crashes, hotspot analysis - step 2	derived from NDOT XLS crash data	Severity Code, GiZScore, GiPValue, Nneighbors, Gi_BinFixed
Crashes_1_C_Hotspot	IRR *(injury risk roadway)*	point	Point features of crashes, hotspot analysis - step 3	derived from NDOT XLS crash data	Severity Code, GiZScore, GiPValue, Nneighbors, Gi_BinFixed
HotSpot_CrashTrends_1_500	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 500't across	derived from crash data	pattern type, counts—not used
HotSpot_CrashTrends_2_1000	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 1000' across	derived from crash data	pattern type, counts—optimal hexagon size
HotSpot_CrashTrends_3_700	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 700' across	derived from crash data	pattern type, counts—not used
HotSpot_CrashTrends_4_2000	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 2000' across	derived from crash data	pattern type, counts—not used
HotSpot_CrashTrends_5_1500	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 1500' across	derived from crash data	pattern type, counts—not used
HotSpot_CrashTrends_6_3000	IRR *(injury risk roadway)*	polygon	Hexagons used for space-time analysis - 3000' across	derived from crash data	pattern type, counts—not used

Geodatabase Metadata

1. Feature Datasets and Key Layers

Feature Class / Layer	Feature Dataset	Feature Type	Description	Source	Key Fields
AllRoads_CrashCounts_7	IRR *(injury risk roadway)*	line	All roads with joined counts of crashes, injured, fatalities, vehicles; and rates of crashes fatalities, KSIs	derived from centerline and crash data	Join count, num injured, num fatal, crash rate, fatality rate, KSI rate
AllRoads_Crash_HotSpots_8	IRR *(injury risk roadway)*	line	All roads, crash rates, analysis scores	derived from centerline and crash data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
AllRoads_KSI_HotSpots_9	IRR *(injury risk roadway)*	line	All roads, KSI rates, analysis scores	derived from centerline and crash data	KSI rate, GiZScore, GiPValue, Nneighbors, GiBin
AllRoads_Fatality_HotSpots_9	IRR *(injury risk roadway)*	line	All roads, fatality rates, analysis scores	derived from centerline and crash data	Fatality rate, GiZScore, GiPValue, Nneighbors, GiBin
AllCrashes_HotSpotAnalysis	IRR *(injury risk roadway)*	point	All crashes, multiple fields	derived from crash data	Crash key, date, day, time, location, severity, numinjured, numfatal, weather, lighting, crashtype, first harmful event, road surface condition, alcohol/drug related, age, contributing factors, modes, reckless, severity code
PedestrianCrashes_1423	HotSpots	point	Pedestrian crashes only (Sidney crash data for 2014-2023)	derived from crash data	Crash key, date, day, time, location, severity, numinjured, numfatal, weather, lighting, crashtype, first harmful event, road surface condition, alcohol/drug related, age, contributing factors, modes, reckless, severity code
Intersections_21CrashesSummary_1423	HotSpots	line	Intersection crashes only (Sidney crash data for 2014-2023)	derived from centerline	Intersecting street names, buffer distance from intersection, sum severity code, count of crashes, priority severity count
Roads_1_PairwiseDissolve	HotSpots	line	1. hotspot analysis: Roads dissolved pairwise	derived from centerline	(none, used for hot spot analysis step 1)
Intersections_2	HotSpots	point	2. hotspot analysis: Intersections used for hot spot analysis	derived from centerline	name of intersecting streets
Intersections_4_PairwiseBuffer40m	HotSpots	polygon	4. hotspot analysis: Buffered intersections (131 feet)	derived from centerline	Intersecting street names, buffer distance
tmpRoadsIntersections_6_Intersect40mBuffers	HotSpots	line	6. hotspot analysis: Road intersection centerlines within 40-meters buffer	buffered intersections derived from centerline	Intersecting street names, buffer distance
IntersectionRoadParts_7	HotSpots	line	7. hotspot analysis: Road Parts within intersection buffer	buffered intersections derived from centerline	Intersecting street names, buffer distance
CommentsGeneral_Nov12_SnapToRd	HotSpots	point	Template point layer for creating online commenting map	public commenting map	Safety Concern, Location, What were you doing? Additional details, When did the problem occur, number of votes, public view, optional contact info
Road_CommentsCount_Nov12	HotSpots	point	913 concerns mapped during online commenting map	public commenting map	Safety Concern, additional details, number of votes, vote rate
TransportationHazardComments_Nov12	HotSpots	point	253 comments mapped during online commenting map	public commenting map	Safety Concern, Location, What were you doing? Additional details, When did the problem occur, number of votes, public view, optional contact info
CommentsNov12_SnapToRd	HotSpots	point	Online commenting map data	public commenting map	Safety Concern, Location, What were you doing? Additional details, When did the problem occur, number of votes, public view, optional contact info
RdsSpltAtInts_1	process Roads	line	1. prepare road network: all road centerlines dissolved to spaghetti	derived from centerlines and roads data	Name, Classification, SpeedLimit, Width, Lanes, Class, segTrafficVolume, LandUse (left & right), LU Risk Score, StereoType
RdsSpltAtInts_2	process Roads	line	2. prepare road network: road centerlines with cogo enabled, planarized and split at intersections	derived from centerlines and roads data	NA
Intersection_3	process Roads	point	3. prepare road network: intersection points derived from road centerlines	derived from centerlines and roads data	Rds Split At Intersection
VertexCounts_4	process Roads	point	4. prepare road network: intersection points to differentiate intersections from endpoints	derived from centerlines and roads data	Intersections Count
Intersections_5	process Roads	point	5. prepare road network: intersection points cleaned	derived from centerlines and roads data	Intersections Count
IntBuffers40m_6	process Roads	polygon	6. prepare road network: 40 meter buffer polygons generated around each intersection	derived from centerlines and roads data	Intersections Count, Buffer Distance (ft)
IntBuffers40m_6b	process Roads	polygon	6b. prepare road network: final 40 meter buffer polygons with dissolved overlapping buffers	derived from centerlines and roads data	Cross Streets Names, Buffer, Sum Severity Code, Count of Points, Priority Severity Count
IntRoadParts_7	process Roads	line	7. prepare road network: all road parts intersecting 40-met	derived from centerlines and roads data	Cross Streets Names, Buffer, Sum Severity Code, Count of Points, Priority Severity Count
RoadsNoInts_8	process Roads	line	8. prepare road network: extracted road centerlines not associated with intersection buffers	derived from centerlines and roads data	NA
Points_100m_9	process Roads	point	9. prepare road network: point features along centerlines spaced at 100 meters along centerlines	derived from centerlines and roads data	Original ID

