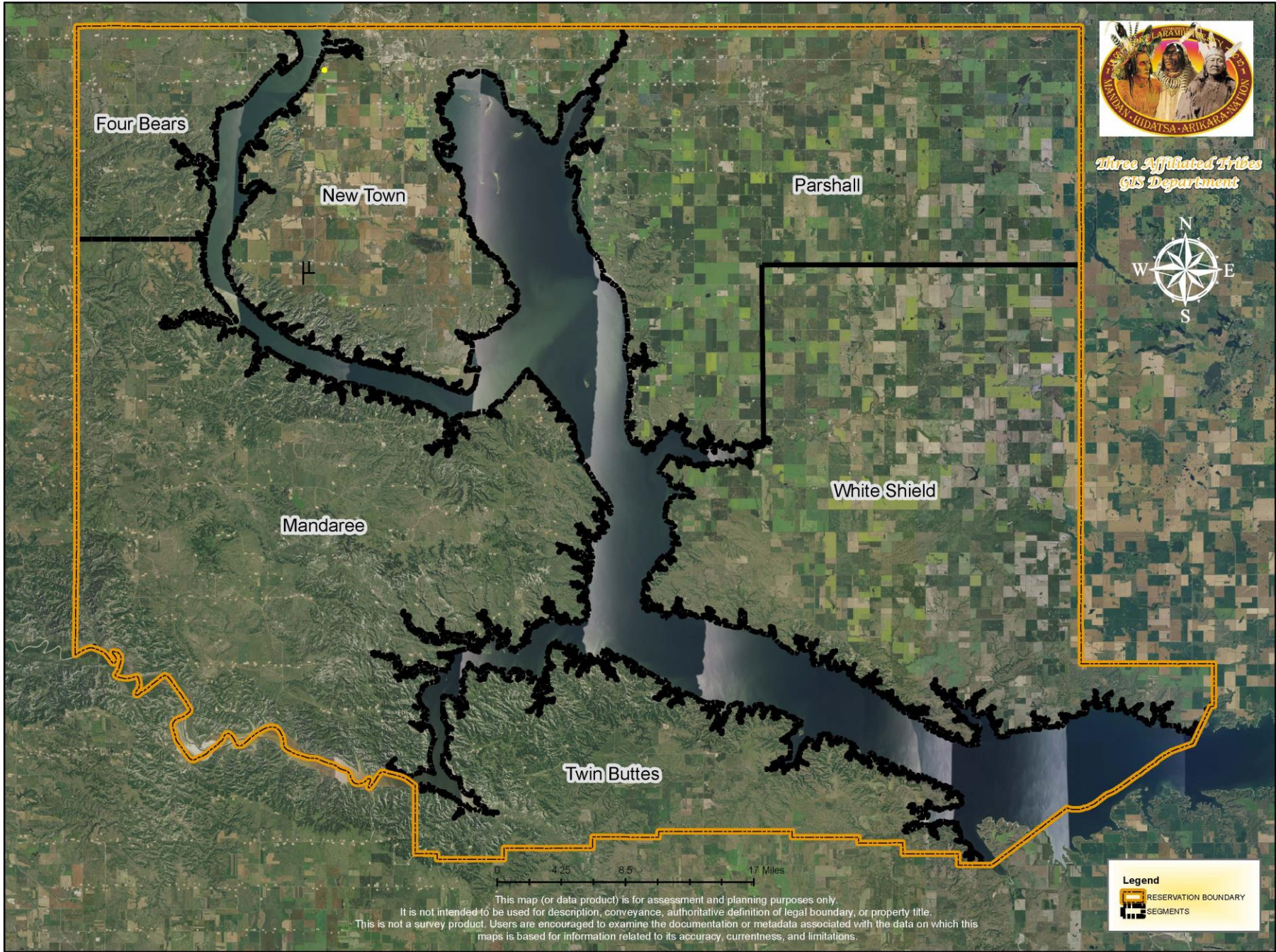# Transportation GIS Review

Tanya Sand-Driver
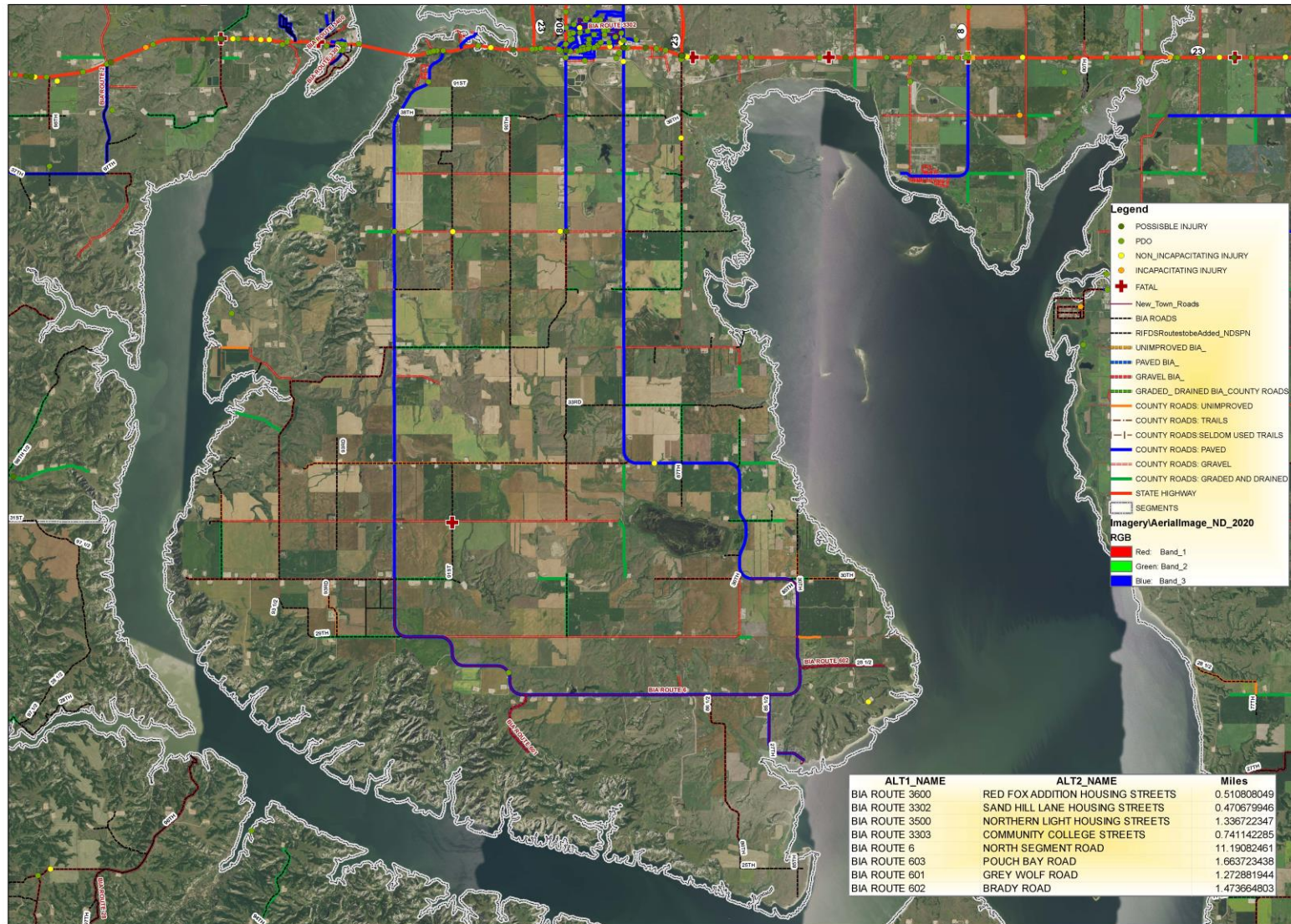
TAT GIS Director

Three Affiliated Tribes

- Fort Berthold Indian Reservation consists of 988,000 acres
- Divided by six segments: North, South, East, Northeast, West, and Four Bears Segment.
- Also divided by six counties: Dunn, Mercer, Mountrail, McKenzie, Mclean, and Ward.

Four Bears

New Town

Parshall

Mandaree

White Shield

Twin Buttes

0   4.25   8.5   17 Miles

Three Affiliated Tribes
GIS Department

Legend

RESERVATION BOUNDARY

SEGMENTS

North Segment-New Town

Legend

- ● POSSISBLE INJURY
- ● PDO
- ● NON_INCAPACITATING INJURY
- ● INCAPACITATING INJURY
- ✚ FATAL
- — New_Town_Roads
- ----- BIA ROADS
- ----- RIFDSRoutestobeAdded_NDSPN
- ▦ UNIMPROVED BIA_
- ▬ PAVED BIA_
- ▬ GRAVEL BIA_
- ▦ GRADED_ DRAINED BIA_COUNTY ROADS
- — COUNTY ROADS: UNIMPROVED
- —·— COUNTY ROADS: TRAILS
- —I— COUNTY ROADS:SELDOM USED TRAILS
- — COUNTY ROADS: PAVED
- ----- COUNTY ROADS: GRAVEL
- — COUNTY ROADS: GRADED AND DRAINED
- — STATE HIGHWAY
- ▭ SEGMENTS

