

Investigation area

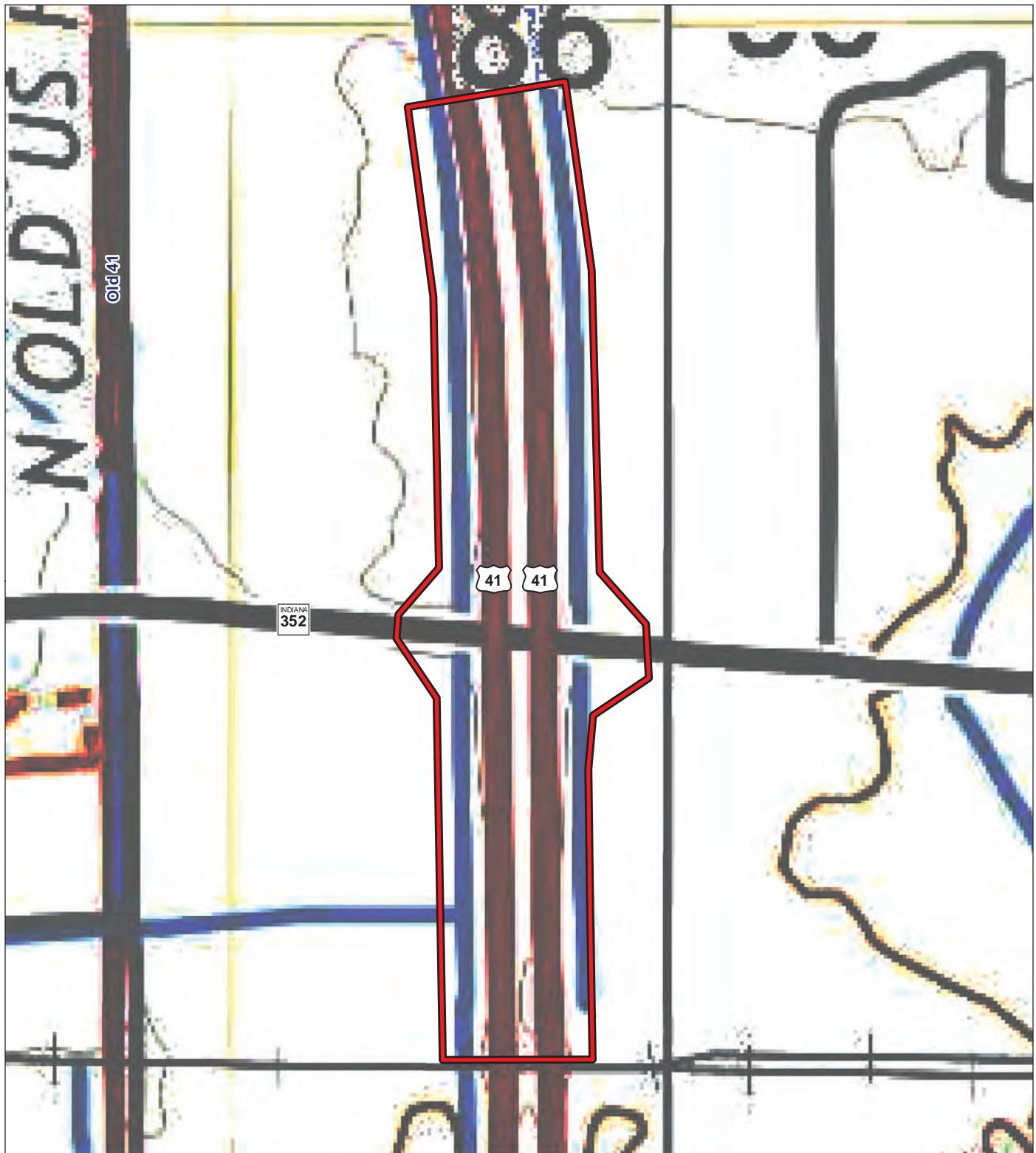
A scale bar with three horizontal lines. The top line is labeled 'Meters' and has tick marks at 0, 200, 400, 600, 800, and 1000. The middle line is labeled 'Feet' and has tick marks at 0, 1000, 2000, and 3000. The bottom line is unlabeled.



Figure 2

Portions of the 2022 Boswell and 2022 Fowler, Indiana quadrangles (USGS 7.5' topographic maps) showing the US 41 and SR 352 Intersection Improvement Project (INDOT Des. No. 2100058) investigation area.