1. Feature Datasets and Key Layers

Feature Class / Layer	Feature Dataset	Feature Type	Description	Source	Key Fields
Roads100m_10	process Roads	line	10. prepare road network: centerlines split at 100-meter distance along centerline using points	derived from centerlines and roads data	Length in Meters
ShortRdSegs_11	process Roads	line	11. prepare road network: short road segments derived along centerlines, not 100-meters in length	derived from centerlines and roads data	Length in Meters
SnapPoints_12	process Roads	point	12. prepare road network: snap points created at the midpoint of each short road segment	derived from centerlines and roads data	Length in Meters
IntersectionRoadFeatures_12	process Roads	line	12. prepare road network: intersection road centerlines dis	derived from centerlines and roads data	Intersection ID
RoadNetwork_13	process Roads	line	13. prepare road network: road centerline network layer us	derived from centerlines and roads data	Length in Meters
CrashTrends_14	process Crashes	grid	14. space-time patterns: The space time cube has aggregated 971 crash points into 240 hexagon grid locations over 20 time step intervals. Not selected.	derived from NDOT XLS crash data—not used	Pattern Type, percent hot/cold, trend scores, counts
CrashTrends_15	process Crashes	cube	15. space-time patterns: The space time cube has aggregated 971 crashpoints into 156 hexagon grid locations over 10 time step intervals. Not selected.	derived from NDOT XLS crash data—not used	Pattern Type, percent hot/cold, trend scores, counts
CrashTrends_16	process Crashes	cube	16. space-time patterns: The space time cube has aggregated 971 crashpoints into 100 hexagon grid locations over 33 time step intervals. Not selected.	derived from NDOT XLS crash data—not used	Pattern Type, percent hot/cold, trend scores, counts
CrashTrends_17	process Crashes	cube	17. space-time patterns: The space time cube has aggregated 971 points into 342 hexagon grid locations over 33 time step intervals. Not selected.	derived from NDOT XLS crash data—not used	Pattern Type, percent hot/cold, trend scores, counts
CrashTrends_18 (chosen trend)	process Crashes	cube	18. space-time patterns: Space time cube aggregated from 971 points, 342 grid locations, 33 time step intervals. This Best scenario has 1 year duration and 1000 feet distance interval. It shows 5 of the 17 possible patterns: 5 new, 2 consecutive, 11 persistent, 1 diminishing, and 9 sporadic hot spots. **Selected**	derived from NDOT XLS crash data—**selected**	Pattern Type, percent hot/cold, trend scores, counts
CrashTrends_19	process Crashes	cube	19. space-time patterns: The space time cube has aggregated 971 points into 342 hexagon grid locations over 33 time step intervals. Not selected.	derived from NDOT XLS crash data—not used	Pattern Type, percent hot/cold, trend scores, counts
AllCrashes_20142023	process Crashes	point	pre20. space-time patterns: all crashes for 10-year period	NDOT XLS crash data, MCS inputs from police reports	Crash key, date, day, time, location, severity, numinjured, numfatal, weather, lighting, crashtype, first harmful event, road surface condition, alcohol/drug related, age, contributing factors, modes, reckless, severity code
AllCrashes_20142023_Copy_20	process Crashes	point	20. space-time patterns: copy of all crashes for 10-year period	NDOT XLS crash data, MCS inputs from police reports	Crash key, date, day, time, location, severity, numinjured, numfatal, weather, lighting, crashtype, first harmful event, road surface condition, alcohol/drug related, age, contributing factors, modes, reckless, severity code
RoadCrashCounts_21	process Crashes	line	21. space-time patterns: all crashes (AllCrashes...20) joined to roads (RoadNetwork_13); crash rate calculated to attribute	derived from centerlines and crash data	Number Injured, Number Fatal, Crash Rate, Fatality Rate, Injury Rate
RoadCrashHotSpots_22	process Crashes	line	22. space-time patterns: Getis-Ord Gi* hot spot analysis performed on road crash counts features	derived from centerlines and crash data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
Fatality_HotSpots_23	process Crashes	line	23. space-time patterns: Getis-Ord Gi* hot spot analysis performed on road crash counts features for fatalities	derived from NDOT XLS crash data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
Injury_HotSpots_24	process Crashes	line	24. space-time patterns: Getis-Ord Gi* hot spot analysis performed on road crash counts features for injuries	derived from NDOT XLS crash data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
AllCrashes_20142023_Severity_OptHotspotAnalysis	process HotSpots	line	25. space-time patterns: Getis-Ord Gi* hot spot analysis	derived from centerlines and hotspot data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
AllCrashes_20142023_Severity_OptHotspotAnalysis_300ft	process HotSpots	line	26. space-time patterns: Getis-Ord Gi* hot spot analysis	derived from centerlines and hotspot data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
AllCrashes_20142023_Severity_OptHotspotAnalysis_500ft	process HotSpots	line	27. space-time patterns: Getis-Ord Gi* hot spot analysis	derived from centerlines and hotspot data	Crash rate, GiZScore, GiPValue, Nneighbors, GiBin
AllCrashes_20142023_SeverityOutlierAnalysis	process HotSpots	line	28. space-time patterns: Getis-Ord Gi* hot spot analysis	derived from centerlines and hotspot data	Severity Code and multiple outlier analysis fields

