INDIANA DEPARTMENT OF TRANSPORTATION

Waters Resource Manual: Identifying and Documenting Waters of the United States (WOTUS) and Waters of the State

INDOT Ecology, Waterway Permitting, and Stormwater Office

Revised March 2026

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1. Introduction

The purpose of the Waters Resource Manual is to provide guidance on how to complete a waters report for the Indiana Department of Transportation (INDOT). This document has been designed to address the majority of scenarios and may not be appropriate for more complex scenarios, such as reports addressing long corridor projects. If you encounter a scenario not covered in this guidance, or are seeking guidance for more complex projects, please reach out to INDOT Ecology, Waterway Permitting, and Stormwater Office (EWPSO) staff. INDOT EWPSO contact information can be found on the EWPSO webpage. This manual is not intended to replace the applicable federal and state regulatory agency guidance.

A. Background

The waters report is completed as part of the National Environmental Policy Act (NEPA) process. The report provides documentation of the federal and state jurisdictional wetland and stream features and other non-jurisdictional features within a project area (including areas for access and material or equipment staging for the project). The report documents site conditions prior to disturbance and identifies water resources for avoidance and minimization of impacts. It is used to determine and support the quantity and type of impacts as well as mitigation requirements reported in the permit application. The regulatory agencies use the report during their evaluation of the permit application. A well-written and accurate report may preclude the need for an agency field visit to complete a jurisdictional determination. The report is also used to minimize INDOT regulatory compliance risk. The report may be used for administrative appeals, compliance monitoring, enforcement, and legal actions.

B. Getting Started

i. **Consultant Pre-Qualification.** To complete a waters investigation and report for INDOT, a consultant must be pre-qualified by INDOT under the qualifications listed in the current Consultant Prequalification Manual. For further information see the resources on the Consultants Prequalification webpage.

ii. **When to complete a Waters Report.** Consider the following questions when evaluating whether a waters report is required:

- Did the Red Flag Investigation (RFI) indicate water resources in the project area?
- Is there potential for water resources to be in the project area?
- Does the project scope indicate the potential to impact water resources?
- Will there be permanent impacts to a potential water resource such as fill, encapsulation, lost linear footage, or relocation?
- Will there be temporary impacts to a potential water resource such as causeways, cofferdams, pump-arounds, or other measures?
- Will site access result in permanent or temporary impacts to potential water resources?

A “yes” answer to any of these questions would indicate that the project likely requires a WOTUS report. If you answer “no” to all of these questions and the project area is within a floodway, or if it is not clear if a Waters Report is needed, reach out to the EWPSO District Ecologist assigned to the district where the project is located for guidance. The current assignment map can be found on the EWPSO webpage.

iii. **Report Completion and Review.** There are several phases leading to a complete waters report: 1) completion of the desktop survey, 2) collection of field data, 3) finalization of a draft report, and 4) INDOT EWPSO review and approval.

The EWPSO District Ecologist is responsible for reviewing and approving most waters reports for their district. The project may also be reviewed by another EWPSO Ecologist based on EWPSO workload. EWPSO staff do not review reports for Local Public Agency (LPA) projects. First drafts should be submitted by creating a folder in ProjectWise (instructions for how to do this can be found here) and sending an email to the EWPSO District Ecologist and copying the appropriate Team Lead, including a link to the document for review. The report will be evaluated based on the waters report checklist, but not exclusively. See the EWPSO webpage for the current version of the waters report checklist. Subsequent drafts should be provided similarly. Approved documents will have the EWPSO District Ecologist’s signature on the first page.

iv. **Report Expiration.** A waters report is valid for five years from the first field date. The permit will need to be issued prior to the end of the five-year period. The relevant permitting agencies may require an updated report to validate current conditions if permit submittal is near the end of the five years.

v. **Report Updates.** If the waters report expiration date is approaching, an updated report may be required to reverify the water resources in the investigated area. Or if the project scope or footprint expands, an updated waters report will be required to determine the presence or absence of regulated resources in the additional area. Please reach out to INDOT EWPSO staff for additional guidance about necessary updates.

2. Field Investigation and Waters Report Preparation

A. Desktop Preparation

i. **Investigated Area (IA).** The minimum study area for a waters investigation should be based upon the project footprint as provided by the designer, preliminary project plans, engineer’s report, or project scope. The IA should not address only the

construction limits. It should include all INDOT right-of-way (ROW) immediately adjacent to the project to include contractor staging areas and site access. All medians located within the project area should be investigated and documented in the report. It may also include areas outside of the INDOT ROW or proposed footprint if additional information is required to validate the presence or absence of a regulated resource, such as a wetland that extends beyond the ROW. Another example would be non-INDOT property adjacent to the project where regulated resources could be indirectly impacted, such as from sediment discharge from construction activities or secondary impacts to a wetland. If investigation outside of INDOT ROW is anticipated, Notice of Entry for Survey letters must be sent to all adjacent property owners prior to the field investigation. Refer to the INDOT Project Development Public Involvement Procedures Manual on the INDOT website for more information about notice requirements.

ii. **Desktop Survey**. Ensure the desktop survey is completed before any field work is done. The desktop survey is the first step in preparing a waters report and sets the stage for field work. The survey can indicate what resources may be present within the IA and what will need to be field verified. The benefits of conducting a desktop survey prior to field work include:

- More efficient use of field time by pre-identifying areas of concern,
- Reducing the need for a follow-up visit,
- Providing draft maps required for the waters report,
- Providing resources for field data collection, and
- Understanding how water resources are connected to each other.

