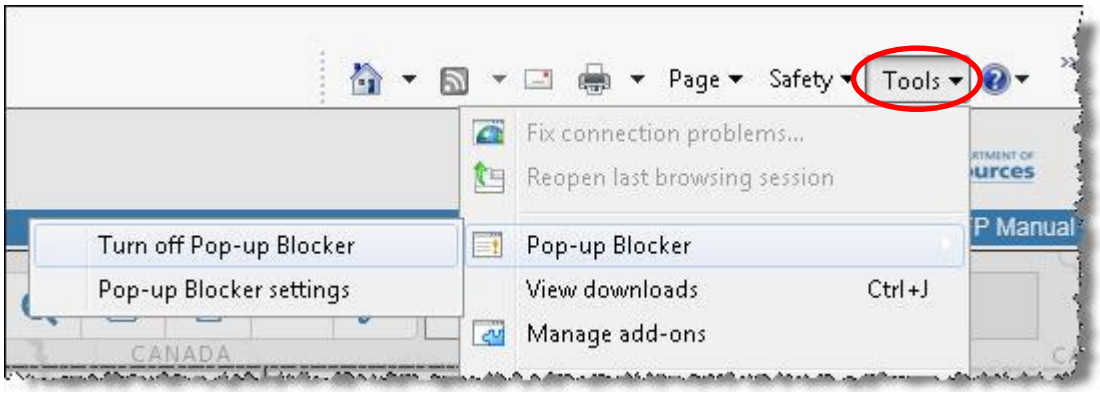
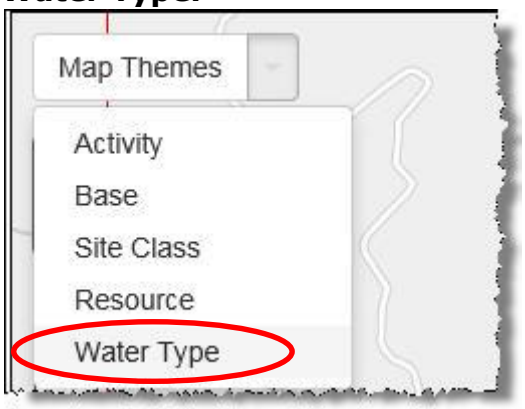
Instructions for Viewing Water Type Modification Forms (WTMF)

February 25, 2016

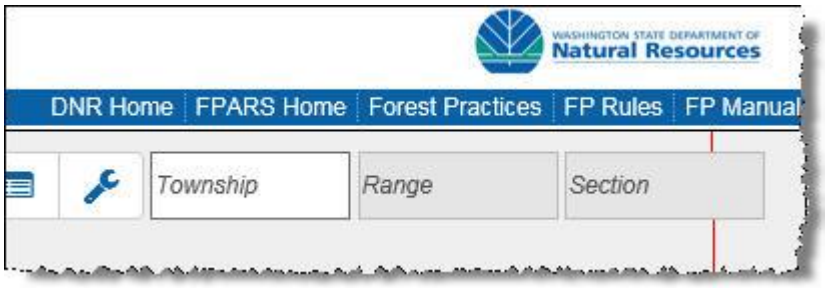
- In your browser, make sure the pop-up blocker is turned off.



- In the upper left corner of the map window, from the "Map Themes" dropdown, select **Water Type.**