Geodatabase Metadata

1. Feature Datasets and Key Layers

Feature Class / Layer	Feature Dataset	Feature Type	Description	Source	Key Fields
BikeLane	Projects	line	Line work for proposed bicycle lanes	Consultant team	Project Key, Shape_Length
BikeLanePaint	Projects	point	Point feature; outlines of bike lane areas	Consultant team	Name, Symbol Rotation
BulbOut	Projects	polygon	Polygon set of proposed bulb out, road diet, and bridge updates	Consultant team	Name, Location (project key)
CrosswalkHV	Projects	polygon	Polygon set of proposed high visibility crosswalks	Consultant team	Name, Location, ReferencePlan, ProjectKey
CurbProposed	Projects	line	Line work of proposed curbs	Consultant team	Name (type - ie 'Yellow Solid')
HatchedPaint	Projects	polygon	Used for displaying painted pavement	Consultant team	Name, Location, Priority, ReferencePlan
Landscaping	Projects	polygon	Polygon features of proposed landscaping at project sites	Consultant team	Name, Location, Priority, ReferencePlan
PaintStripe	Projects	line	Linework, existing roadway paintlines	Consultant team	Name, Type, Color, Location, Priority, ReferencePlan
PedestrianCrossingIsland	Projects	polygon	Polygon features of proposed pedestrian islands to aid with crossing	Consultant team	Name, Location, Priority, ReferencePlan
PHB_HAWK	Projects	point	Point feature of proposed HAWK Beacons	Consultant team	Location, Reference Plan, Name
Project_Site3A_3H_anno	Projects	anno	Annotation labels for projects 3A-3H	Consultant team	Text String, Annotation Class ID, Font, Angle
ProjectRegion	Projects	polygon	Polygon features of broad project areas	Consultant team	Name
ProjectSite	Projects	point	Point features of project number, location, and project key	Consultant team	ProjKey, ProjName, Priority
RRFB	Projects	point	Point features of proposed RRFB	Consultant team	Name, Location, Priority, ReferencePlan
SharedLaneRoadway	Projects	line	Line features of proposed share the roadway signage additions	Consultant team	Name, Location, Priority, ReferencePlan
SharedUsePath	Projects	polygon	Polygon features of proposed shared use pathway additions	Consultant team	Name, ProjectKey, Location, Reference Plan, Priority
SidewalkProposed	Projects	line	Line features of proposed sidewalk additions	Consultant team	Name, Location, Priority, ReferencePlan, Width
SignProposed	Projects	point	Point features of proposed sign upgrades/additions	Consultant team	Asset Type (ie - Wayfinding Sign, Bicycle Lane sign), Project
StreetFurnitureLighting	Projects	point	Point features of proposed lighting upgrades/installations	Consultant team	Name, Location (Project Key)
StreetTree	Projects	point	Point features of proposed additional trees for landscaping	Consultant team	Location (Project Key)
AccessiblePedestrianSignal	Projects	empty	point locations of accessible pedestrian signal	Consultant team	name, location, priority, reference plan
ADARampProposed	Projects	empty	point locations of proposed ADA ramp	Consultant team	type, name, location, priority, reference plan
AdvancedWarningFlasher	Projects	empty	point locations of advanced warning flasher	Consultant team	type, name, location, priority, reference plan
BackplatesRRB	Projects	empty	point locations of backplates RRB	Consultant team	type, name, location, priority, reference plan
BicycleBoulevard	Projects	empty	line locations of bicycle boulevard	Consultant team	type, name, location, priority, reference plan
BikeSignal	Projects	empty	point locations of bike signal	Consultant team	type, name, location, priority, reference plan
GradeSeperatedCrossing	Projects	empty	point locations of grade separated crossing	Consultant team	type, name, location, priority, reference plan, width
HatchedPaint	Projects	empty	polygon locations of hatched paint	Consultant team	type, name, location, priority, reference plan
LeadingPedestrianInterval	Projects	empty	point locations of leading pedestrian interval	Consultant team	type, name, location, priority, reference plan
PavedShoulder	Projects	empty	line locations of paved shoulder	Consultant team	type, name, location, priority, reference plan
PavementMarkingProposed	Projects	empty	line locations of proposed pavement marking	Consultant team	type, name, location, priority, reference plan
PedestrianLighting	Projects	empty	point locations of pedestrian lighting	Consultant team	type, name, location, priority, reference plan
ProtectedLeftTurnSignalPhasing	Projects	empty	point locations of protected left turn signal phasing	Consultant team	type, name, location, priority, reference plan
RaisedMedian	Projects	empty	polygon locations of raised median	Consultant team	type, name, location, priority, reference plan
RaisedPedestrianCrossing	Projects	empty	polygon locations of raised pedestrian crossing	Consultant team	type, name, location, priority, reference plan
RedLightRunningCamera	Projects	empty	point locations of red light running camera - not legal in Nebraska	Consultant team	type, name, location, priority, reference plan
ReducedCurbRadii	Projects	empty	line locations of reduced curb radii	Consultant team	type, name, location, priority, reference plan
ReduceParkingAtIntersection	Projects	empty	point locations of reduce parking at intersection	Consultant team	type, name, location, priority, reference plan
RumbleStrips	Projects	empty	line locations of rumble strip	Consultant team	type, name, location, priority, reference plan
ShoulderPedestrianFacility	Projects	empty	line locations of shoulder pedestrian facility	Consultant team	type, name, location, priority, reference plan
SightDistanceImprovementLine	Projects	empty	line locations of sight distance improvement line	Consultant team	type, name, location, priority, reference plan
SignalTimingPhasing	Projects	empty	point locations of signal timing phasing	Consultant team	type, name, location, priority, reference plan
SpeedBumpHumpTable	Projects	empty	polygon locations of speed hump table	Consultant team	type, name, location, priority, reference plan
VehicleSpeedFeedbackSign	Projects	empty	point locations of vehicle speed feedback sign	Consultant team	type, name, location, priority, reference plan
YellowChangeInterval	Projects	empty	point locations of yellow change interval	Consultant team	type, name, location, priority, reference plan
Annotation1k	SidneySS4A.gdb	empty	annotation layer of 1k scale	Consultant team	type, name, location, priority, reference plan