The desktop survey should result in a field data collection plan to include data points, photo documentation plan, and survey methods. The procedures should suit the complexity of the site and the purpose of the delineation.
The desktop survey should identify features requiring field verification such as historical drainage (such as evidence of water signatures in historical aerials), NWI mapped wetlands, hydric soils, NHD lines, water signatures visible on aerials, USGS identified wetlands and waterways, changes in vegetation and darker soils, and depressions identified by contours or shaded relief. For more specific information see Part 3, Section D. below.

iii. **Labeling Features.** Have a labeling plan prior to beginning fieldwork. Accurate feature labeling is important because it identifies the regulatory status of a feature and reduces confusion. For example, an ephemeral stream should not be labeled as a roadside ditch but as an Unnamed Tributary (UNT) to the nearest named feature on the USGS topographic map.

Rivers, streams, and ditches should be named using what is on the USGS topographic map. If a different name is used in INDOT programming, as is often the case with regulated drains, the different name should be mentioned in the project description, but the USGS mapped name should be used throughout the report. If the waterway in the IA is not labeled, use the downstream nearest named water feature. The feature would then be labeled as UNT 1 to that named feature. If there are multiple UNTs to the same stream label them as UNT 1 to that named feature, UNT 2 to that named feature, etc. Non-regulated resources such as a roadside ditch (RSD) should be labeled as RSD 1, RSD 2, etc.

Wetland features should be labeled numerically in a logical order. For example, the wetlands would be labeled as Wetland 1, Wetland 2, etc. Wetland data points (DP) should be labeled numerically (e.g., DP1, DP2, etc.) and independently of the wetland's label. For example, the first wetland data point for Wetland 1 could be DP2 and the corresponding upland point is labeled DP3. If a data point is taken that is not within a wetland and is not an upland point associated with a wetland boundary (i.e., a negative data point), these should also be labeled numerically (e.g., DP1, DP4 etc.)

Open water features should be named using what is on the USGS topographic map. If a common name is used, the common name can be provided in parenthesis. If there isn't a USGS name, label them as Open Water 1, Open Water 2, etc. In some circumstances, a stream flowing into a structure may enter a labeled open water feature. This would be labeled as UNT1 to that labeled open water feature.

B. Field Work Data Collection

i. **Field Work.** Field work for waters reports prepared for INDOT must be done during the growing season as defined by the USACE. For more details about the growing season, refer to the appropriate Regional Supplement for the Corps of Engineers Wetland Delineation Manual. An accurate assessment of the three wetland indicators cannot be made outside of the growing season. INDOT EWPSO may approve collecting field data outside of the growing season for an emergency project or a project that has been moved forward on the letting list. If out-of-season wetland data collection is approved, additional site visits during the growing season may be required to confirm inconclusive findings. In some situations, it may be appropriate to investigate streams outside of the growing season to better observe the stream banks.

The following resources and equipment should be taken to the field: plant identification references, plastic bags, shovel (spade), ruler/measuring tape, water

bottle to moisten soils, Munsell® book, camera, GPS unit, hand lens, desktop survey maps, aerial photos, wetland datasheets, writing instrument, note pad, clipboard, flags, measuring wheel, and compass.

ii. **Data.** GIS Shapefiles should be obtained for all streams, wetlands, and open waters. These files will need to be provided to the INDOT EWPSO District Ecologist after approval of the waters report, and they will be added to an INDOT water resource GIS layer.

Wetland data points should be taken in each suspected wetland and as close to the boundary as possible. A paired upland data point should be taken to determine the wetland boundary. The upland point should be thoughtfully placed; for example, it should not be on the road embankment or unreasonably far from the wetland boundary. If there is no appropriate location for an upland point to be taken, do not take the data point and provide an explanation of why an appropriate data point could not be taken and include observations of the upland area in the wetland narrative. For areas with varying vegetation, additional data points may be required to determine the boundary between different wetland types. It must be clear in the waters report how all wetland boundaries have been determined.

Ordinary high water mark (OHWM) measurements must be representative of the stream and should be taken outside the influence of the structure, not directly under a bridge or within a scour hole. If necessary, an OHWM measurement may be taken outside of the IA to ensure the measurement is not within the influence of the structure.

iii. **Photos.** Photos to document the IA and all features present must be collected during the field visit. For more information see Part 3, Section O below.