Base: USGS Boswell and Fowler, Indiana,
7.5' series quadrangles



Investigation area

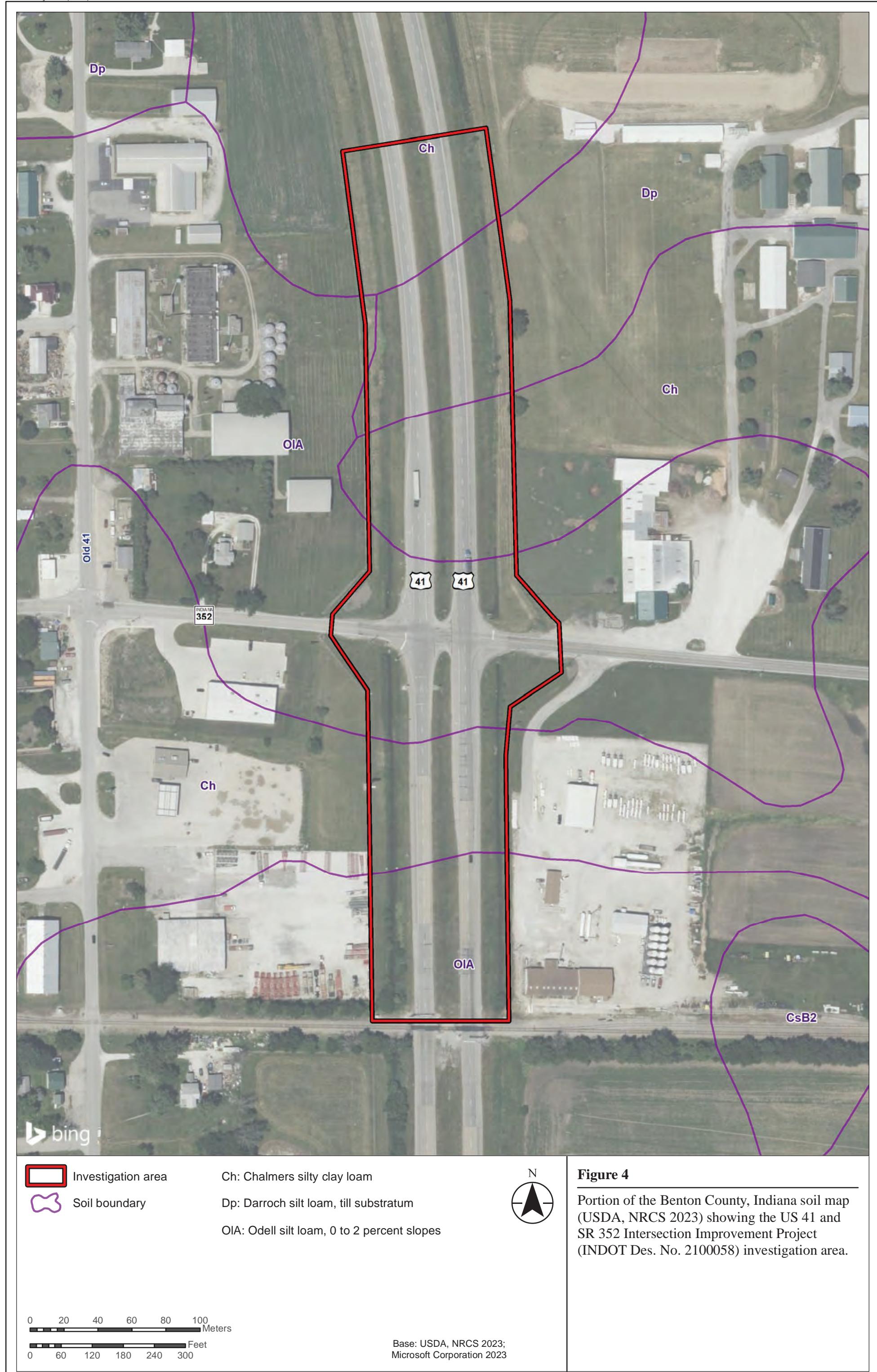
0 20 40 60 80 100 Meters
0 100 200 300 Feet