2. Non-Spatial Tables

Table Name	Geodatabase	Description	Source	Key Fields
Cheyenne_County_Sex_by_Age_2023_ACS_B01001_AgeBuckets	SidneySS4A .gdb	Ages divided into 20 year groups (0-19, 20-39, etc) and categorized by the 8 census block group tracts	US 2020 Census	GeoID, Total, (Age Buckets for 0-19, 20-39, etc)
CheyenneCountyMedianHouseholdIncome2023ACS_B19013	SidneySS4A .gdb	Median income for the 8 census block group tracts in 2023 adjusted dollars	US 2020 Census	GeoID, Median household income in the past 12 months
CheyenneCountyPerCapitaIncome2023ACS_B19301	SidneySS4A .gdb	Per capita income for the 8 census block group tracts in 2023 adjusted dollars	US 2020 Census	GeoID, Per capita income in the past 12 months
Cheyennecountyrace2023ACS_B02001	SidneySS4A .gdb	Race breakdown provided for each block group tract in the Sidney area; multiple races listed	US 2020 Census	GeoID, various races (White alone, Black of African American alone, American Indian and Alaska Native alone, Asian alone, etc)
CheyenneCountyRaceEthnicity2023ACS_B03002	SidneySS4A .gdb	Race and ethnicity breakdown provided for each block group tract in the Sidney area	US 2020 Census	GeoID, Not Hispanic or Latino, various races listed
CheyenneCountySexByAge2023ACS_B01001	SidneySS4A .gdb	Breakdown by age and sex for the 8 census block group tracts	US 2020 Census	GeoID, Male, Female, various age groups listed
MCS_Sidney_Crash___2011_2023	SidneySS4A .gdb	Sidney Crashes from 2011-2023	NDOT	Severity, Day, Time, NumInjured, NumFatal, Weather, LightCondition, FirstHarmfulEvent, AlcoRel
Poverty_Level_ACS_2023_B17021_Cheyenne_County	SidneySS4A .gdb	Number of individuals living above and below the poverty line in the 8 census block group tracts	US 2020 Census	GeoID, TotalPovertyIncome (total number of individuals in tract), BelowPoverty, AbovePoverty
CommentsGeneral_Nov12_SnapTo	SidneySS4A.gdb	Used for creation of online commenting map	Consultant Team	Related Global ID, Content Type, Att Name, Data Size, Data
CommentsNov12_SnapToRd__ATT	SidneySS4A.gdb	Used for creation of online commenting map (BLOB)	Consultant Team	GLOBALID
TableCommentVotes_SidneySS4A	SidneySS4A.gdb	Used for creation of online commenting map	Consultant Team	Guid
TransportationHazardComments_N	SidneySS4A.gdb	Used for creation of online commenting map (BLOB)	Consultant Team	GLOBALID
VotingComments	SidneySS4A.gdb	Used for creation of online commenting map	Consultant Team	Guid

3. Data Processing and Methods

Crash Analysis: Crashes from 2014–2023 were filtered for severity and mapped using kernel density tools to define the High Injury Network.
Demographic Weighting: Equity scores were calculated by combining income, age, and race data at the block group level.
Project Prioritization: Each proposed project was scored based on crash severity, planning references, public support, and cost estimates.