3. Waters Report Layout

The format and order presented in Sections A-Q should be followed for all reports prepared for INDOT State projects and is recommended for Local Public Agency (LPA) projects. This will provide a consistent format for INDOT and FHWA review of NEPA documents and regulatory agency review of the documents that support the permit application. The report should stand on its own and the results should be replicable by an independent party. The information should be portrayed in an organized and understandable manner and provide the results and rationale for decisions.

Consider the basic guidance below:

- Embellishments that do not add value to the content of the report should be avoided.

- Tables of contents and separation pages such as those in front of maps, etc., are appropriate only for very large reports.
- Consultant logos are allowed if they don't add to the length of the document or impact the presentation of information.
- Page numbers in a continuous numbering scheme should be included throughout the document, and the numbering scheme must not change between sections (including maps, photos, datasheets, etc.).
- Label all tables, figures, and maps. These must not be provided in attachments and instead should be treated as part of the main document.
- Refer to any supporting maps and figures within the text of the report as the map and figure subjects are discussed.
- All maps and text should address the details of the project and be prepared for the waters report rather than taken from other sources.

A. Title and Header

The title and header should address basic information about the project and report. The header should include the project Des, Road Name, and Project Type. The title should address the information listed below.

Waters Report
[Road Name] [Project Type]
INDOT Des [XXXXXXX]
Asset/Structure ID: [XXX]
[County Name(s)] County, Indiana
Date(s) of Field Investigation: [XX/XX/XXXX]

Prepared by: [Firm Name, if applicable]
[Name, Title]
[Email, Phone Number]

For projects with more than one Des number, provide the lead Des first and then the sub-DES numbers in the title. Most permits are obtained under the lead Des, however there are some exceptions.

Asset identification numbers - Bridges (> 20 feet) and culverts (4 to 20 feet) are assigned asset identification numbers and are tracked in the Indiana Total Assets Management Systems (iTAMS). The inclusion of the asset identification number for all assets located in the project area will ensure that the waters report relating to that structure is searchable through iTAMS.

If multiple preparers are listed, please identify the lead preparer. This will be the person used for the performance evaluation.

Date(s) of Field Investigation should reflect the date or dates when field work occurred.

When approved, the EWPSO District Ecologist will add their signature, approved date, and expiration date on the first page of the report.

B. Project Information

This section should describe the basic location information for the IA and a description of the project as listed below.

Indiana Department of Natural Resources (DNR) Indiana Stream and Wetland Mitigation Program (INSWMP) service areas may be viewed on the DNR website or with an interactive map available in the Indiana Map data sets.

Location:
Description of project location in relation to nearby intersection(s), town(s), etc.

- Latitude, Longitude of approximate center – [in decimal degrees]
- [DNR INSWMP Service Area]

C. Project Description

Provide a short description of proposed work to include activities that will require a permit. The description of other project activities that will not result in impacts should be simplified (i.e., do not copy and paste from the NEPA document). The description should define and support the IA. Describe any discrepancies in naming conventions such as between INDOT programming and GIS.

D. Desktop Investigation

The desktop investigation section should address soils, National Wetland Inventory (NWI), National Hydrography Dataset (NHD), and Floodplain information as detailed below. Examples have been provided in the tables.

Soils:

Based on the Soil Survey Geographic (SSURGO) Database for [County Name] County, IN, there [are/are not] mapped hydric soils identified in the investigated area.

Table 1: Soil Classifications

Map Unit Symbol	Soil Name	Hydric Rating (%)	Hydric Classification
SnA	Sloan silt loam, sandy substratum, 0 to 2 percent slopes, frequently flooded	85%	Predominantly hydric

[Include all soils within project area. Classification - Hydric (100%), Predominantly Hydric (67 to 99%), Partially Hydric (33 to 66%), Predominantly Nonhydric (1 to 32%), Nonhydric (0%), or Not Rated or Not Available]

National Wetland Inventory (NWI):

Based on USFWS NWI data, there [are/are not] wetlands or linear water features identified in or near the investigated area.

Table 2: NWI Features

NWI Type	Location Description	Present in the Field? (Yes/No)	Field Observations	Photo #s
Freshwater Pond (PUBGh)	Southeastern portion of the IA, along east bank of Lick Creek	Yes	Corresponds to Wetland B	2, 4, 5
Unconsolidated bottom (PUBG)	Northeastern portion of the IA, within adjacent ag field, north of SR 252	No	No wetland present, row crops in agricultural field were observed	12, 13

[Include and discuss all NWI features within investigated area or the closest feature and the distance and direction from the investigated area (do not discuss anything over 0.5 miles from the IA). If you field verify that an NWI corresponds to a feature (e.g., wetland or RSD), indicate "Yes" under Present in the Field? and list the feature identified in the Field Observation column (e.g., identified as Wetland A). If the NWI does not correspond to a feature in the field, indicate "No" under Observed in the Field and briefly describe what was seen in the location in the Field Observation column. Provide the photo ID numbers for all photos taken of each NWI feature under "Photo #s." If the NWI feature is outside of the IA, indicate "N/A" under Present in the Field, Field Observations, and Photo #s. If NWI features are not present, the above table is not necessary.]