Imagery\AerialImage_ND_2020

RGB

- ▬ Red: Band_1
- ▬ Green: Band_2
- ▬ Blue: Band_3

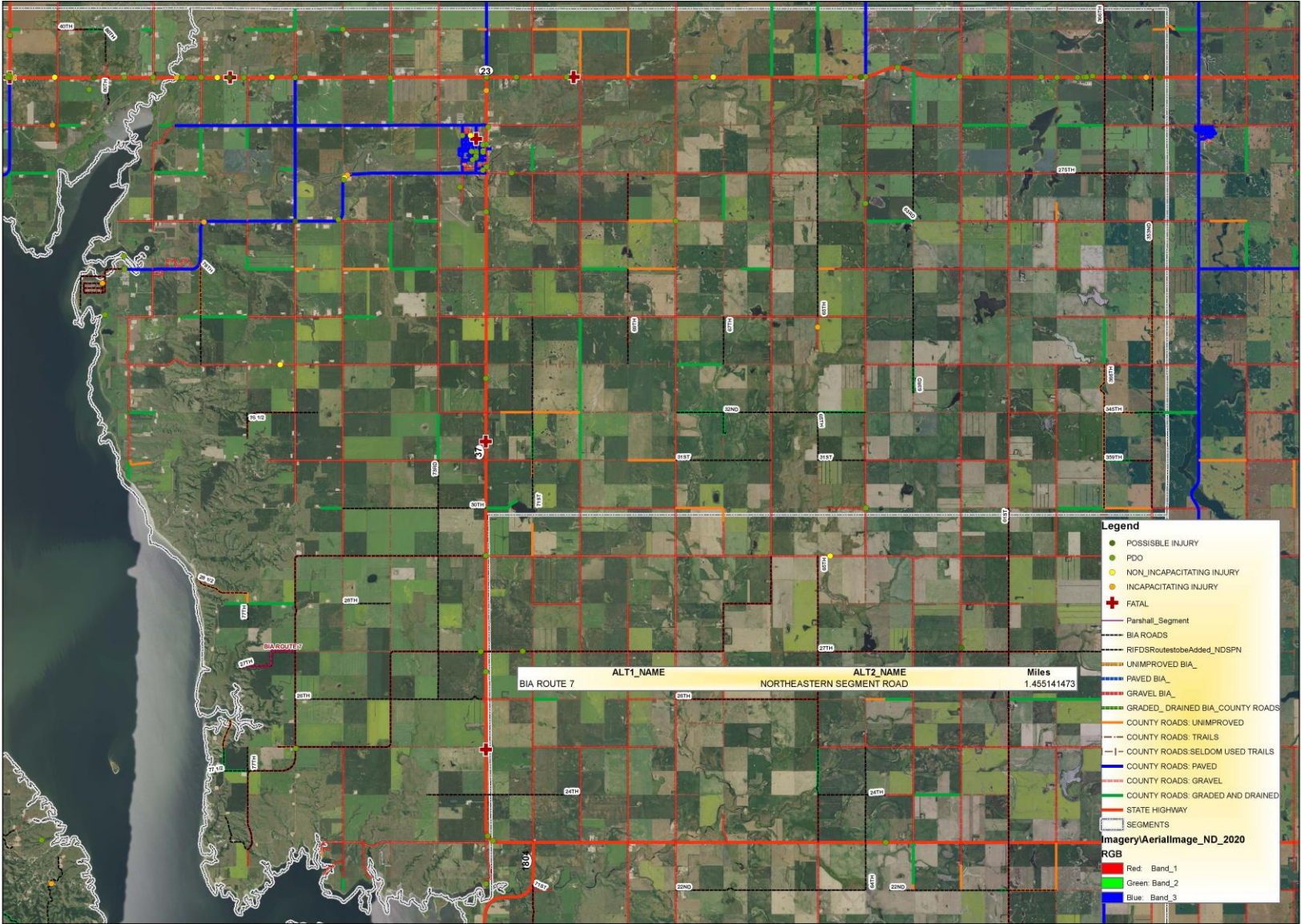| ALT1_NAME	ALT2_NAME	Miles
BIA ROUTE 3600	RED FOX ADDITION HOUSING STREETS	0.510808049
BIA ROUTE 3302	SAND HILL LANE HOUSING STREETS	0.470679946
BIA ROUTE 3500	NORTHERN LIGHT HOUSING STREETS	1.336722347
BIA ROUTE 3303	COMMUNITY COLLEGE STREETS	0.741142285
BIA ROUTE 6	NORTH SEGMENT ROAD	11.19082461
BIA ROUTE 603	POUCH BAY ROAD	1.663723438
BIA ROUTE 601	GREY WOLF ROAD	1.272881944
BIA ROUTE 602	BRADY ROAD	1.473664803

FORT BERTHOLD
INDIAN RESERVATION
NEW TOWN NORTH SEGMENT ROADS
CRASH DATA

0   1.75   3.5   7 Miles

1 in = 2 miles

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or metadata associated with the data on which this maps is based for information related to its accuracy, currentness, and limitations.
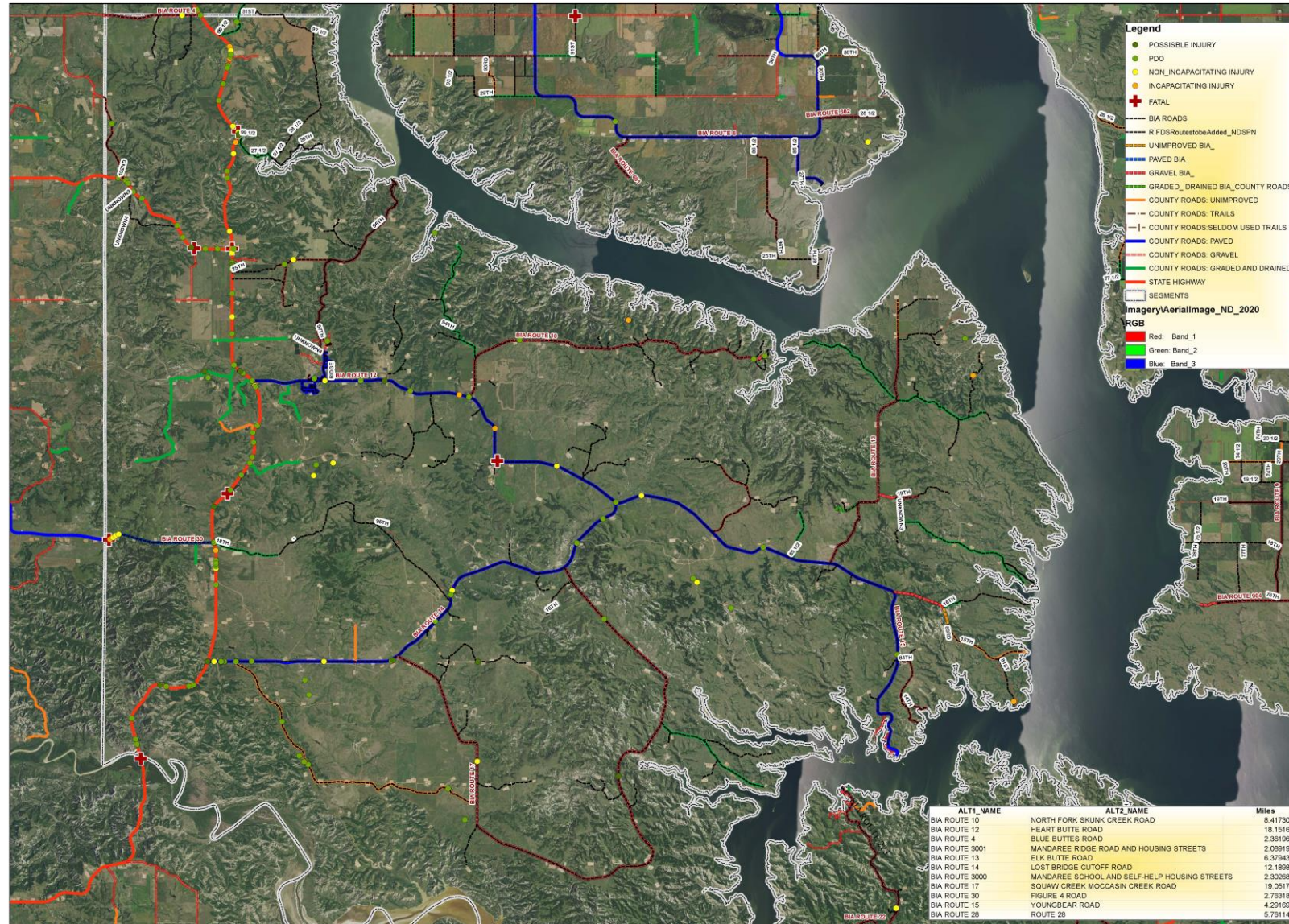
N
W   E
S