4. Metadata and File Access

Each GIS layer includes embedded metadata compliant with FGDC standards. A digital version of the geodatabase (file GDB format) is available upon request or included in the project archive.

ArcGIS Projects Metadata

ArcGIS Pro Project: SidneySS4A ReportMaps			
	Map/Layout Titles	Overview/Summary	Figure
M	Commenting Map	Map formatted for **Online Crowdsource Commenting** (Transportation Hazard Reports, Comments; also contains project sites)	**Online Comments**
M	Crash Modes Online StoryMap	Crashes depicted by Mode, Emphasising Pedestrians and Bicyclists for Online StoryMap	**Online Crash Modes**
M	Crash Severitiy	Crashes depicted by Severity, all crashes from 2014-2023	
M	Crash Severity Online StoryMap	Crashes depicted by Severity, all crashes from 2014-2024; map used for plan, summary sheet, and online	**Online StoryMap**
M	Demographics	Demographics - population density map	**Maps-3**
L	Demographic Maps	Demographic map summaries of census tracts; includes percentage of poverty level, age, median income, and ethnicity	**Figs. 15, 16, 17, 18**
M	Demographics Age	Demographics - population by age pies	**Fig.16**
M	Demographics Ethnicity	Demographics - population by ethnicity pies	**Fig.17**
M	Demographics Median Income	Demographics - population by median income colors	**Fig.15**
M	Demographics Poverty	Demographics - population by poverty pies	**Fig.18**
M	Projects	Proposed updates to areas including Pole Creek Crossing and Ft Sidney Rd, Downtown, and L17J/Old Post Rd	**Proj-7**
L	Projects	Reviewing top project areas: street speed-width-class, signs, ADA ramps, points of interest, pathways, crosswalks, land use	**Maps-19**
M	TM-2	Community areas - community divided into 5 slices for tracking community engagement and responses	**Fig.9**
L	TM-2 Demographics	Response Rate vs population graphic	**Fig.9**
M	TM-3	Functional Class | Signs | Speed Limit | Crash Severity	**Fig.40; Maps-5**
L	TM-3.4	Speed Limit and Road Width, Signs, Points of Interest; **SAFETY ACTION PLAN Figure 40**	**Fig.40; Maps-5**
M	TM-4	Signs, Points of Interest, Road Width, City Boundary	**Fig.40; Maps-5**
M	TM-5	Road Classification, AADT, Road Width, Points of Interest	**Maps-4**
L	TM-5 Rd Class	Road Classification, AADT, Road Width, Points of Interest	**Maps-5**
M	TM-6	Land Use	**Maps-6**
L	TM-5-6	Average Daily Traffic and Landuse maps (incomplete)	**Maps-6**
M	TM-7	Population Ethnicity - Bivariate Colors (caucasian vs. non-caucasian)	**Maps-7**
L	TM-7 DEM	Population Ethnicity; overview of areas with higher/lower population and higher/lower proportion of white individuals	**Maps-7**
M	TM-8	Proposed Project Updates (ADA ramps, crosswalks and more)	**Maps-7**
L	TM -7-8	Pedestrians and Pedestrian Hotspots (needs repaired)	**Maps-7**
M	TM-9	Crashes by Severity and Crash Type (Pedestrian and Overturn crashes emphasized)	**Maps-7**
L	TM-8-20	Same map as TM-7-8, Pedestrians and Pedestrian Hotspots	**Maps-7**
M	TM-10	Crashes - Severity	**Fig.34**
M	TM-11	Crashes HotSpots - Pedestrians and Bicyclists	
M	TM-12	Crashes HotSpots - Pedestrians and Bicyclists	
M	TM-13	Crashes HotSpots by Hour of Day (0-6, 6-12, 12-18, 18-24)	**Maps-2**
M	TM-18	Crashes HotSpots by Year - 2014 through 2023	
M	TM-19.1	LT Leaving Crashes	**Maps-8**