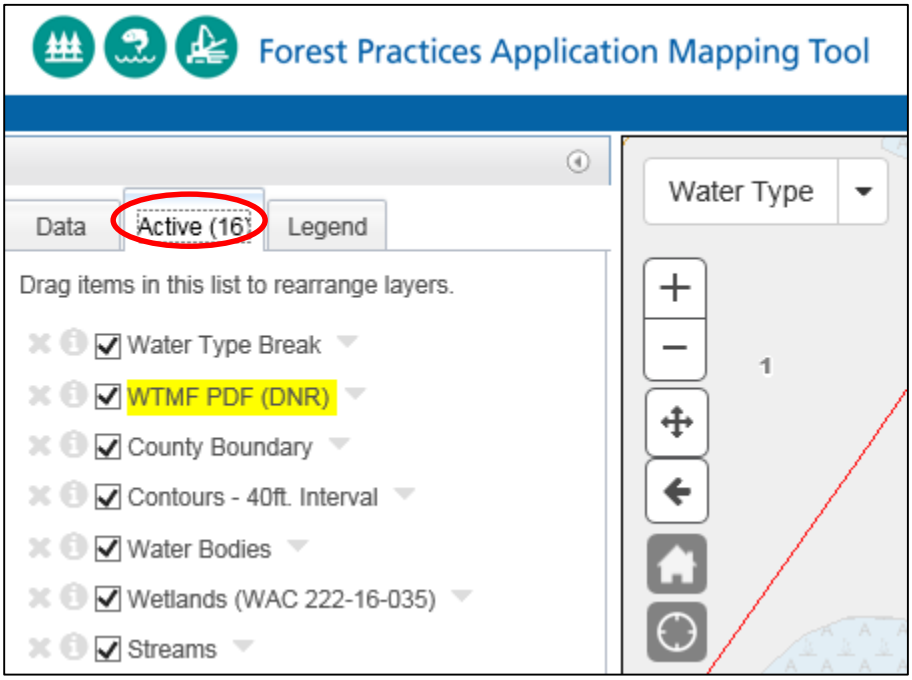


- Enter the "Legal Description" (township, range, and section) for your area of interest and click enter.

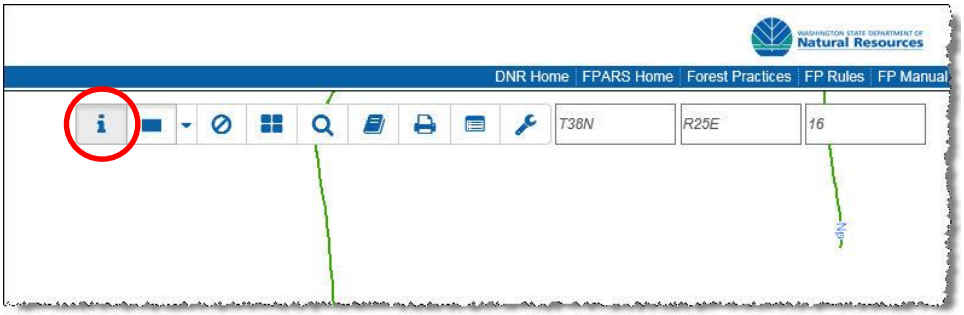


(You can also zoom into and out of an area using the + and – tools located in the upper left hand corner of the map screen, or you can shift-click to draw a box around your area of interest.)

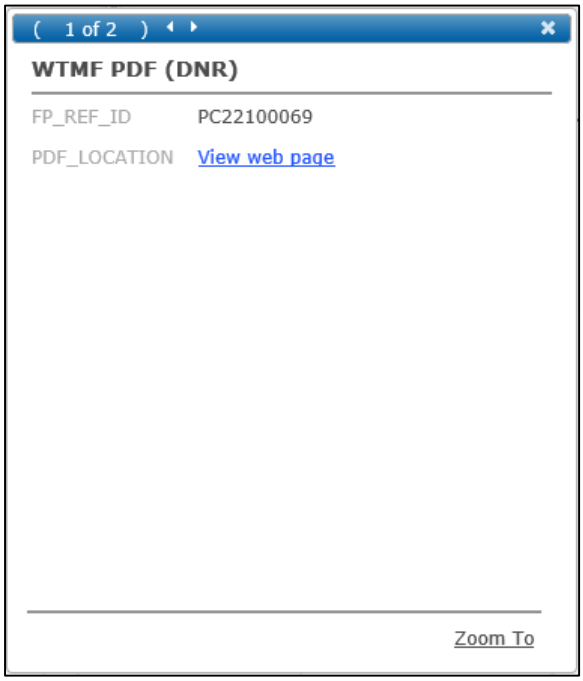
- Locate your stream of interest. You can use the "identify" tool to see if a WTMF exists for the stream or view details about a WTMF.
    - In the table of contents, click the "Active" tab.
    - Click the **WTMF PDF (DNR)** layer on the "Active" tab. It will be highlighted in yellow when selected.