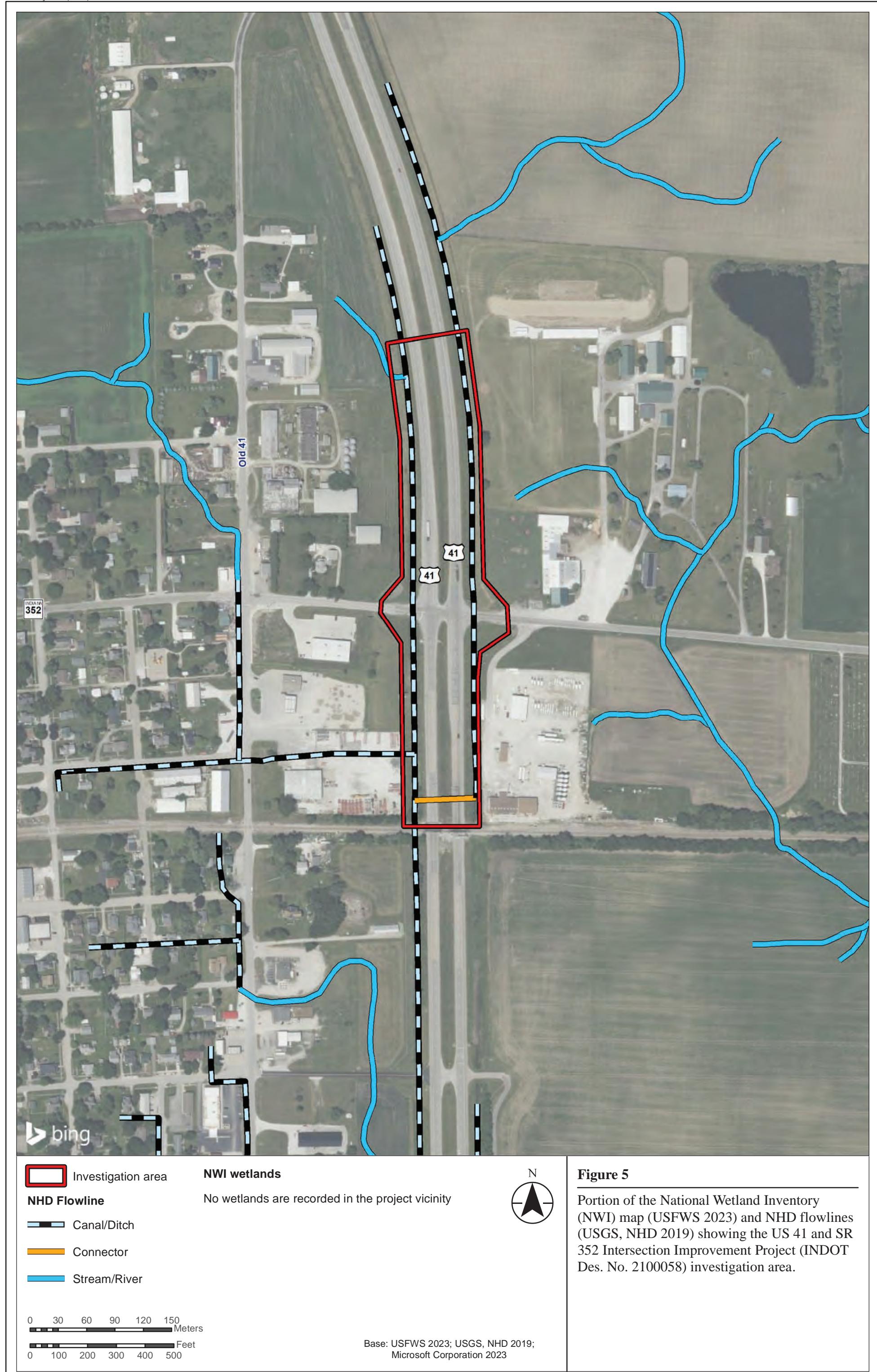


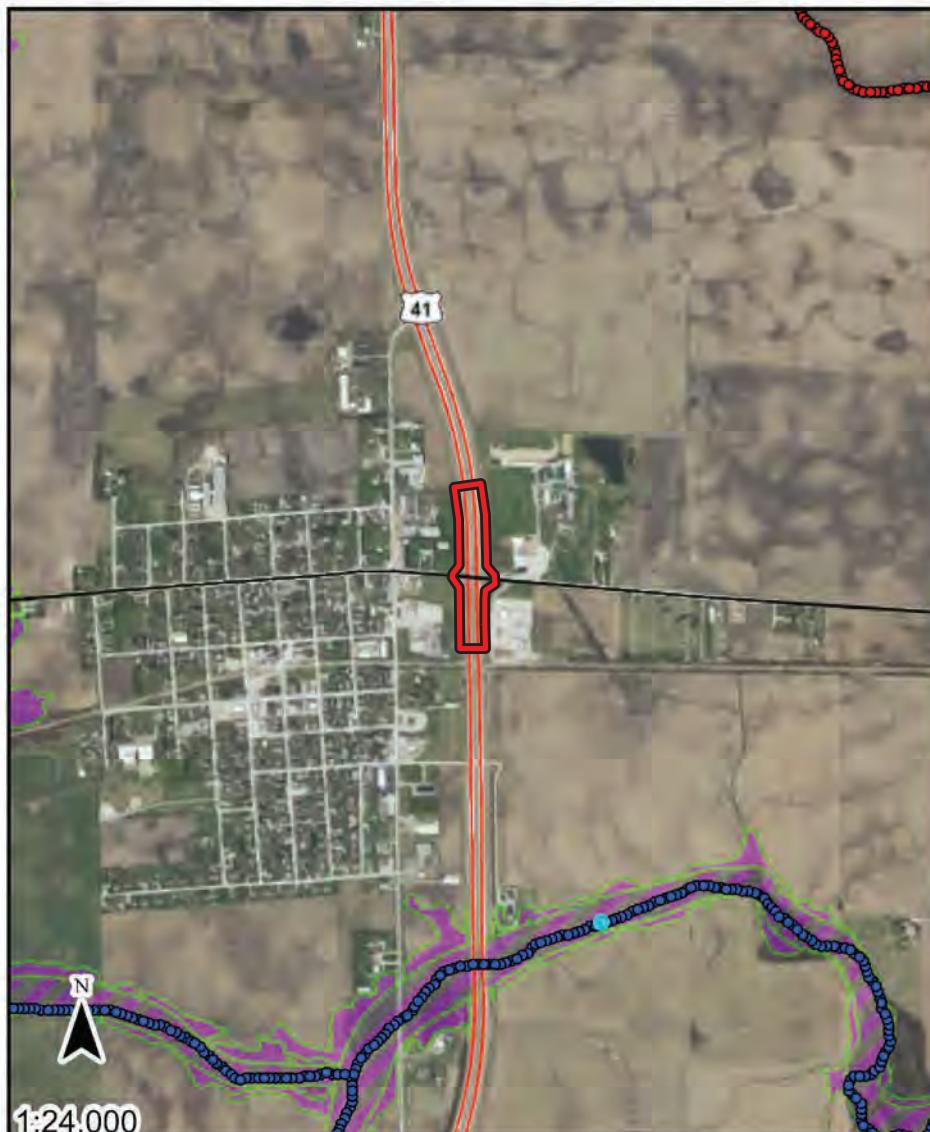
Figure 3

Zoomed in portions of the 2022 Boswell and 2022 Fowler, Indiana quadrangles (USGS 7.5' topographic maps) showing the US 41 and SR 352 Intersection Improvement Project (INDOT Des. No. 2100058) investigation area.

Base: USGS Boswell and Fowler, Indiana,
7.5' series quadrangles







Long: -87.375925935679

Lat: 40.521196518813156

The information provided below is based on the point of interest shown in the map above.

County: **Benton**

Approximate Ground Elevation: **758.0 feet (NAVD88)**

Stream Name:

Goose Creek

Base Flood Elevation: **737.5 Feet (NAVD88)**

Drainage Area: **Not Available**

Best Available Flood Hazard Zone: **Not Mapped**

National Flood Hazard Zone: **Not Mapped**

Is a Flood Control Act permit from the DNR needed for this location? **See following pages**

Is a local floodplain permit needed for this location? **Contact your local Floodplain Administrator-**