NorthEast Segment-Parshall

Legend

- POSSISBLE INJURY
- PDO
- NON_INCAPACITATING INJURY
- INCAPACITATING INJURY
- FATAL
- Parshall_Segment
- BIA ROADS
- RIFDSRoutestobeAdded_NDSPN
- UNIMPROVED BIA_
- PAVED BIA_
- GRAVEL BIA_
- GRADED_ DRAINED BIA_COUNTY ROADS
- COUNTY ROADS: UNIMPROVED
- COUNTY ROADS: TRAILS
- COUNTY ROADS:SELDOM USED TRAILS
- COUNTY ROADS: PAVED
- COUNTY ROADS: GRAVEL
- COUNTY ROADS: GRADED AND DRAINED
- STATE HIGHWAY
- SEGMENTS

Imagery\AerialImage_ND_2020
RGB
- Red: Band_1
- Green: Band_2
- Blue: Band_3

ALT1_NAME	ALT2_NAME	Miles
BIA ROUTE 7	NORTHEASTERN SEGMENT ROAD	1.455141473

FORT BERTHOLD
INDIAN RESERVATION
PARSHALL NE SEGMENT ROADS
CRASH DATA

| 0 | 2.25 | 4.5 | 9 Miles |

1 in = 2 miles

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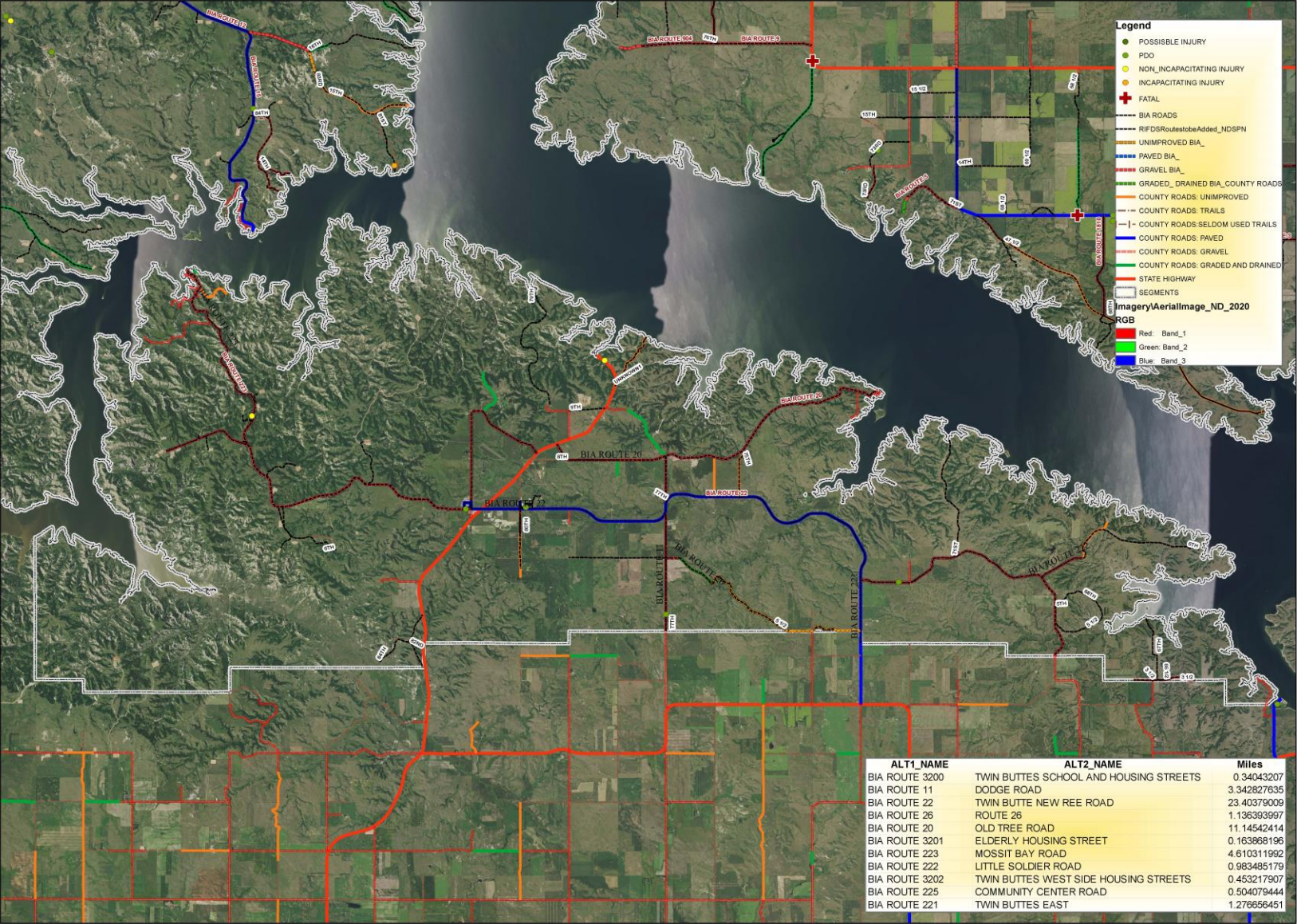
West Segment-Mandaree