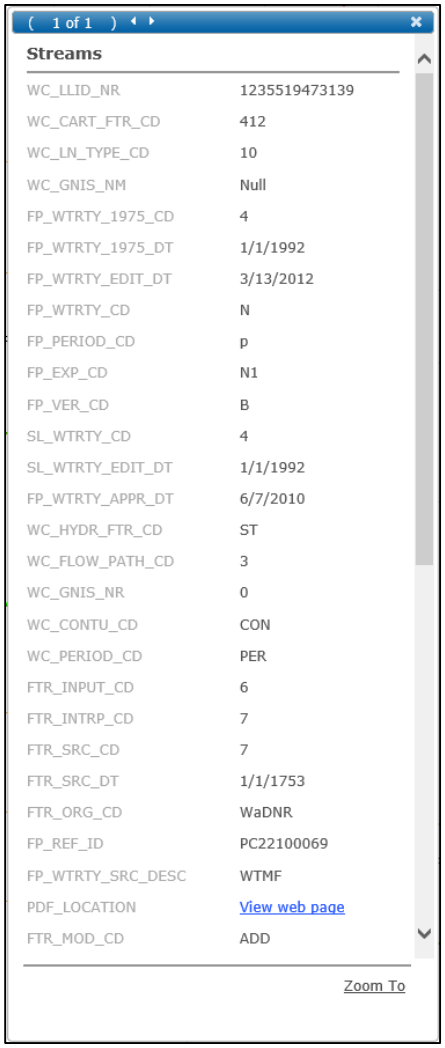


- From the list of icons in the top right corner of the map window, pick the "identify" tool and click the stream segment of interest to reveal the pop-up containing the hyperlink for the WTMF.



- In the pop-up box, scroll to the PDF_LOCATION field. Click the **View web page** hyperlink to open the WTMF in a new pop-up window. *(Please note that the same hyperlink is also accessible through the streams layer.)*





NOTE: If you run into any problems, please contact the FPARS Help Desk at 360.902.1420 or fpars-admin@dnr.wa.gov.

WC_HYDR_FTR_CD (Watercourse hydrographic feature code)
Identifies the hydrographic category in which the watercourse line belongs.

DC = Ditches, canals, flumes

ES = Bays, estuaries, and oceans

GL = Glaciers or permanent snowfields

IM = Impoundments or areas subject to inundation

IS = Islands

IW= Impounded wet areas. In the dataset these are found only near the southwest Washington coast.

LA = Lakes or pond

PP = Pipelines and water conveyance structures

SC = Side channels to rivers or streams

ST = Streams and rivers

UN = Unknown or unclassified

WT = Wet Area. These generally originated as swamps and marshes scanned from the USGS 1:24,000 topographic maps. Wet areas are not classified by the WAC 222-16-035 wetland typing system; they have no regulatory significance.

CART_FTR_CODE (Cartographic feature code)
Watercourse cartographic feature code. Identifies the surface water feature that the watercourse line represents. These codes developed initially by the USGS.

100 Alkali flat
101 Reservoir
103 Glacier or permanent snowfield
105 Area subject to inundation
106 Fish hatchery or farm
107 Industrial water impoundment
109 Sewage disposal pond or filtration bed
110 Tailings pond
111 Wet Area. These generally originated as swamps and marshes scanned from the USGS 1:24,000 topographic maps. Wet areas are not classified by the WAC 222-16-035 wetland typing system.
114 Cranberry bog
115 Flats (tidal, mud, sand, gravel)

116 Bay, estuary, gulf, ocean or sea
117 Shoal
300 Spring or seep
400 Rapids
401 Falls
402 Gravel pit or quarry filled with water
406 Dam or weir
407 Canal lock or sluice gate
408 Spillway
410 Exposed rock
412 Stream/river
414 Ditch/canal
415 Aqueduct
417 Penstock
418 Siphon
419 Channel in water area
420 Wash or ephemeral drain
421 Lake or pond
422 Reef
423 Sand or gravel in open water
425 Fish ladder
466 Pier, jetty, breakwater, dock, wharf or causeway
901 Impoundment
902 Island
999 Unknown/Unclassified

WC_LN_TYPE_CODE (Watercourse line type code)
Identifies the primary GIS database function of the watercourse line regardless of the hydrographic feature or hydrologic function it may represent.