National Hydrography Dataset (NHD):
Based on USGS NHD data, there [are/are not] NHD features identified in the investigated area.

Table 3: NHD Features

NHD Feature Type	Location Description	Present in the Field? (Yes/No)	Field Observations	Photo #s
Canal Ditch	Northwest corner of the IA	No	No flows or evidence of flows were observed in the area. The area is grassy and flat.	22
Connector	Northeast portion of the IA running along SR 44	Yes	Corresponds to RSD 4	6, 7, 9, 10

[Include and discuss all NHD features (classified and unclassified) within investigated area and whether it correlates with any field identified features. If appropriate, include a table to summarize the features. If you field verify that an NHD corresponds to a feature (e.g., stream or roadside ditch), indicate "Yes" under Present in the Field? and list the feature identified in the Field Observation column (e.g., identified as UNT 1 to Lick Creek). If the NHD does not correspond to a feature in the field, indicate "No" under Observed in the Field and briefly describe what was seen in the location in the Field Observation column. Provide the photo ID numbers for all photos taken of each NHD feature under "Photo #s." If NHD features are not present, the above table is not necessary.]

Floodplain:
According to the Indiana Floodplain Information Portal, the investigated area [is / is not] within a mapped floodplain or regulatory floodway [of "Name of Floodplain", *if applicable*].

E. Field Investigation Discussion

Identify the date of field work, number of water resources, and describe each resource in the appropriate section narrative. If multiple field days are needed, include a brief description of which work occurred on each date. Include in the field investigation discussion if site conditions are abnormal such as recent precipitation or prolonged drought. A revisit may be required if conditions preclude proper site documentation.

F. Stream Narrative

If no streams are present, discuss why and include a discussion of topography, NHD lines, etc. For each stream in the IA, discuss the following:

- Stream feature name.
- The field verified type of stream/flow regime (perennial, intermittent, or ephemeral).

    - Describe the basis for determination. This may involve desktop survey information but must address field observations such as water flowing during a dry period or overgrown vegetation in the streambed. Ephemeral streams are often not indicated on topographic maps and the USGS topographic map designation may be different from what is seen in the field.
- Width and depth of the OHWM in feet.
    - The measurements should be taken outside of the influence of the structure in a location that is representative of the overall stream. For example, the OHWM should not be measured where a large scour hole is present.
    - The OHWM depth must be taken at the stream thalweg.
    - If more than one OHWM measurement is taken, the stream summary table should include the widest and deepest of all the measurements – even if they are from different locations.
    - Include a discussion of the channel immediately up and downstream of the structure, to include features such as scour holes.
    - The OHWM location should also be marked in the representative photo.
- Flow direction.
- Quality of the stream (poor, average, or excellent) including justification.
    - To determine stream quality look at the substrate, plant communities, riffles, pools, overhead cover, meanders, presence of aquatic organisms or habitat, and opacity.
        - Substrate types are bedrock, boulder, cobble, gravel, sand, silt, hardpan, marl, detritus, muck, and artificial.
    - A regulated drain would be classified as either average or poor due to the unnatural state of the feature.
    - A natural stream would generally be classified as either average or excellent unless the evidence indicated otherwise.
- The first downstream traditional navigable waterway (TNW) with connectivity to the feature.
- Presumed jurisdictional status.
    - If the stream is a legal drain provide the drain information and indicate if permitting is required in the associated county.
    - For ephemeral streams, include the following statement: “INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction.”

Indicate if any of the stream features are listed as: Federal, Wild, and Scenic Rivers, State Natural, Scenic, and Recreational Rivers, navigable waterways, or National Rivers Inventory waterways, or on the Indiana list of Outstanding Rivers and Streams. If a feature is not listed as any of the above, do not include a statement to this effect.

G. Stream Summary Table

Provide the following information in the table for each regulated feature. If no streams are present, as discussed in the text, the stream summary table is not required. Examples have been provided in the table.