ArcGIS Pro Project: SidneySS4A ReportMaps			
	Map/Layout Titles	Overview/Summary	Figure
M	TM-19.2	Angle Crashes	**Maps-8**
L	TM-19 1-2	Left Turn Leaving and Angle Crashes Heatmap	**Plan-34**
M	TM-19.3	Backing Crashes	**Maps-12**
M	TM-19.4	Front-Front Crashes	**Maps-10**
L	TM-19 3-4	Rear-End and Front-Rear Crashes Heatmap	**Maps-9**
M	TM-19.5	Front-Rear Crashes	**Maps-9**
M	TM-19.6	Rear Side Crashes	**Maps-10**
L	TM-19 5-6	Front-Front and Rear-Side Crashes Heatmap	**Maps-10**
M	TM-19.7	Rear End Crashes	**Maps-9**
M	TM-19.8	Sideswipe Same & Opposite Side Crashes	**Maps-11**
L	TM-19 7-8	Sideswipe Same & Opposite, and Rear End Crashes	**Plan-35**
M	TM-19.9	Other Unknown Crashes; Alcohol and Red Light Running	**Plan-37**
M	TM-19.10	Single Vehicle Crashes	**Maps-12**
L	TM-19 9-10	Backing and Single Vehicle Crashes Heatmap (older version; some data links need repaired)	
M	TM-20 - Pedes-trians Bicycles & Hour of Day	Pedestrians, Bicycles, and Hour of Day Crashes	**Plan-36**
M	TM-21	Crash Trends Hotspot Patterns	**Maps-13**
L	TM-21	Crash Trends Hotspot Patterns	**Fig.41; Maps-14**
M	TM-22	Street Centerlines	
M	TM-23	Public Engagement Response Areas (Bivariate Responses vs. Population)	**Fig.9**
M	TM-24	Public Engagement Response Areas (Bivariate Responses vs. Population)	**Fig.9**
M	TM-25	Public Engagement Response Areas (Bivariate Responses vs. Population)	**Fig.9**
M	TM-28	HIN - Intersection Hotspots, Injury Hotspots, Fatality Hotspots	**Maps-16**
L	TM-28	HIN - Intersection Hotspots, Injury Hotspots, Fatality Hotspots	**Fig.42**
M	TM-29	Injury Hotspots and Crash Hotspots; Intersection crash severity sum included	**Maps-17**
L	TM-29	Injury Hotspots and Crash Hotspots; Intersection crash severity sum included	**Maps-17**
M	TM-30	HIN (Intersections, RoadCrashHotSpots_22, Fatality_Hotspots_23, Injury_HotSpots_24)	
M	TM-31	High Injury Network (HIN) and Crash Hotspots	**Maps-18**
L	TM-31	High Injury Network (HIN) and Crash Hotspots	**Maps-18**
M	TM-32	Signs, Road Speed, and many additional layers	
M	TM-101	Preliminary map of crashes 2014-2023, all collisions	**Fig.20**
M	TM-102	Preliminary map of crashes 2014-2023, bicycle & pedestrian collisions	**Fig.21**
M	TM-103	Preliminary map of crashes 2014-2023, ADA ramps, crosswalks, functional class, pathway, POI, signs	**Maps-19**
M	TM-104	Preliminary map of crashes 2014-2023, signs, speeds, POI, pathways, crosswalks, ADA ramps	**Maps-19**
M	TM-105	Preliminary map of crashes 2014-2023, signs, speeds, POI, pathways, crosswalks, ADA ramps	**Maps-19**

Notes: **"Fig."** refers to figure number in Safety Action Plan. **"Plan-"** refers to page number in Safety Action Plan.
"Maps-" refers to page number in Maps Appendix.
Geodatabase: MCSJobs\RM240166-00 SS4A Sidney Safety Action Plan\05. Safety Analysis\04. Data Collection\SidneyMap\SidneySS4A.gdb

ArcGIS Projects Metadata

ArcGIS Pro Project: SidneySS4A ProjectMaps			
	Map/Layout Titles	Overview/Summary	Figure
M	1A-1B Old Post Rd and L17J Intersection	Old Post Road and Link 17J Intersection	Poster
L	1A-1B	Projects concept map (e.g. Projects 1A and 1B)	
L	1A-1B Old Post Rd and L17J Intersection	Projects concept map	Poster
M	2A-2B Underpass Closeup	13th Avenue RR Underpass	Poster
L	2A-2B Underpass Closeup	Projects concept map	Poster
L	2A-2C	Projects concept map	
M	3 All Old Post Road Corridor	Old Post Road Corridor near Link 17J, projects 3A-3H	Poster
L	3 All Old Post Road Corridor	Projects concept map	Poster
M	3A1-3H Old Post Road Corridor (160)	Old Post Road Corridor near Link 17J, projects 3A-3H	**Proj-10, Proj-11**
L	3A1-3H Old Post Road Corridor	Projects concept map	Poster
L	3A1-3H Old Post Road Corridor 31x41	Projects concept map	Poster
M	3A1-A2-C Old Post Road Corridor	Old Post Road Corridor near Link 17J, projects 3A-3C	**Proj-3, Proj-8**
L	3A1-A2-C Old Post Road Corridor	Projects concept map **PROJECTS APPENDIX**	**Proj-3, Proj-8**
L	3A-3H	Projects concept map **PROJECTS APPENDIX**	**Proj-10, Proj-11**
M	3B-D-E-F-H Old Post Road Corridor	Old Post Road Corridor near Link 17J, projects 3D-E-F-H	Poster
L	3B-D-E-F-H Old Post Road Corridor	Projects concept map	Poster
M	3G Old Post Road Corridor	Old Post Road Corridor near Link 17J, project 3G	**Proj-9**
L	3G Old Post Road Corridor	Projects concept map **PROJECTS APPENDIX**	**Proj-9**
M	3I Connect Loop Forrest (160)	Forrest Street, project 3I	**Proj-18**
L	3-I Connect Loop Forrest	Projects concept map **PROJECTS APPENDIX**	**Proj-18**
L	3I-3P Overview Map	Projects concept map	Poster
M	3J Connect Loop Linden BETTER (160)	Linden Street, project 3J	**Proj-19**
L	3-J Connect Loop Linden BETTER	Projects concept map **PROJECTS APPENDIX**	**Proj-19**
M	3K-3L Connect Loop 10th (160)	10th Avenue, projects 3K-L	**Proj-20**
L	3K-3L Connect Loop 10th	Projects concept map **PROJECTS APPENDIX**	**Proj-20**
M	3M-3P2 Connect Loop Verde Lane (160)	Verde Lane, projects 3M-N-O-P	**Proj-22**
L	3M-3P2 Connect Loop Verde Lane	Projects concept map **PROJECTS APPENDIX**	**Proj-22**
M	3Q-3T Connect Loop Ft Sidney (160)	Fort Sidney Road, projects 3Q-R-S-T	**Proj-26**
L	3Q-3T Connect Loop Ft Sidney	Projects concept map **PROJECTS APPENDIX**	**Proj-26**
M	4A-4S Downtown (160)	Downtown projects 4A-B-C-D-E-F-G-H-I-J-K-L-M-N-O-P-Q-R-S	**Proj-29**
L	4A-4S Downtown	Projects concept map **PROJECTS APPENDIX**	**Proj-29**
L	4A-4S Downtown 31x41	Projects concept map	Poster
M	Details 80	not used	—
L	Details 80	not used	—
M	Details 120	not used	—
L	Details 120	not used	—
M	Details 180	not used	—
L	Details 180	not used	—
M	Details 380	not used	—
M	Map	not used	—
M	Map1	not used	—
L	Layout1	not used	—
L	Layout4	not used	—
M	Downtown Overview	Downtown Overview Map	
M	Old Post Overview	Old Post Road Overview Map	**Proj-7**
L	Jennifer Lane Trailhead	**PROJECTS APPENDIX** page Project-7	**Proj-7**
L	Andrew Drive Cycletrack	Projects concept map **PROJECTS APPENDIX**	**Proj-7**
M	Old Post Road Corridor Poster	Old Post Road Corridor	