5 Not displayed on FPARS maps. Artificial connector. A watercourse line projected for connectivity purposes. For example, a stream not connected by an above-ground channel system to a shoreline or downstream network due to infiltration may be connected to the larger network by segments with WC_LN_TYPE_CD = 5 in order to maintain network connectivity for modeling or future linear referencing purposes. An artificial connector is called a subsurface connector when field information provided on a WTMF specifically describes a stream as being "subsurface". Subsurface connectors shall have WC_LN_TYPE_CD = 5, WC_CONTU_CD = 'sub'.

10 A single line watercourse segment; A natural, well-defined or not-well defined channel produced wholly or in part by a definite flow of water, continuous or intermittent. May include: non-typed water, pipelines, actively maintained irrigation ditches, seasonal streams not physically connected by an above ground channel system to Forest Practices typed water (S, F, or Np), dry-draws, or swales. All watercourses represent features that exist on-the-ground.

20 Interior - in water body. Watercourse interior line represented within a water body (lake, reservoir, wet area, etc.)

21 Interior - double banked stream. Watercourse interior line represented within a double banked stream polygonal watercourse (for example, within the Columbia River).

30 Watercourse/body perimeter. Watercourse segment coincident with a water body perimeter (for example, when a stream and wet area bank share the same line).

99 Unknown/unclassified

WC_GNIS_NM (Official water feature name)

Watercourse Geographic Names Information System (GNIS) name. The name of the represented feature in the USGS GNIS database (http://geonames.usgs.gov/domestic/index.html). Not all features will have a GNIS name and number, but each feature with a GNIS name will have a GNIS number and vice versa. WC_GNIS_NM applies to the feature, often identified by one whole stream identifier (LLID). Each arc composing the same named feature will have the same GNIS name and number.

FP_ WTRTY_CD (DNR Forest Practices Water Type)

DNR Forest Practices water type codes as described in WAC 222-16-031, interim water typing system.

S Type S Water. Shorelines of the state as referenced in WAC 222-16-031(1).

F Type F Water as defined in WAC 222-16-031(2) and (3).

N Non-fish. The Np or Ns determination has not been made. This value combined with the FP_PERIOD_CD (p or s) make up the water types Np or Ns. "p" or "s" only shown on the water type map when submitted on a WTMF since the adoption of the letter water type codes. See WAC 222-16-031 (4) and (5). Type N water bodies are typed based on WAC 222-16-031(3)(b)(i)(C) and (D).

U Unclassified or not field verified or feature with no water type assigned. Feature may or may not exist on the ground. Not a water type; used as a placeholder in the database.

X Non-typed per WAC 222-16. Mapped hydrographic feature not meeting any definition for typed water. Feature exists on the ground. Not a water type; used as a placeholder in the database.

FP_PERIOD_CODE (Forest Practices periodicity code)

Forest Practices periodicity code. Used only with the Forest Practices WAC 222-16-031, interim water typing system where FP_WTRTY_CD = N. The FP_WTRTY_CD (N) combined with the FP_PERIOD_CD (p or s) make up the "Np" and "Ns" water types. Note that the Np / Ns break is determined by on-the-ground observation only. There

has been no direct translation of the old type 4 and 5 to the new types Np and Ns. When a forest practice activity is proposed the applicant must identify the perennial (Np) and seasonal (Ns) streams on their Forest Practice Activity Map. Np and Ns are shown on the FPARS maps only where the perennial/seasonal flow break has been documented on an approved WTMF. Most FP_PERIOD_CD values are "u" (unknown) because the Np/Ns determination has not been made.

p Perennial. Waters that do not go dry at any time during a year of normal rainfall. This value combined with the FP_WTRTY_CD (N) makes up the water type Np. "p" only shown on the water type map when submitted on a WTMF since the adoption of the letter water type codes. See WAC 222-16-031(4).

s Seasonal. Waters where surface flow is not present for some period of time during a year of normal rainfall. This value combined with the FP_WTRTY_CD (N) make up the water type Ns. "s" only shown on the water type map when submitted on a WTMF since the adoption of the letter water type codes. See WAC 222-16-031(5).

u Unknown / Unclassified / not applicable

FP_EXP_CD (Water type explanatory code)
Used to explain how each stream segment within WCHYDRO is assigned its water type (FP_WTRTY_CD) value. That is, used to show how the S, F, N water type or U or X placeholder code is assigned.