Floodplain Administrator: No Floodplain Administrator Name Available

Community Jurisdiction: **Benton County, County proper**

Date Generated: 10/30/2023

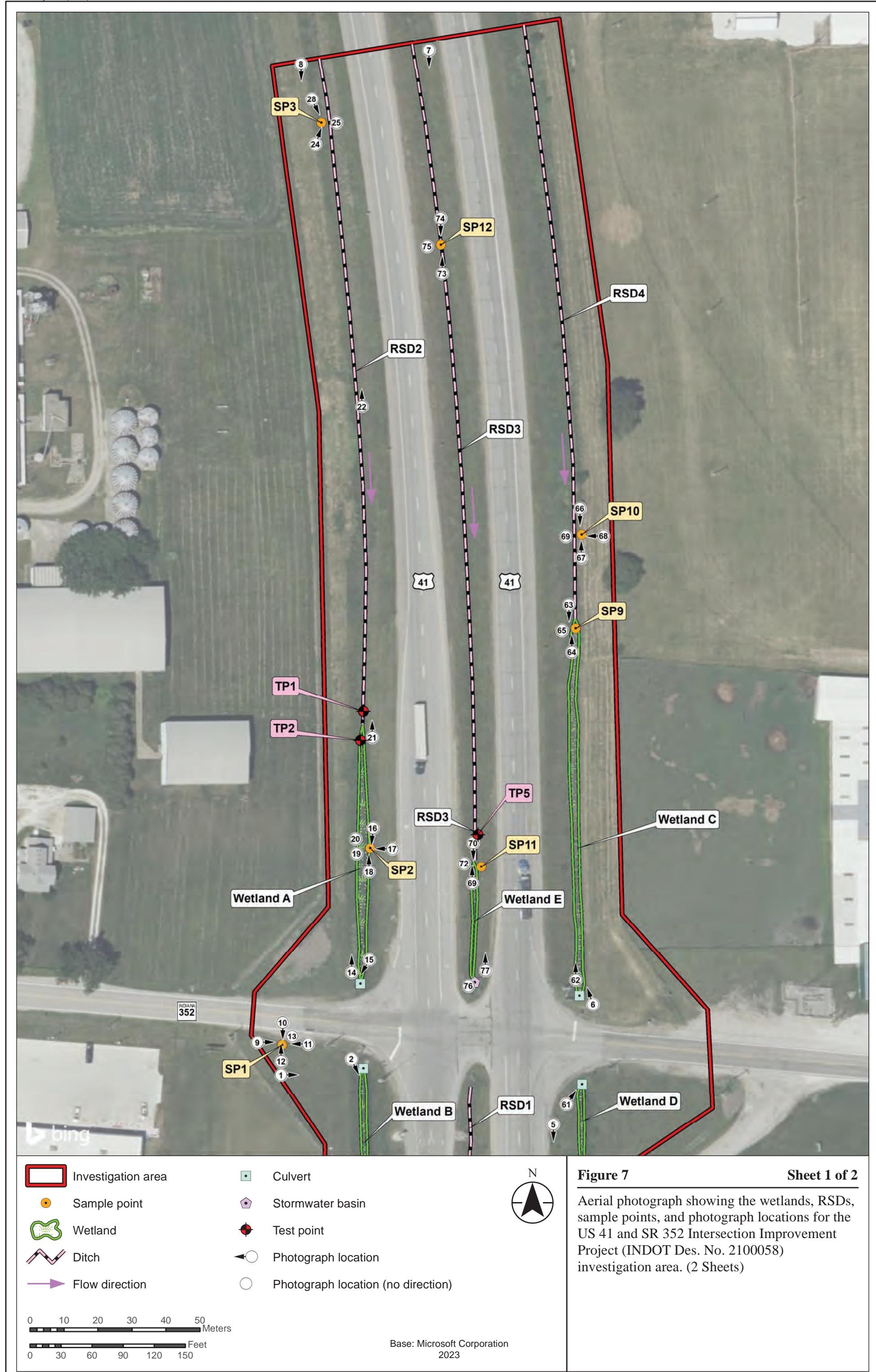
Phone: **No Phone Number Available**

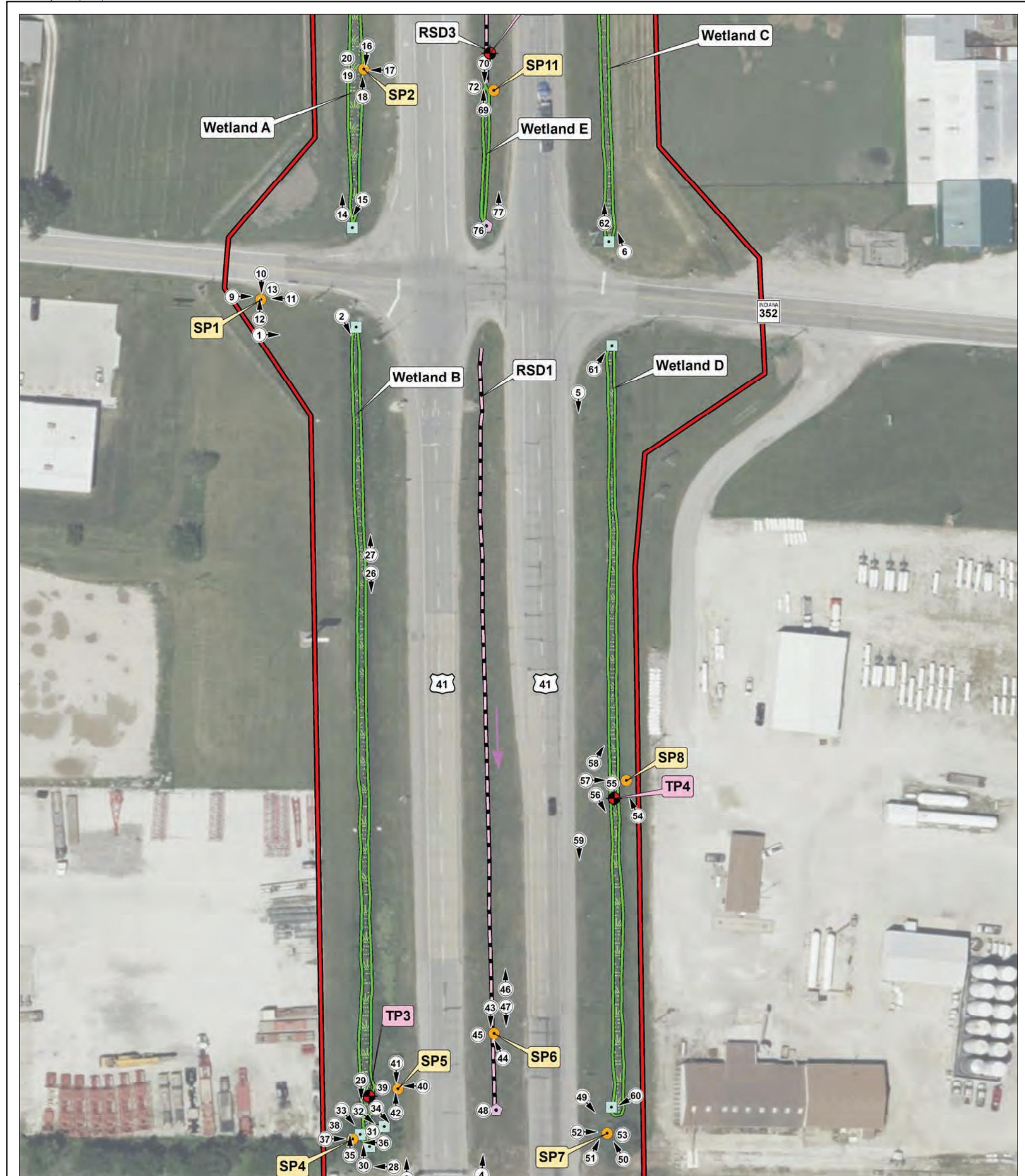
Figure 6

Email: **No Email Address Available**

Portion of the IDNR Best Available Floodplain map for the US 41 and SR 352 Intersection Improvement Project (INDOT Des. No. 2100058) investigation area.

US Army Corps of Engineers District: **Louisville**





bing

Investigation area

Culvert

N

● Sample point

Stormwater basin

● Wetland

Test point

■ Ditch

← Photograph location

—→ Flow direction

Photograph location (no direction)

0 10 20 30 40 50 Meters

0 30 60 90 120 150 Feet

Base: Microsoft Corporation
2023

Figure 7

Sheet 2 of 2

Aerial photograph showing the wetlands, RSDs, sample points, and photograph locations for the US 41 and SR 352 Intersection Improvement Project (INDOT Des. No. 2100058) investigation area. (2 Sheets)

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 1. The right-of-way (ROW) with the southwestern quadrant of the intersection between US 41 and SR 352 with Wetland B in the background, looking east.



Photograph 2. View of the typical roadway swale and Wetland B, within the ROW adjacent to west of US 41, south of SR 352, looking southeast.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 3. View from the southern boundary of the investigation area, west of US 41, looking north.



Photograph 4. View from the southern boundary of the investigation area within the US 41 roadway median and RSD1, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 5. View of the eastern US 41 roadway swale and Wetland D adjacent to US 41 and south of the SR 352 intersection, looking south.



Photograph 6. View of the eastern roadway swale and Wetland C adjacent to US 41 and north of the SR 352 intersection, looking northwest.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 7. View from the northern boundary of the investigation area within the US 41 roadway median and RSD3, looking south.