Legend

- POSSISBLE INJURY
- PDO
- NON_INCAPACITATING INJURY
- INCAPACITATING INJURY
- FATAL
- BIA ROADS
- RIFDSRoutestobeAdded_NDSPN
- UNIMPROVED BIA_
- PAVED BIA_
- GRAVEL BIA_
- GRADED_ DRAINED BIA_COUNTY ROADS
- COUNTY ROADS: UNIMPROVED
- COUNTY ROADS: TRAILS
- COUNTY ROADS:SELDOM USED TRAILS
- COUNTY ROADS: PAVED
- COUNTY ROADS: GRAVEL
- COUNTY ROADS: GRADED AND DRAINED
- STATE HIGHWAY
- SEGMENTS

Imagery\AerialImage_ND_2020
RGB
- Red: Band_1
- Green: Band_2
- Blue: Band_3

ALT1_NAME	ALT2_NAME	Miles
BIA ROUTE 10	NORTH FORK SKUNK CREEK ROAD	8.417302278
BIA ROUTE 12	HEART BUTTE ROAD	18.15160402
BIA ROUTE 4	BLUE BUTTES ROAD	2.361960136
BIA ROUTE 3001	MANDAREE RIDGE ROAD AND HOUSING STREETS	2.089199442
BIA ROUTE 13	ELK BUTTE ROAD	6.379431575
BIA ROUTE 14	LOST BRIDGE CUTOFF ROAD	12.18985937
BIA ROUTE 3000	MANDAREE SCHOOL AND SELF-HELP HOUSING STREETS	2.302684673
BIA ROUTE 17	SQUAW CREEK MOCCASIN CREEK ROAD	19.05172453
BIA ROUTE 30	FIGURE 4 ROAD	2.763183435
BIA ROUTE 15	YOUNGBEAR ROAD	4.291699341
BIA ROUTE 28	ROUTE 28	5.761140464

FORT BERTHOLD
INDIAN RESERVATION
WEST SEGMENT ROADS
CRASH DATA

0   2.5   5   10 Miles
1 in = 2 miles

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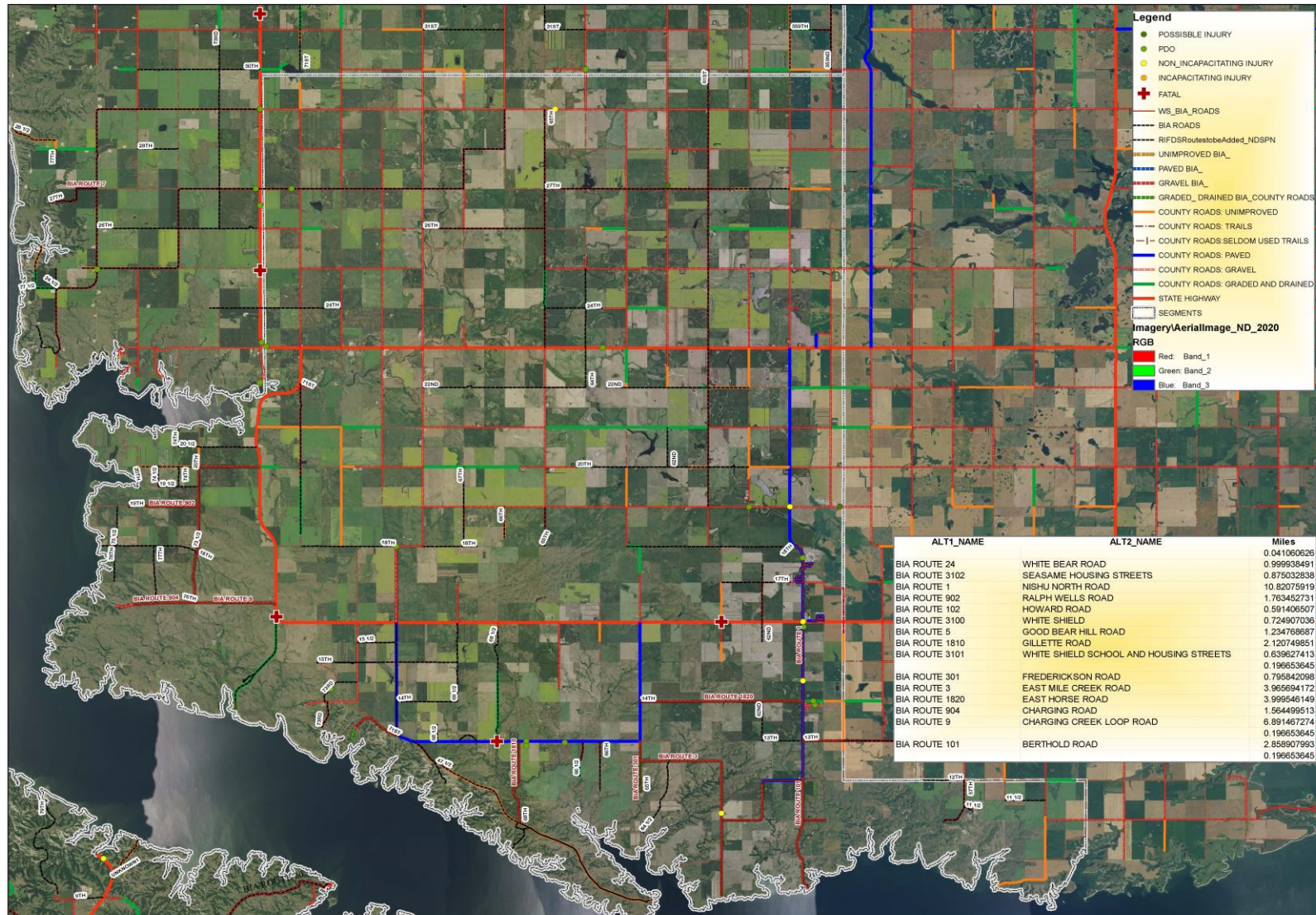
South Segment-Twin Buttes