S1 Shoreline Management Act (SMA): Shorelines of the State (Chapter 90.58 RCW)

S2 Shoreline Management Act (SMA): Shorelines of Statewide Significance (Chapter 90.58 RCW) "S+" Waters.

S3 Artificial line segment (interior arc) that maintains stream network connectivity through type "S" lake or reservoir.

F0 Artificial line segment (lateral interior arc) that maintains stream network connectivity between type F double-banked stream centerline and lateral stream. FP_EXP_CD = 'F0' will have a flow path code of 2 and line type code of 21.

F1 Modeled as fish habitat, occurring downstream of a modeled end of fish habitat point.

F2 Un-modeled. Match could not be found between this stream segment and DEM-generated stream model during initial model implementation. DNR approved field survey data and/or former water type indicates fish use/fish habitat either prior to model implementation or later.

F3 Interior arc of type "F" lake, pond, reservoir or other water impoundment.

F4 Mapping anomaly prevented normal model/coding implementation. Former water type indicated "fish use" or is associated with other fish use/fish habitat waters. Most common occurrences were in channelized streams (e.g. irrigation ditches, canals) or un-modeled streams with former water typing inconsistencies.

F5 Fish hatchery or campground diversion waters and former type 2 water courses as defined by WAC 222-16-031 (2).

F6 Fish bearing/fish habitat stream added after water type model implementation.

F7 Model Override: Approved post 1996 hydro updates from field surveys submitted on Water Type Modification Forms or other approved field survey data place fish-bearing/fish habitat waters upstream of modeled end of fish habitat point.

F8 Outside of modeled area. Classified previously as having fish use (e.g. type 3). (For use in Eastern Washington only)

N0 Artificial line segment (lateral interior arc) that maintains stream network connectivity between type N double-banked stream centerline and lateral stream. FP_EXP_CD = 'N0' will have a flow path code of 2 and line type code of 21.

N1 Modeled as non-fish habitat, occurring upstream of a modeled end of fish habitat point.

N2 Un-modeled stream. Match could not be found between this stream segment and DEM-generated stream model during initial model implementation. DNR approved field survey data and/or former water type classification indicates non-fish use/non-fish habitat either prior to model implementation or later.

N3 Interior arc of type N lake, pond, reservoir or other water impoundment.

N4 Mapping anomaly prevented normal model/coding implementation. Former water type indicated "no fish use" or is associated with other non-fish use/non-fish habitat

N5 Non-fish bearing/non-fish habitat stream added after model implementation.

N6 Former untyped/unknown hydrographic stream feature (type 9) occurring upstream of a modeled end point. May or may not have a matching DEM-modeled stream.

N7 Model Override: Approved post 1996 survey/hydro update submitted on Water Type Modification Forms or other approved surveys indicate end of fish-bearing/fish habitat waters downstream of modeled end of habitat point.

N8 Outside of modeled area. Classified previously as having no fish use (type 4, 5). (For use in Eastern Washington only).

U1 Un-modeled stream that was formerly untyped/unknown and has not been field verified (former water type code 9). Stream may or may not exist on the ground.

U2 Reserved for data model conversion vendor added connectors that are not field
verified. These are artificial line segments that maintain stream network connectivity between typed streams or stream network and a hydrographic source feature. No apparent surface flow; may or may not be subsurface flow.

U3 Verified stream addition or confirmation of former untyped/unknown mapped stream (type 9). Stream exists on ground, but water type has not been assigned.

U4 Outside of modeled area. Classified previously as untyped/unknown (type 9). (For use in Eastern Washington only).

X1 a) Non-typed per WAC 222-16. Mapped hydrographic feature not meeting any WAC 222-16 definition for typed water and therefore having no Forest Practices water type designation (e.g. pipelines, "water conveyance systems which are artificially constructed and actively maintained for irrigation"; (b) deleted or removed stream segments with database network connectivity maintained; (c) verified subsurface connector (known infiltration with stream known to appear on surface farther downstream; or (d) artificial connector used to maintain database network connectivity.