Photograph 8. View of the western roadway swale and RSD2 adjacent to US 41 near the northern investigation boundary, looking south.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 9. View of upland SP1 which describes the top slope mowed and maintained lawns within the US 41 and SR 352 ROW, looking east.



Photograph 10. View of SP1 adjacent to SR 352, looking south.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 11. View of SP1 where no evidence of wetland vegetation or hydrology were observed, looking west.



Photograph 12. View of SP1, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 13. View of upland SP1 soils.



Photograph 14. View of Wetland A within the western roadway swale of US 41 from the culvert inlet at SR 352, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 15. View of Wetland A and the culvert inlet which flows south under SR 352 leading to Wetland B, looking southwest.



Photograph 16. View of SP2 documenting Wetland A and Wetland B within the western roadway swale of US 41, looking south.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 17. View of SP2 (Wetland A) dominated by hydrophytic narrowleaf cattail (*Typha angustifolia*) and sandbar willow (*Salix interior*), looking west.



Photograph 18. View of SP2 (Wetland A) which is part of the US 41 roadway swale and conveys stormwater runoff to the south, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 19. View of the soil profile of SP2 (Wetland A) which met the Depleted Below Dark Surface (A11) and Depleted Matrix (F3) hydric soil indicators.



Photograph 20. Water was observed within the SP2 (Wetland A) soil pit indicating a Dry-Season Water Table (C2) wetland hydrology indicator.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 21. View of the wetland-upland edge of Wetland A (TP1) and RSD2 (TP2) where an abrupt change in vegetation communities was observed, north of SP2 and west of US 41, looking north.