Table 4: Stream Summary Table

Stream Name	Photo #s	Lat, Long	Associated Structure ID	OHWM Width (ft)	OHWM Depth (ft)	Length within IA (LF)	Field Verified Flow Regime	Upstream Drainage Area (sq mi)	Riffles & Pools	Substrate Type(s)	Quality	Likely WOTUS
UNT 1 to Nolands Fork	22, 23, 24, 25, 26	39.859368, -84.990112	CLV 2456	8	0.5	25	EPH	1.2	No, Yes	Gravel, Silt	Poor	No*
Nolands Fork	12, 13, 14, 15	39.859378, -84.990122	N/A	64	3	283	PER	49.3	Yes, Yes	Gravel, Sand	Average	Yes

*INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction

- Water Feature Name - Corresponds with the name used in the document and labeled on maps.
- Photo #s - Reference all photos depicting each feature.
- Lat/Long- In decimal degrees separated by a comma at location of the OHWM depth measurement.
- Associated Structure ID - If a stream is carried through a structure, that structure ID should be listed in the table
- OHWM Width and Depth (ft) - The width and depth are what is found outside of the influence of the structure. If a scour hole is present, discuss it in the narrative and provide width and depth there.
- Length within IA – Provided in linear feet
- Field Verified Flow Regime - Perennial, intermittent, or ephemeral flow type as verified in the field.
- Upstream Drainage Area - In square miles as provided in StreamStats, if available. If a measurement is not available, provide <0.05 square miles.
- Riffles & Pools - Yes or no for each separated by a comma.
- Substrate Type - Provide the two most predominant type(s). Common types are silt, sand, gravel, cobble, bedrock, or muck.

- Quality - Classifications are poor, average, and excellent. The reasons for the classification should be discussed in the narrative for each feature. Examples include overhead cover, plant communities, presence of riffle and pool complexes, substrate, water clarity, presence of aquatic organisms, and natural sinuosity.
- Likely WOTUS - Yes or no. Determination supported by discussion in narrative. For ephemeral streams, include "No" and a footnote with the following statement: "INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction"

H. Wetland Narrative

If no wetlands are present, discuss why and include a discussion of topography, vegetation, NWI wetlands, and mapped soils within the IA. Areas with mapped NWI wetlands must be investigated. If no data points are taken in the areas with mapped NWI features, an explanation why no data points were taken should be provided in the narrative, such as that the topography and soil type of the area are not conducive to wetland development, and no wetland plant species were noted in the area.

If a wetland is bisected by a stream, road, or other defining feature it should typically be labeled as separate wetlands with investigations and data for each wetland.

For each delineated wetland provide the following:

- Wetland name (e.g., Wetland A, Wetland B, etc.).
- A general description of each delineated wetland to include location, topography, and quality (poor, average, or excellent) including justification based on factors such as plant community, landscape position, and water quality.
    - Regarding wetland quality, a roadside ditch wetland would be classified as poor due to the unnatural state of the feature and a natural wetland would generally be classified as either average or excellent unless the evidence indicated otherwise.
- A description of the wetland boundary determination, including the factors used to determine the boundary, and if the wetland extends outside of the IA.
- If a data point could not be taken, an explanation of why an appropriate location was not available.
- Assessment of jurisdictional status based on direct abutment to a relatively permanent water (RPW). If the wetland extends outside of the IA, direct abutment could occur outside of the IA and may need to be investigated as well. For wetlands with direct abutment, specify which feature the wetland abuts. For wetlands without direct abutment to a RPW, include the following statement: "INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction."

I. Wetland/Data Point Summary Table

The Wetland/Data Point summary table is meant to summarize the datasheets and basic wetland information. The table should be completed if any data points were taken, even if wetlands were not delineated. Each wetland will have at least two rows for the associated wetland and upland data points included in the table. If necessary, the wetland summary table may be displayed on its own page within the report following the wetland narrative section using a landscape layout.

Provide the following information in the table for each feature or data point. If no wetland data points were taken, as discussed in the text, the wetland summary table is not required. Examples are provided in the table.

Table 5: Wetland/Data Point Summary Table

Wetland Name	Type (EM, SS, FO)	Acres	Quality	Wetland/ Data Point Photo #s	Associated Structure ID	Wholly within IA	Directly abutting/ Likely WOTUS	Data Point ID	Lat, Long	Hydric Vegetation Indicator(s)	Hydric Soil Indicator(s)	Hydrology Indicator(s)	Within Wetland
Wetland 1	EM	0.02	poor	21,22,23,24 ,25,26	N/A	Yes	No*	DP1	36.15489, -86.25498	Dominance, Prevalence	F3, A11	A2, A3, D2	Yes
								DP2	36.15487, -86.15698	Dominance	None	D2	No
N/A	N/A	N/A	N/A	15,16,17	N/A	N/A	N/A	DP3	36.15269, -86.15463	None	F6	D2	No

*INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction.

- Wetland Name - Corresponds with the name used in the document and labeled on maps. Specify N/A if the row represents a data point that is not associated with a wetland.
- Type (EM, SS, FO) - Provide the wetland class type based on the general appearance of the habitat in terms of either the dominant life form of the vegetation or the physiography and composition of the substrate. Wetland classes include emergent (EM), Scrub-Shrub (SS), and Forested (FO). Specify N/A if the row represents a data point that is not associated with a wetland.