FP_VER_CD (Forest Practices verification code)
Identifies the water typing survey method used when assigning a water type to a stream segment. All such surveys are documented by an approved water type modification form (WTMF). For use only with the Forest Practices water typing system. See FP_WTRTY_SRC_DESC for source of water types not assigned by a survey method. FP_VER_CD codes 'b', 'p', or 'n' only apply to streams surveyed since 20050301.

p Water type based upon physical criteria only. This means only the physical characteristics specifically listed in WAC 222-16-031 (3) (b). Waters meeting these listed characteristics are presumed to have fish use. FP_VER_CD codes 'b', 'p', or 'n' only apply to streams surveyed since 20050301.

b Water type based upon biological assessment. This may be one or more of the following: 1. fish observed, 2. the survey followed the Guidelines for Determining Fish Use (Board Manual, Section 13, Part 4), ie. "protocol", 3. the survey followed the Guidelines for Determining Fish Use (Board Manual, Section 13, Part 6), ie. an "alternative protocol" that was documented prior to the survey was used, 4. as part of an ID Team, a WDFW or tribal biologist agreement with the proposal is documented, 5. If the stream does not meet the minimum pool requirements for a protocol survey (Board Manual, Section 13, Part 4), and this is documented, then the survey is following protocol and is considered a "biological assessment." FP_VER_CD codes 'b', 'p', or 'n' only apply to streams surveyed since 20050301.

n Water type not verified by either physical criteria or biological assessment. FP_VER_CD codes 'b', 'p', or 'n' only apply to streams surveyed since 20050301.

u Method of water type determination is unknown.

FP_WTRTY_APPR_DT
(The date the Water Type Modification Form (WTMF) was approved)
The date of the Water Type Modification Form associated with the stream segment that was approved. Water Type Modification Forms are the means by which changes to the database are proposed.

FP_REF_ID (WTMF document number)
This is the tracking number used by each region to uniquely identify WTMFs entered into the database since Fall 2000. WTMF are the means by which changes to the DNR HYDRO GIS database (also known as the water type map) are proposed. There has been an approved water type modification form (WTMF) if FP_REF_ID has a value in one of the following formats:

(a) FP_REF_ID = 'RRWWYY1234' where RR is two letter Region abbreviation, WW is two digit WRIA#, YY is two digit year, and 1234 is sequential number (starting at 0001 at start of each year). If the year is not known, then "YY" is a place holder. Open the PDF to find the year.

(b) If FP_REF_ID is in format '0000WW0000' or there is no value, then there is no WTMF and has been no water typing survey or hydro update unless FP_WTRTY_1975_DT is greater than 1992.

FP_WTRTY_SRC_DESC (Source of the Forest Practices water type code)

The value derived is programmatically by the following query: FP_EXP_CD IN ('S1', 'S2', 'F1', 'F2', 'F4', 'F5', 'F6', 'F8', 'N1', 'N2', 'N4' ,'N5' ,'N6', 'N8', 'U1', 'U2', 'U3', 'U4', 'X1') and (FP_REF_ID is not null and FP_REF_ID not like '0000%0000')

WTMF = Water typing survey. A Water Type Modification Form (WTMF) has been entered into the database since 1/1/1997*. For a finer classification of surveys since March 1, 2005 (western Washington) and/or March 1, 2006 (eastern Washington) see database field #3, below.

NOTE: If a surveyed stream segment is associated with a model override, then the segment will show OVERRIDE rather than WTMF. If there is a FP_REF_ID on the segment, then the segment was surveyed.

MODEL = The water type was assigned by the Fish Habitat Water Typing Model; there has been no water typing survey recorded in the database since 1/1/1997*.

OVERRIDE = The model assigned type was overridden by a qualifying water typing survey. This falls into two categories: (1) Either modeled N was overridden to become F because waters downstream of a known fish location are assumed to have fish use (Board Manual Section 13, Part 4), or (2) a modeled F was overridden to become N because a survey established the F/N break downstream.

NOTE: If a record has an FP_REF_ID, then the override is due to the survey. If there is no FP_REF_ID, then the override is up or downstream of the survey. For this reason there will be surveyed stream segments with OVERRIDE rather than WTMF.