Photograph 22. Typical view of the western US 41 roadside swale documented in SP3 and recorded as RSD2, which provides hydrology for Wetland A, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 23. View of upland SP3, which documents RSD2, the western US 41 roadway swale, looking southeast.



Photograph 24. View of SP3 within the concave roadway swale of RSD2 and dominated by barnyard grass (*Echinochloa crus-galli*), perennial ryegrass (*Lolium perenne*), and whorled milkweed (*Asclepias verticillata*), looking northeast.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 25. View of the soils of SP3 (RSD2) which did not meet any hydric soil indicator.



Photograph 26. View of Wetland B dominated by narrowleaf cattail (*Typha angustifolia*) near the southern and downstream outlet of the SR 352 road culvert west of US 41, looking south.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 27. View of Wetland B from the US 41 roadway embankment, south of the SR 352 intersection, looking north.



Photograph 28. View of the southern terminus of Wetland B where hydrology enters a culvert under the train tracks, looking west.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 29. View of the culvert inlet for Wetland B at its southern terminus within the investigation area, looking south.



Photograph 30. View of Wetland B TP3 (blue arrow), an unknown (red arrow) culvert outlet, and the southern US 41 culvert outlet (yellow arrow) from southern culvert inlet, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 31. View of the evidence in the form of tracks, indicating possible wildlife habitat at the southern culvert cluster.



Photograph 32. View of the southern US 41 culvert outlet which captures flow from the eastern and median roadside swales, looking southeast.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 33. View of the southern culvert inlet which collects hydrology from Wetland B, an unknown outlet, and the southern US 41 road culvert, looking southeast.



Photograph 34. View of the southern US 41 road culvert outlet discharging into Wetland B from RSD1 and Wetland D, looking southeast.

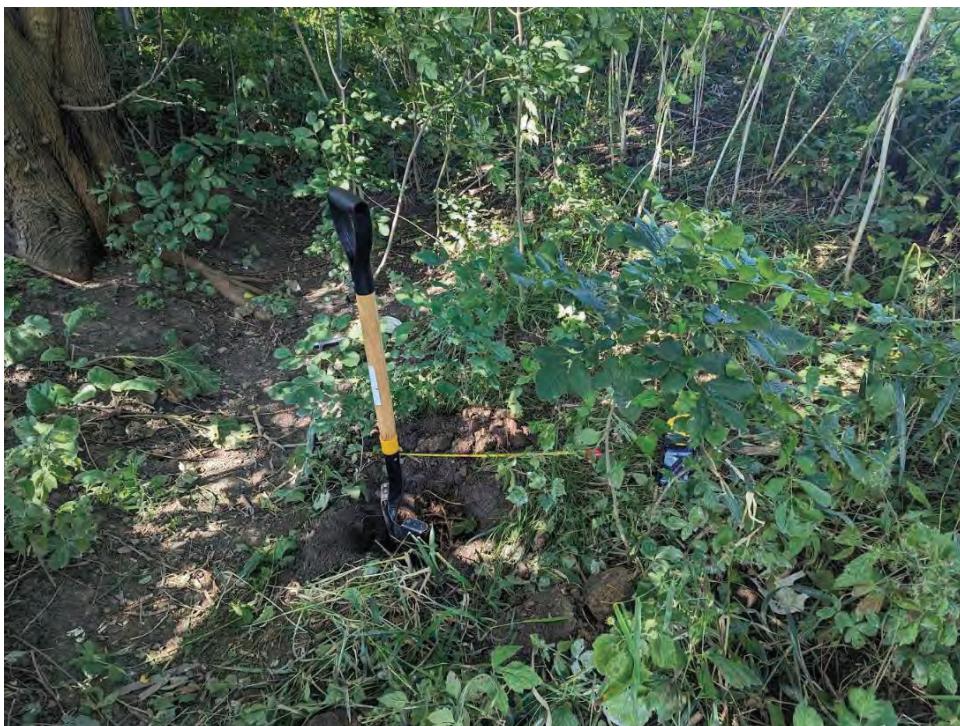
US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 35. View of upland SP4 within the toe slopes of the unmanaged vegetation community adjacent to the southern terminus of Wetland B, looking north.



Photograph 36. View of SP4 which was dominated by white ash (*Fraxinus americana*), poison ivy (*Toxicodendron radicans*), and orchard grass (*Dactylis glomerata*), looking west.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 37. View of SP4 upslope from Wetland B and TP3, looking east.



Photograph 38. View of the soil profile of SP4 which met the Depleted Below Dark Surface (A11) and Depleted Matrix (F3) hydric soil indicators.