- Acres - Provide the total acreage of the feature within the IA. Specify N/A if the row represents a data point that is not associated with a wetland.
- Quality - Classifications are poor, average, and excellent. The reasons for the classification should be discussed in the narrative for each feature. Examples include plant community, landscape position, and water quality. Specify N/A if the row represents a data point that is not associated with a wetland.
- Wetland/Data Point Photo #s - Reference all photos depicting each feature and/or data point.
- Associated Structure ID - If a wetland is at the inlet or outlet of a structure, that structure should be listed in the table. If not, specify N/A. Also specify N/A if the row represents a data point that is not associated with a wetland.
- Wholly within IA – Yes or no. Specify if the wetland continues outside of the IA or if the wetland is wholly contained inside of the IA. Specify N/A if the row represents a data point that is not associated with a wetland.
- Directly abutting/Likely WOTUS - Yes or no for each separated by a comma. Determination is supported by the discussion in narrative. Wetlands may abut RPW outside of the IA. For non-abutting wetlands, include "No" for both and a footnote with the following statement: "INDOT acknowledges this is likely not a Waters of the United States, however INDOT requests that USACE take jurisdiction." Specify N/A if the row represents a data point that is not associated with a wetland.
- Lat/Long- In decimal degrees separated by a comma.
- Hydric Vegetation Indicator(s) - Include the indicators met for vegetation. If none, specify N/A.
- Hydric Soil Indicator(s) - Include the indicators met for soil. If none, specify N/A.
- Hydrology Indicator(s) - Include the indicators met for hydrology. If none, specify N/A.
- Within Wetland – Yes or no. Specify if the data point is within the wetland. Include "No" for upland data points associated with each wetland.

J. Open Water

If open water features are not present, this section should be excluded from the report. If appropriate, the information may be presented in table format. For each open water in the IA, discuss the following:

- Open water name.
- Location within the IA including if it extends outside of the IA.
- Connectivity to other water features.
- History of the feature if available (e.g., manmade feature for stormwater).
- Presumed jurisdictional status.
- Size in acres.

K. Other Features

Discuss the following as appropriate:

- Areas that have concentrated flow but did not have an OHWM.
- The absence or presence of non-water resource features such as roadside ditches (RSD), swales, or erosional features (EF).
    - If present, discuss how these were determined to be non-water resource feature types.
    - If absent, discuss what was observed in the investigated area (e.g., maintained roadside, residential lawn, agricultural land, etc.).
- If appropriate, describe the presence of other structures in the investigated area (such as culverts) that have the potential to be impacted by the scope of work or that are associated with a water resource.
- Unusual circumstances such as sewer or drainage tiles, or karst features; describe any other abnormalities (document in photos, etc.).

If appropriate, the following table can be included to summarize information for each Other Feature. If none are present, this table is not required. Examples are provided in the table.

Table 6: Other Features Summary Table

Other Feature Name	Notes/Observations	Photo #s
RSD 1	Grassy drainage feature, lacks bed and bank, in the northwest portion of the IA, flows south through CLV 4	10, 11
EF 1	Defined drainage area with soil erosion in the southeast portion of the IA, lacks bed and bank, beginning at the outlet of CLV 3 flows south outside of the IA to an ag field	26, 27

L. Wildlife Evidence and Observations

Include a description and the location of bat, bird, and wildlife use (if any). Bat, bird, and wildlife use evidence may include bird nests, bat guano or staining on the structure and ground, animal tracks, game trail, scat, etc. Document this with photos in the photos section and note photo location(s) on the photo map. If there is no evidence present, include a statement to address this.

M. Waters Report Conclusion

The purpose of the conclusion is to provide a short summary of the relevant findings. Identify number and types of field-identified water resources:

- Wetlands including wetland type (e.g., FO, SS, and EM).
- Linear water features (streams) including flow regime (e.g., PER, INT, EPH).
- Open water features (ponds, lakes, etc.).

i. **Include the following statement:**

"Every effort should be taken to avoid and minimize impacts to the water resources. If impacts are necessary, then mitigation may be required. The INDOT Environmental Services Division should be contacted immediately if impacts will occur. The final determination of jurisdictional waters is ultimately made by the U.S. Army Corps of Engineers. This report is our best judgment based on the guidelines set forth by the Corps."

ii. **Include the following acknowledgement statement and signature block.** Provide only the signature of the lead preparer and update the date if revisions are made.

***Acknowledgement*:**

"This waters report has been prepared based on the best available information, interpreted in light of the investigator's training, experience, and professional judgement in conformance with the *1987 Corps of Engineers Wetlands Delineation Manual*, the appropriate regional supplement, the *USACE Jurisdictional Determination Form Instructional Guidebook*, and other appropriate agency guidelines."