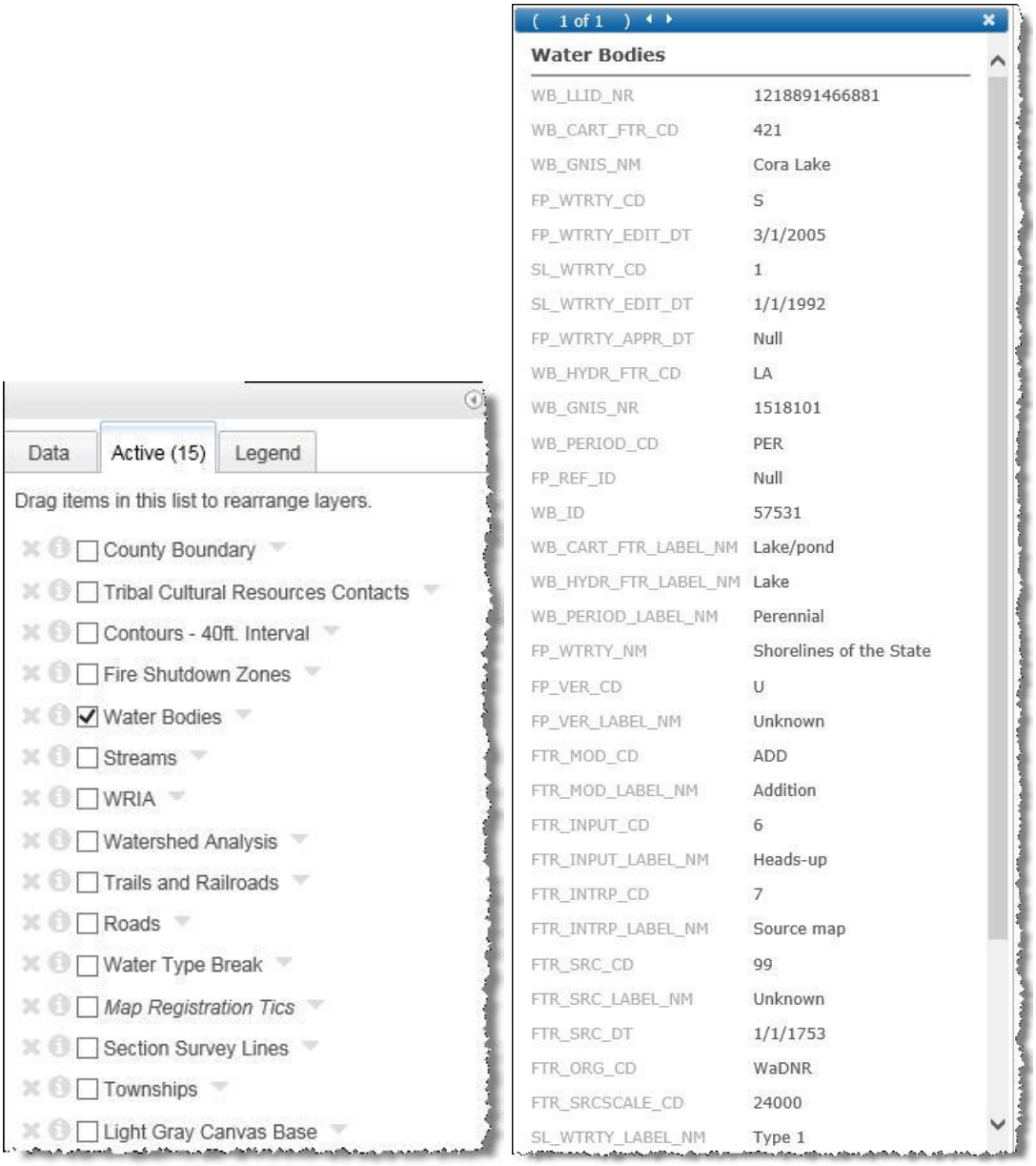
LEGACY = Streams not modeled inherited their water type from the water typing system prior to the model - either from an older water typing survey or from the Water Type Map prior to the creation of the GIS database.

[BLANK] = No value is assigned to water bodies to reduce map clutter.

Water Bodies

You can get information about water bodies in a similar manner:

- Highlight **Water Bodies** on the "Active" tab.
- From the list of icons in the top right corner of the map window, pick the "identify" tool and click the water body to reveal the pop-up containing its attributes.