Legend

- ● POSSIBLE INJURY
- ● PDO
- ● NON_INCAPACITATING INJURY
- ● INCAPACITATING INJURY
- ✚ FATAL
- ---- BIA ROADS
- ---- RIFDSRoutestobeAdded_NDSPN
- ▬ UNIMPROVED BIA_
- ▬▬ PAVED BIA_
- ▬▬ GRAVEL BIA_
- ▬▬ GRADED_ DRAINED BIA_COUNTY ROADS
- ---- COUNTY ROADS: UNIMPROVED
- ---- COUNTY ROADS: TRAILS
- -|- COUNTY ROADS: SELDOM USED TRAILS
- ▬▬ COUNTY ROADS: PAVED
- ---- COUNTY ROADS: GRAVEL
- ▬▬ COUNTY ROADS: GRADED AND DRAINED
- ▬▬ STATE HIGHWAY
- SEGMENTS

Imagery\AerialImage_ND_2020
RGB

- Red: Band_1
- Green: Band_2
- Blue: Band_3

ALT1_NAME	ALT2_NAME	Miles
BIA ROUTE 3200	TWIN BUTTES SCHOOL AND HOUSING STREETS	0.34043207
BIA ROUTE 11	DODGE ROAD	3.342827635
BIA ROUTE 22	TWIN BUTTE NEW REE ROAD	23.40379009
BIA ROUTE 26	ROUTE 26	1.136393997
BIA ROUTE 20	OLD TREE ROAD	11.14542414
BIA ROUTE 3201	ELDERLY HOUSING STREET	0.163868196
BIA ROUTE 223	MOSSIT BAY ROAD	4.610311992
BIA ROUTE 222	LITTLE SOLDIER ROAD	0.983485179
BIA ROUTE 3202	TWIN BUTTES WEST SIDE HOUSING STREETS	0.453217907
BIA ROUTE 225	COMMUNITY CENTER ROAD	0.504079444
BIA ROUTE 221	TWIN BUTTES EAST	1.276656451