ArcGIS Pro Project: SidneySS4A ProjectMaps			
	Map/Layout Titles	Overview/Summary	Figure
L	Projects Old Post Road Corridor Poster	Old Post Road Corridor projects overview map	Poster
M	Pathways Overview	Pathways Overview Map	
M	Projects Overview	Projects Overview Map with project point labels	
M	TM-1 Overview	**SAFETY ACTION PLAN Figure 2**	**Fig.2**
L	Planning Area	**SAFETY ACTION PLAN Figure 2**	**Fig.2**

Notes: **"Fig."** refers to figure number in Safety Action Plan.
"Proj-" refers to page number in Maps Appendix.
"Plan-" refers to page number in Safety Action Plan.

ArcGIS Plan Document - Maps

Sidney SS4A Plan Document Maps.aprx

Name	Type
M02 - TM-12 - Time of Day 3-4 pm Crashes	Map
M02 - TM-12 - Time of Day 7-8 am Crashes	Map
M02 - TM-12 - Time of Day midnight-6 am Crashes3	Map
M02 - TM-12 - Time of Day noon-1 pm Crashes2	Map
M02 - TM-13 Peak Crash Time Trends	Map
M03 - POSTER Survey Areas	Map
M03 - TM-7 - Ethnicity	Map
M04 - 3 Hotspot Comments	Map
M04 - 3b Hotspot Comments	Map
M05 - TM-4 - Road Width	Map
M06 - TM-5 - ADT	Map
M06 - TM-5 - ADT and Classification	Map
M06 - TM-6 - Land Use	Map
M07 - TM-8 - Projects Working Map	Map
M07 - TM-20 - PedestriansBicycles & Hour of Day	Map
M09 - TM-19.3 - Rear-End Crashes	Map
M09 - TM-19.4 - Front-Rear Crashes	Map
M15 - 3 Hotspot Comments1	Map
M16 - TM-29 - Injury Hotspots	Map
M16-M17-M18 - TM-30 - All Crash Hotspots	Map
M17 - TM-28 - Crash Hotspots	Map
M19 - Safety Project Screening Map	Map
P09 - TM-1 Overview	Map
P16 M15 - Comments Centerlines	Map
P16 Prioritizing Projects - Public Comments	Map
P20 TM-2 - Response Percentages	Map
P22 Demographics Age	Map
P22 Demographics Ethnicity	Map
P22 Demographics Median Income	Map
P22 Demographics Poverty	Map
P24 Comparison Cities	Map
P25 Fig.20 - TM-101 - All Collisions	Map
P25 Fig.21 - TM-102 - Ped & Cycle Collisions	Map
P29 Crash Severity	Map
P30 M05 - TM-4 - Speed Limit	Map
P31, M13-14 - TM-21 - Crash Trends	Map
P32 M18 - TM-31 - HIN	Map
P34 - TM-19.10 - Single Vehicle Crashes	Map
P34 M08 - TM-19.1 - Left Turn Leaving Crashes	Map
P34 M08 - TM-19.2 - Angle Crashes	Map
P35 - TM-19.7 - Sideswipe Same Crashes	Map
P35 - TM-19.8 - Sideswipe Opp Crashes	Map
P36-37 - Crash Type Toolkit	Map
TFM-009 - Crash Locations Working Map	Map
TFM-010 - Intersection vs Non-Int Crash Working...	Map
TFM-011 - Monthly Crashes	Map
TFM-019.5 - Front Front Crashes	Map
TFM-019.6 - Rear Side Crashes	Map
TFM-019.9 - Backing Crashes	Map
TFM-022 - Streets	Map
TFM-023 - Response Population	Map
TFM-032 - Speed and Signs	Map
TFM-40 Demographics with Bar Charts	Map
TFM-103 - FC & KSIs Working Map	Map
TFM-104 - KSIs and Speed Working Map	Map
TFM-105 - KSIs and Jurisdiction Working Map	Map
TFM#2 PPT - TM-18 Crash Trends Yearly	Map
WEB Commenting Map	Map
WEB Crash Modes Online StoryMap	Map
WEB Crash Severity	Map
WEB Crash Severity Online StoryMap	Map