Photograph 39. View of the soil profile found at upland SP5 upslope from Wetland B, which met the Redox Dark Surface (F6) hydric soil indicator.



Photograph 40. View of SP5 which documents the sloped embankment which contains hydrophytic vegetation reed canary grass (*Phalaris arundinacea*) and narrowleaf cattail (*Typha angustifolia*) but met no other wetland criterion, looking west.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 41. View of SP5 adjacent and upslope from Wetland B, looking south.



Photograph 42. View of SP5 between US 41 and Wetland B, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 43. View of upland SP6 within the US 41 roadway median swale, RSD1, looking south.



Photograph 44. View of SP6 within the concave US 41 roadway swale (RSD1) where vegetation was dominated by reed canary grass (*Phalaris arundinacea*), smooth brome (*Bromus inermis*), and tall fescue (*Schedonorus arundinaceus*), looking northwest.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 45. View of the soils of SP6 (RSD1) which did not meet any hydric soil indicator and where coarse fragment refusal as observed at 12-inches.



Photograph 46. View of the US 41 roadway median (RSD1) swale, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 47. View of the US 41 roadway median (RSD1), looking south.



Photograph 48. View of the stormwater inlet basin found at the southern terminus of RSD1. This basin captures flow from RSD1 and outlets to the west into Wetland B.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 49. View of the top slope area adjacent to the eastern US 41 roadside swale, and Wetland D, near the southern border of the investigation area, looking southeast.



Photograph 50. View of upland SP7, adjacent to Wetland D, which was taken on the top slope terrace where hydrophytic vegetation, reed canary grass (*Phalaris arundinacea*) was found to be dominant but met no other wetland criteria, looking northwest.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 51. View of SP7 upslope from the eastern US 41 roadside swale and Wetland D, looking northeast.



Photograph 52. View of SP7 which did not meet the wetland hydrology or hydric soil criteria, but did contain hydrophytic vegetation, looking east.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 53. View of the soil profile found at SP7 which do not meet any hydric soil indicators.



Photograph 54. View of upland SP8 which was taken on the eastern roadway shoulder, opposite US 41, and upslope from the US 41 roadway swale and Wetland D, looking northwest.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 55. View of the SP8 soil profile which did not meet any hydric soil indicator.



Photograph 56. View of Wetland D near SP8 and TP4 within the eastern US 41 roadway swale, looking southeast.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 57. View of TP4 within Wetland D adjacent to SP8 within the eastern US 41 roadway swale, looking east.



Photograph 58. View of the eastern US 41 embankment above Wetland D, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 59. View of the US 41 eastern embankment above Wetland D, looking south.



Photograph 60. View of the culvert outlet within Wetland D which divides hydrology between Wetland C and D found at the southeastern quadrant of the intersection between US 41 and SR 352, looking southwest.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 61. View of the culvert outlet within Wetland D found at the southeastern quadrant of the intersection between US 41 and SR 352 which divides Wetland C and D, looking northeast.



Photograph 62. View from the culvert inlet at the northeastern quadrant of the intersection between US 41 and SR 352 within Wetland C, looking north.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 63. View of SP9 documenting Wetland C and Wetland D within the eastern US 41 roadway swale which was dominated by silky dogwood (*Cornus amomum*) and reed canary grass (*Phalaris arundinacea*), looking south.



Photograph 64. View of SP9 near the boundary of Wetland C, adjacent to the RSD4 and SP10, within the eastern US 41 concave

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023

roadway swale, looking north.



Photograph 65. View of the soil profile found at SP9 which met Depleted Below Dark Surface (A11) and Depleted Matrix (F3) hydric soil indicators.



Photograph 66. View of the wetland-upland border at RSD4 and Wetland C, looking south.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 67. View of upland SP10 taken in RSD4, upslope from SP9 and Wetland C, where no indicators of wetland vegetation were observed, looking north.



Photograph 68. View of SP10 which was taken to document RSD4 and the boundary of Wetland C within the eastern US 41 roadway swale, north of US 352, looking west.

US 41 and SR 352 Intersection Improvement (INDOT Des. No. 2100058)

Grant Township, Benton County, Indiana

Photographs taken on August 22, 2023



Photograph 69. View of the soil profile found at SP10 (RSD4) which met the Depleted Below Dark Surface (A11) and Depleted Matrix (F3) hydric soil indicators.



Photograph 70. View of SP11 representing Wetland E within the US 41 roadway median swale which contained hydrophytic vegetation narrowleaf cattail (*Typha angustifolia*) north of SR 352, looking

south.



Photograph 71. View of SP11 (Wetland E) within the concave roadway swale, looking north.



Photograph 72. View of the soil profile of Wetland E found at SP11 which met the Redox Dark Surface (F6) hydric soil indicator.