FORT BERTHOLD
INDIAN RESERVATION
SOUTH SEGMENT ROADS
CRASH DATA

0   2   4   8 Miles

1 in = 2 miles

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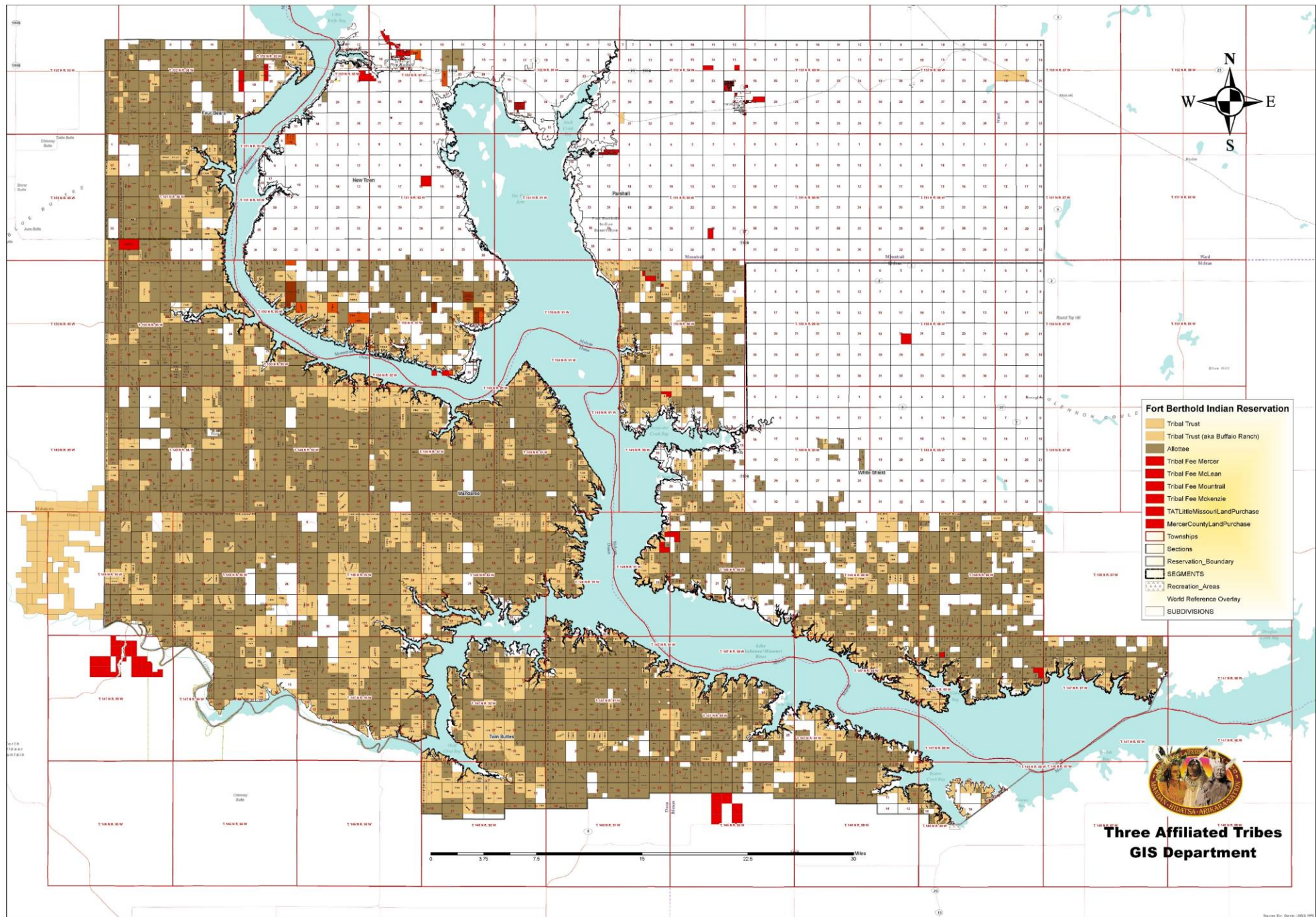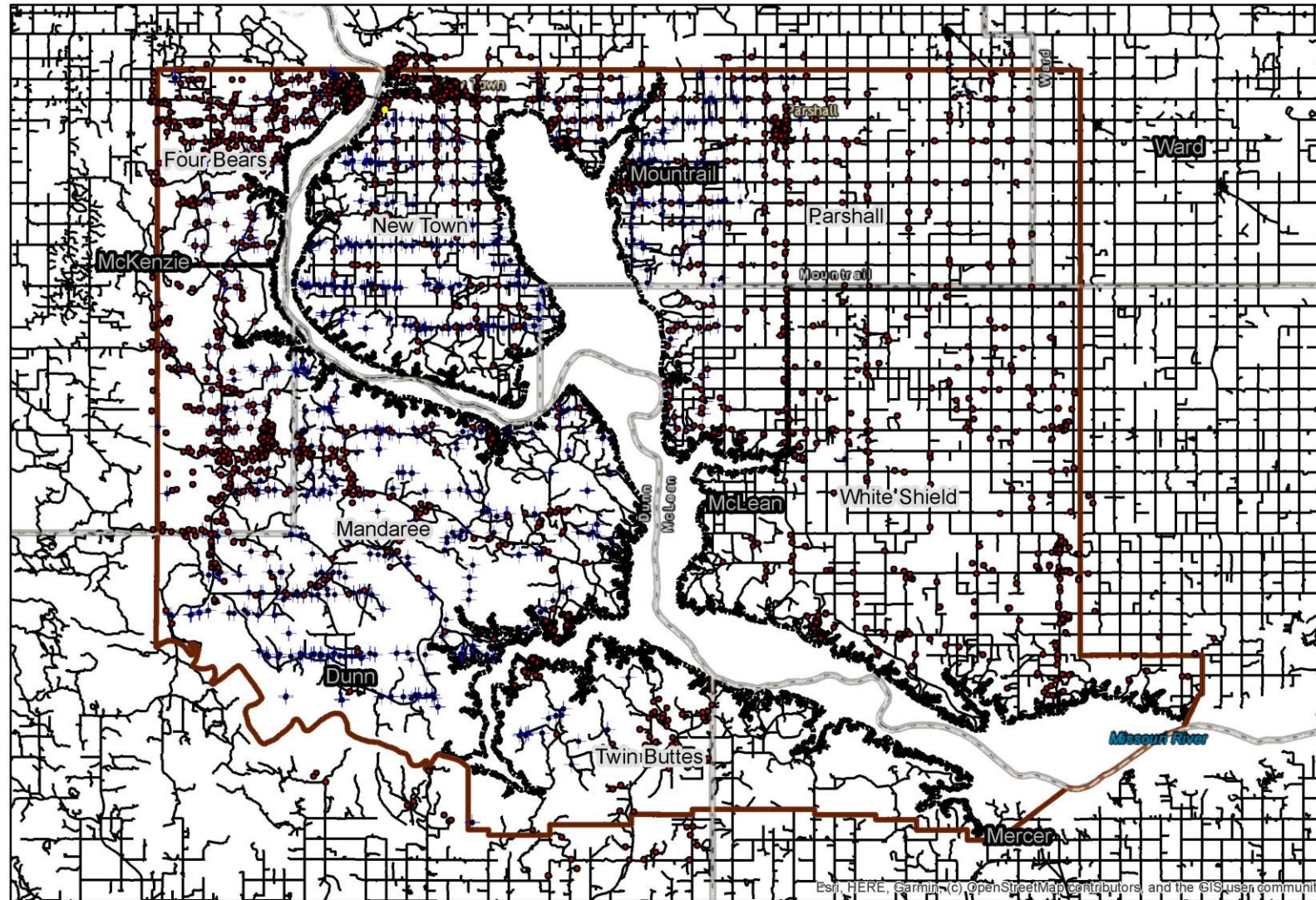
East Segment-White Shield

Legend

- POSSISBLE INJURY
- PDO
- NON_INCAPACITATING INJURY
- INCAPACITATING INJURY
- FATAL
- WS_BIA_ROADS
- BIA ROADS
- RIFDSRoutestobeAdded_NDSPN
- UNIMPROVED BIA_
- PAVED BIA_
- GRAVEL BIA_
- GRADED_ DRAINED BIA_COUNTY ROADS
- COUNTY ROADS: UNIMPROVED
- COUNTY ROADS: TRAILS
- COUNTY ROADS:SELDOM USED TRAILS
- COUNTY ROADS: PAVED
- COUNTY ROADS: GRAVEL
- COUNTY ROADS: GRADED AND DRAINED
- STATE HIGHWAY
- SEGMENTS