ArcGIS Plan Document - Map Layouts

Sidney SS4A Plan Document Maps.aprx

Name	Type
M02 Crash Peak Time Trends	Layout
M03 Ethnicity	Layout
M04 3.3b Comments and Crashes Hotspots	Layout
M05 Speed and Rd Width	Layout
M06 ADT and LandUse	Layout
M07 Pedestrians and Pedestrian Hotspots	Layout
M08 LTLeaving Angle	Layout
M09 RearEnd FrontRear	Layout
M10 FrontFront RearSide	Layout
M11 SideswipeOpp SideswipeSame	Layout
M12 Backing SingleVehicle	Layout
M15 Public Comments	Layout
M16 Injury and AllCrash Hotspots	Layout
M17 Fatality and All Crash Hotspots	Layout
M19 Safety Project Screening MF	Layout
P09 Planning Area	Layout
P16 Public Comments	Layout
P20 Response Areas	Layout
P22 Demographics (Income, Age, Ethnicity, Poverty)	Layout
P29 Crash Severity	Layout
P30 Road Classification	Layout
P30, M05 Speed Limit and Road Width	Layout
P31, M13-14 Crash Trends	Layout
P32, M18 HIN and AllCrash Hotspots	Layout
P34, M08 LTLeaving Angle	Layout
P35, M09 RearEnd FrontRear	Layout
P35, M11 SideswipeSame SideswipeOpp	Layout
P36-37 Crash Type Toolkit KSIs and Heatmap	Layout

ArcGIS Sidney SS4A Projects - Maps/Layouts

Sidney SS4A Projects Appendix Maps.aprx

Plan 09 Fig2 - TM-1 Overview	Map
Poster - 1A-B, 3A1-3H Old Post Road Corridor (160)	Map
Poster - Old Post Road Corridor	Map
Project-07 Old Post Overview	Map
Project-08 - 3A1-A2-C Old Post Road Corridor	Map
Project-10 & Split Poster 3B-D-E-F-H Old Post Road Corridor	Map
Project-11 3 All Old Post Road Corridor	Map
Project-19,20 3JKL Connect Loop 10th (160)	Map
Project-22 3M-3P2 Connect Loop Verde Lane (160)	Map
Project-26 3Q-3T Connect Loop Ft Sidney (160)	Map
Project-29, Poster - 4A-4S Downtown (160)	Map
Project 03 - 1A-1B Old Post Rd and L17J Intersection	Map
Project 09 - 3G Old Post Road Corridor	Map
Projects-05,18 2A-2B 3I Connect Loop Forrest (160)	Map
REF ONLY - 2A-2B Underpass Closeup	Map
REF ONLY - 3J Connect Loop Linden (160)	Map
REF ONLY - Details 080	Map
REF ONLY - Details 120	Map
REF ONLY - Details 180	Map
REF ONLY - Downtown Overview	Map
REF ONLY - Pathways Overview	Map
REF ONLY - Projects Overview	Map

Plan 09 Fig2 - Planning Area	Layout
Poster - 1A-B 3A1-3H Old Post Road Corridor	Layout
Poster - 4A-4S Downtown 31x41	Layout
Poster - Old Post Road Corridor 31x41	Layout
Poster - Projects Old Post Road Corridor	Layout
Project-03 - 1A-1B Old Post Rd and L17J Intersection	Layout
Project-05 - 2A-2B Underpass Closeup	Layout
Project-07 - Andrew Drive Cycletrack	Layout
Project-08 - 3A1-A2-C Old Post Road Corridor	Layout
Project-09 - 3G Old Post Road Corridor	Layout
Project-10 - 3B-D-E-F-H Old Post Road Corridor	Layout
Project-11 - 3 All Old Post Road Corridor	Layout
Project-18 - 3-I Connect Loop Forrest	Layout
Project-19 - 3-J Connect Loop Linden	Layout
Project-20 - 3K-3L Connect Loop 10th	Layout
Project-22 - 3M-3P2 Connect Loop Verde Lane	Layout
Project-26 - 3Q-3T Connect Loop Ft Sidney	Layout
Project-29, Poster - 4A-4S Downtown	Layout
REF ONLY - 1A-1B	Layout
REF ONLY - 2A-2C	Layout
REF ONLY - 3A-3H	Layout
REF ONLY - Details 80	Layout
REF ONLY - Jennifer Lane Trailhead	Layout