WB_CART_FTR_CD (Cartographic feature code)
Water body cartographic feature code. The code used to describe the cartographic feature type that the water body polygon represents. These codes were developed by the US Geological Survey.

100 Alkali flat
101 Reservoir
103 Glacier or permanent snowfield
105 Area subject to inundation
106 Fish hatchery or farm
107 Industrial water impoundment
109 Sewage disposal pond or filtration bed
110 Tailings pond
111 Wet Area. These generally originated as swamps and marshes scanned from the USGS 1:24,000 topographic maps. Wet areas are not classified by the WAC 222-16-035 wetland typing system.
114 Cranberry bog
115 Flats (tidal, mud, sand, gravel)
116 Bay, estuary, gulf, ocean or sea
117 Shoal
300 Spring or seep
400 Rapids
401 Falls
402 Gravel pit or quarry filled with water
406 Dam or weir
407 Canal lock or sluice gate
408 Spillway
410 Exposed rock
412 Stream/river
414 Ditch/canal
415 Aqueduct
417 Penstock
418 Siphon
419 Channel in water area
420 Wash or ephemeral drain
421 Lake or pond
422 Reef
423 Sand or gravel in open water
425 Fish ladder
466 Pier, jetty, breakwater, dock, wharf or causeway
901 Impoundment
902 Island
999 Unknown/Unclassified

WB_GNIS_NM (Official water feature name)
Water body GNIS (Geographic Names Information System) name. The name of the water body as contained within the USGS GNIS database (http://geonames.usgs.gov/domestic/index.html). Not all features will have a GNIS name and number, but every feature with a GNIS name will have a GNIS number and vice versa.

FP_ WTRTY_CD (DNR Forest Practices Water Type)
DNR Forest Practices Water Type Code. Features in the Water Bodies layer were not part of the modeling process and are classified according to WAC 222-16-031. Type S water bodies have an area of at least 20 acres in size. Type F water bodies are less than 20 acres but larger than 0.5 acres. Water bodies less than 0.5 acres are coded "N" unless there is a type S or F stream entering and exiting it. Those water bodies will be coded according to the stream type. Field verified information may override designations based on acreage.

S Type S Water. Shorelines of the state as referenced in WAC 222-16-031(1).

F Type F Water as defined in WAC 222-16-031(2) and (3).

N Non-fish. The Np or Ns determination has not been made. This value combined with the FP_PERIOD_CD (p or s) make up the water types Np or Ns. "p" or "s" only shown on the water type map when submitted on a WTMF since the adoption of the letter water type codes. See WAC 222-16-031 (4) and (5). Type N water bodies are typed based on WAC 222-16-031(3)(b)(i)(C) and (D).

U Unclassified or not field verified or feature with no water type assigned. Feature may or may not exist on the ground. Not a water type; used as a placeholder in the database.

X Non-typed per WAC 222-16. Mapped hydrographic feature not meeting any definition for typed water. Feature exists on the ground. Not a water type; used as a placeholder in the database.

FP_WTRTY_EDIT_DT (Date of the last water type update)
Used only in conjunction with the water typing system implemented 3/1/2005 for western Washington and 3/1/2006 eastern Washington.

FP_ WTRTY_APPR_DT
(The date the Water Type Modification Form (WTMF) was approved)
The date of the Water Type Modification Form associated with the stream segment that was approved. Water Type Modification Forms are the means by which changes to the database are proposed.

FP_ REF_ID (WTMF document number)
This is the tracking number used by each region to uniquely identify WTMFs entered into the database since the Fall of 2000. WTMF are the means by which changes to the DNR HYDRO GIS database (also known as the water type map) are proposed. There has been an approved water type modification form (WTMF) if FP_REF_ID has a value in one of the following formats:

(a) FP_REF_ID = 'RRWWYY1234' where RR is two letter Region abbreviation, WW is two digit WRIA#, YY is two digit year, and 1234 is sequential number (starting at 0001 at start of each year). If the year is not known, then "YY" is a place holder. Open the PDF to find the year.

(b) If FP_REF_ID is in format '0000WW0000' or there is no value, then there is no WTMF and has been no water typing survey or hydro update unless FP_WTRTY_1975_DT is greater than 1992.