Imagery\AerialImage_ND_2020

RGB
- Red: Band_1
- Green: Band_2
- Blue: Band_3

ALT1_NAME	ALT2_NAME	Miles
		0.041060626
BIA ROUTE 24	WHITE BEAR ROAD	0.999938491
BIA ROUTE 3102	SEASAME HOUSING STREETS	0.875032838
BIA ROUTE 1	NISHU NORTH ROAD	10.82075919
BIA ROUTE 902	RALPH WELLS ROAD	1.763452731
BIA ROUTE 102	HOWARD ROAD	0.591406507
BIA ROUTE 3100	WHITE SHIELD	0.724907036
BIA ROUTE 5	GOOD BEAR HILL ROAD	1.234768687
BIA ROUTE 1810	GILLETTE ROAD	2.120749851
BIA ROUTE 3101	WHITE SHIELD SCHOOL AND HOUSING STREETS	0.639627413
		0.196653645
BIA ROUTE 301	FREDERICKSON ROAD	0.795842098
BIA ROUTE 3	EAST MILE CREEK ROAD	3.965694172
BIA ROUTE 1820	EAST HORSE ROAD	3.999546149
BIA ROUTE 904	CHARGING ROAD	1.564499513
BIA ROUTE 9	CHARGING CREEK LOOP ROAD	6.891467274
		0.196653645
BIA ROUTE 101	BERTHOLD ROAD	2.858907993
		0.196653645

FORT BERTHOLD
INDIAN RESERVATION
EAST SEGMENT ROADS
CRASH DATA

0   2.5   5   10 Miles
1 in = 2 miles

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N
W   E
S

Fort Berthold Indian Reservation

- Tribal Trust
- Tribal Trust (aka Buffalo Ranch)
- Allottee
- Tribal Fee Mercer
- Tribal Fee McLean
- Tribal Fee Mountrail
- Tribal Fee Mckenzie
- TATLittleMissouriLandPurchase
- MercerCountyLandPurchase
- Townships
- Sections
- Reservation_Boundary
- SEGMENTS
- Recreation_Areas
- World Reference Overlay
- SUBDIVISIONS

Three Affiliated Tribes
GIS Department

Roads, 911 Points, Active Oil Wells

911 Points and Roads

This map application was prepared with geographic information system (GIS) data created by the Three Affiliated Tribes GIS, or other contributing agencies. These entities do not warrant or guarantee the accuracy or suitability of GIS data for any purpose. The GIS data within this application is intended to be used as a general index to spatial information and not intended for detailed, site-specific analysis or resolution of legal matters.

Legend
- FBIR_911_Add
- FBIR ACTIVE WELLS
- RESERVATION BOUNDARY
- Census_Bureau_TIGER_Roads
- SEGMENTS
- COUNTY_BOUNDARY

Demographic Segment Maps

- Available on the MHA Nation Website Department Directory under the GIS (Geographical Information Systems).

- https://www.mhanation.com/geographic-information-systems

GIS -Transportation Responsibility

- Upkeep of an accurate inventory of roads for the Three Affiliated Tribes.
- Cross referencing shapefiles and data from BIA, six counties, NDDOT, TIGER census for data accuracy
  - FBIR Road Lengths differ from other entities
- Road surface and type
  - Gravel, Paved, Trail, etc.
  - Maintained by:Tribe or County

    Researching Right of Way

      Requesting Title Status Report from BIA

    Road Drawings

      Georeferencing

	Local Access		BIA		State		County		Municipal/ Tribal	
	# of Routes	Mileage	# of Routes	Mileage	# of Routes	Mileage	# of Routes	Mileage	# of Routes	Mileage
Twin Buttes	16	9.8	52	50.1	1	8.1	42	33.1		
Mandaree	81	85.1	57	76.8	2	24.7	56	75.5		
Four Bears	32	22.7	11	11.4	2	18.2	26	24.7		
New Town	10	2.8	14	13.7	6	15.5	163	162.7	81	8.7
Parshall	3	4.3	1	1.4	1	30.6	254	410.9	42	10
White Shield	4	1.2	47	54.2	1	41.5	220	313.5		
Totals	146	125.9	182	207.6	13	138.6	761	1020.4	123	18.7

Miles 1511.2
Routes 1225

	White Shield		Parshall		New Town		Four Bears		Mandaree		Twin Buttes	
	# of Routes	Mileage										
Grade and Drain	22	25.1	42	34.8	13	6.3	3	3.4	9	12	3	2.2
Gravel	92	182.1	110	234.6	71	68.3	16	14.9	44	72.1	48	43.2
Paved	24	47.4	31	44.5	107	48.3	9	6.7	28	20.9	17	11.2
Trail	102	103.1	77	97.1	47	47.5	10	12.1	29	44.9	24	25.2
Unimproved	25	27.7	32	25.1	16	14.6	1	0.5	4	3.4	3	2.8
	265	385.4	292	436.1	254	185	39	37.6	114	153.3	95	84.6

Miles 1282 mileage discrepancy is due inconsistent data
Routes 1059

- Road system and network is the foundation to many other GIS responsibilities to the Three Affiliated Tribes.
- Emergency Management
  - Ambulance, Law Enforcement, Fire;
- 911 Systems-Next Gen 911
  - 3 to 4 names for a road;
  - Emergency care delayed due to the question of fastest route
  - Counties use Burkle Addressing System; each county has a different Schema
- Homesites
  - Roads need to be named for an accurate 911 and delivery addressing with the county it is located in.
- Snow Routes
  - Maintenance of gravel and snow removal; enrolled members on a county maintained road.
- Elder Routes
- Bus Routes
- Access Roads to Well Sites
  - These roads not inventoried, Private Roads, ROW

Database Management

- RIFDs System
- GRIT System
- TAT Standalone

Ongoing Tasks

- Purchasing and upgrading Equipment for accuracy of field data
- Collaborating with TSRC (Tribal Safety Regulatory Commission)
- Collaborating with State Entities: NDDOT, 911
- Collaborating with County Offices for Roads, 911, Homesite, Land Ownership
- Drone Technology
- Quick Road survey, precise mapping, land surveys, inspections of bridges and road construction
- Training of staff working along with local engineers Brosz