Signature Block:

Printed Name
Signature
Title
Consulting Firm/Sub-consulting Firm/INDOT District
Date

N. Map Requirements

It is beneficial to have drafts of key maps made prior to the field visit. They are useful for note taking and can be evaluated for missing information or layout while in the field. The maps may need to be updated to reflect the results of the field investigation or additional maps created for the final report.

Maps should be easy to understand, have a clear purpose, have a scale that is appropriate for the project and map contents, and be easily readable. Multiple layers of information/combined maps may be included on a single map if the information is easily readable. Irrelevant information should not be included. Maps should be clear when printed at the final map size of 8 ½ x 11 inches.

i. **Map Types.** Types of maps to include:

- Project location.
  - Map should include sufficient detail to guide a person to the site without the aid of electronic devices.
  - Include nearest major intersection with cross-street labeled.
  - May include various insets with zoomed in or out map frames such as project location within the county.
- Aerial.
  - Map should use recently available aerial imagery.
  - In most cases this map is combined with other map types.
- USGS quadrangle/topographic map.
  - Provide a map that shows connectivity from IA to nearest named blue line features.
- Hillshade.
  - Provide a map that shows the relief within the IA.
  - In some cases, this map may need to be zoomed in or out to demonstrate the presence of water resources and their connectivity.
  - Use recently available data; a specific source is not required.
- NWI.
  - If no NWI features are present in the IA, zoom out far enough to display the nearest NWI feature.
  - Use the most recently available USFWS NWI data.
- NHD.
  - If no NHD lines are present in the IA, zoom out far enough to display the nearest NHD line.
  - Use the most recently available USGS NHD data.
- Soil Survey.
  - Use the most recent soil data from The US Department of Agriculture (USDA) Natural Resources Conservation Science (NRCS) Soil Survey Geographic Database (SSURGO).
  - Include the map unit symbol labels.
  - Provide either a table or color coding for soil hydric rating.
  - Additional soil report pages from SSURGO are not necessary.
- Floodplain.
  - Provide a floodplain map using the DNR FARA report.

    - In cases where the FARA Report system is down for maintenance, GIS may be used to generate an acceptable floodplain map using the floodplain layers from DNR.
    - Amend the FARA report document to include the IA boundary or include the boundary in GIS generated floodplain maps.
- StreamStats report, if available.
    - Provide a report from USGS StreamStats displaying drainage area for each stream feature within the IA.
    - Include the name of the stream feature in the title for each StreamStats map.
    - If the drainage area cannot be displayed on the StreamStats map, due to the drainage area being less than 0.01 sqmi, do not include it.
- Karst.
    - If appropriate, provide a map with all karst features within the IA, including: cave density, karst sinkhole areas, karst springs, mapped sinkholes, etc.
    - If the karst map does not show useful information, such as an area without karst features, do not include one.
- Water Resources.
    - This is the map used primarily by regulators during the permit application process.
    - This map should not be combined with other map types.
    - Provide a map that includes all water resources (streams, wetlands, and open water).
    - This map must not include any non-water resource features (RSDs, EFs, etc.).
    - Do not include any points or lines to demonstrate the OHWM or data points.
    - Include the stream name(s) with the field verified flow regime code and length within the IA also noted (e.g., UNT 1 to Harper Creek (EPH), 126 lft).
    - Include the wetland name(s) with both type and the wetland area within the IA noted (e.g., Wetland A, EM, .058 ac).
    - For all streams display direction of flow.
- Photo Orientation.
    - Provide a map that includes all photo locations with arrows to indicate the photo direction.
    - The photo orientation map can be at a closer scale than the other maps to provide visible photo point labels and orientation arrows; if necessary, implement map insets to show congested photo areas.
    - Include points or lines to indicate location of OHWM with lat/long.

- Include points to indicate data point locations.
- Include water resources such as streams and wetlands and non-water resource features such as RSDs.
- For all streams display direction of flow (not needed for RSDs).
- Photo point numbering scheme should follow a logical order.

In all maps, any features (waters, ditches, data points, and photo points) should be labeled. Features such as wetlands that extend beyond the project area should have boundaries marked with a dashed line or arrow. Refer to the above "type of maps" list to determine which features must be included in each map.

For each map type, multiple maps showing different portions of the IA may be required depending on the size of the project. When using multiple maps, always include a key to orient the reader to the larger project area.

ii. **Map labels.** Map labels include DES number, route, project type, county, map type(s), north arrow, scale bar, legend for displayed layers, resource labels, sources/citations, date, and map author name. All maps must be oriented with North pointing to the top of the page. Map titles must be prominently displayed on the map page and identify the map type.

O. Photo Requirements

i. **General guidance.** The purpose of photographs is to document site conditions prior to disturbance and provide sufficient evidence to support a determination without a field visit from the regulatory agencies or EWPSO staff.

Photographs should be easy to understand, have a clear purpose, be in focus, account for the time of day/weather (light), show structures in context with surroundings, support the waters report narrative conclusions, provide a desktop tour of the project area, and be of sufficient quantity to support determination and cover the entire study area including areas without water resources.

The quality and quantity of the photos must sufficiently portray the water resources and their relationship to the structure or area. A minimum number of photos include four per structure or waterway, two per wetland data point, and two per non-water resource feature.

Photos that include only the roadway are discouraged and photos that show outside the IA are not necessary unless the photo addresses pertinent details that occur outside of the IA (e.g., extension of a wetland beyond the IA).

ii. **What to photograph.** Photograph the following:

- Right-of-Way - Photos should be taken from a vantage point that allows documentation of the four quadrants around the structure to include: upstream and downstream (if applicable), right-of-way, and adjacent landscape or other features. The roadway must not be the dominant feature in photographs of the right-of-way.
- Areas of concern - Areas of concern identified during pre-field desktop survey and those found during the field visit should be photographed. For example: NWI polygons, suspicious water signatures or vegetation, and areas of inundation.
- Data points - There should be a minimum of two photos per data point.
    - Before digging/trampling, photograph the surrounding plot vegetation that shows the relation of the data point to the surrounding terrain. A shovel should be used as a reference point.
    - Soil profile with tape measure/scaling device placed to show the full sample depth. Measuring scale must be legible in the photo.
    - Additional photos, such as a zoom of prominent hydric soil features, hydrology indicators, or water in the soil pit can also be included.
- Wetland features – Include a minimum of two photos to document each wetland feature (excluding the wetland data point photos described above). The photos must adequately capture the conditions of the wetland and its boundary (vegetation and hydrology).
- Stream features associated with a structure - Include a minimum of four photos. At least one photo must document the OHWM including a callout with the dimensions and lat/long of the OHWM depth measurement location. The photos must include both upstream and downstream views looking away from the structure. Provide photos from the stream bed (if possible, or closest point) that depict the stream's position in relation to the structure, looking upstream and downstream through the structure. Additional photos at a greater distance taken from on top of a structure may be helpful to give a longer perspective of each stream reach.
- Stream features not associated with a structure – Include a minimum of four photos. At least one photo must document the OHWM including a callout with the dimensions and lat/long. The photos must include both upstream and downstream views from the OHWM location, if possible. Provide photos from the stream bed (if possible, or closest point). Additional photos at a greater may be helpful to give a longer perspective of each stream reach.
- Non-water resource features - should be documented with a minimum of two photos. Photos must support the determination that the feature is not a water resource.
- Structures - Include all structures involved in the scope of work (pipes, box culverts, bridges, etc.). Photos must capture: the inlet and outlet/upstream and

downstream, the surrounding area, any existing riprap, view through the structure (upstream and downstream), UNTs, and any scour holes that may be present. These photos should be taken from the water level. This is a minimum of four photos per structure.

- Birds, bats, and wildlife crossings - If present, document the use of the structure by birds, bats, and other wildlife. Take photos of each type of bird nest, nest location or grouping, bat guano or staining on the structure and ground, and wildlife usage (animal tracks, game trail, or scat).

iii. **Photo pages.** Pages must be organized with two to four photos per page to largest size possible. Size can vary based on subject.

Photos should have captions describing contents of the photo, e.g., direction, date taken, evidence of wildlife, data points, facing upstream/downstream, key points/features, existing riprap. If all photos were taken on the same date, the date the photos were taken may be included in the page header rather than with each caption. Alternatively, date taken may be noted on the photos themselves.

One photo should include the location of the OHWM measurement (represented by a line) with the lat/long, width, and depth noted in a callout. Where appropriate, include arrows or lines noting features that are difficult to identify, such as wetland boundaries.

P. Wetland Data Sheets

The USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual for each region provides details on documenting wetlands and completing wetland data sheets. Wetland data sheets must be included in the report for all data points taken and can be downloaded from the USACE website.

Q. Pre-Jurisdictional Determination (Pre-JD)

The USACE issued Regulatory Guidance Letter (RGL) No. 16-01 in October 2016 to explain the differences between the approved jurisdictional determination (AJD) and the preliminary JDs (Pre-JDs) and provide guidance to USACE project managers and the regulated entities on the appropriate use of AJDs, Pre-JDs and no JD. RGL 16-01 is available on the USACE website. In general, most projects will require a Pre-JD form so all INDOT waters reports must include the pre-JD form unless EWPSO staff provide alternative guidance for your project. The most recent pre-JD form may be accessed from the USACE forms website.

4. Conclusion

This guidance addresses how to complete the majority of waters reports for INDOT. If you encounter a scenario not covered in this guidance, please reach out to EWPSO staff.

This document has been designed to address the existing statutes and common regulator requests at the time of drafting. Statutes and regulator requests may change more frequently than this guidance is updated, however, INDOT EWPSO staff will continue to provide guidance directly to stakeholders through email announcements and checklist updates.

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