**Protocol for assigning unique site identifier**
**Draft: April 17, 2023**

The sampling site unique identifier variable 'site_id' is intended to:

(1) Be sufficiently flexible to include all of the following types of sampling sites: wastewater treatment plants (WWTP) with or without NPDES IDs, sewersheds, upstream locations on discharging or non-discharging systems, and facilities not located on a sewer system.
(2) Allow NWSS to more efficiently integrate wastewater surveillance data collected through other programs.
(3) Allow NWSS and NWSS partners to analyze wastewater data more efficiently and accurately.

**Description:**

The 'site_id' variable is a 14 digit hierarchical code using the following format:

| WWTP/facility county FIPS | Facility code | Sewershed code | Subsewershed code | Sample site code |
|:---:|:---:|:---:|:---:|:---:|
| XXXXX – | XXX – | XX – | XX – | XX |

**<county FIPS code>**: This is the 5 digit county FIPS code for the address of the WWTP or facility location. For WWTPs that serve multiple counties, this is only the county of the WWTP address (i.e., this may not be the same value as the 'county_names' field). For upstream sampling sites located in a different county than the county of the associated treatment plant, this is the county for WWTP location. For facilities that are not on a sewer system, this is the county for facility location.

**<facility code>**: This is a 3 digit code to identify the WWTP or the facility not located on a sewer system in the <5 digit county FIPS code>. It is assigned sequentially, from '001' – '999'.

**<sewershed code>**: This is a 2 digit code to identify the interceptor or sewershed within the facility identified in <facility code>. It identifies the interceptor, or large sewer pipe, that joins right at the wastewater treatment plant location. This code is assigned sequentially, starting with '01' for sites with only a single interceptor joining at the treatment plant, which will be the most common situation. For sampling sites that are at a facility not located on a sewer system, the 2 digit code should be '00'.

**<subsewershed code>:** This is a 2 digit code to identify the subsewershed, within the sewershed identified in <sewershed code>. There are several possible ways to designate sub-sewersheds; we intend this field to be used to group related sites within a sewershed. A university, hospital, or jail upstream of a WWTP can be designated as their own sewershed to help link multiple sampling sites within that location. Two subsewersheds that feed into a single interceptor at the treatment plant would be designated '01' and '02' if the influent is being sampled separately. For sampling sites that are at a facility not located on a sewer system, the 2 digit code should be '00'.

**<sample site code>**: This is a 2 digit code to identify the sampling site within the subsewershed identified in <subsewershed code>. It is assigned sequentially, starting with '00' for testing at

wastewater treatment plants, and '01' – '99' for all upstream locations. For sample sites at a facility not on a sewer system, it is assigned sequentially starting with '01'.
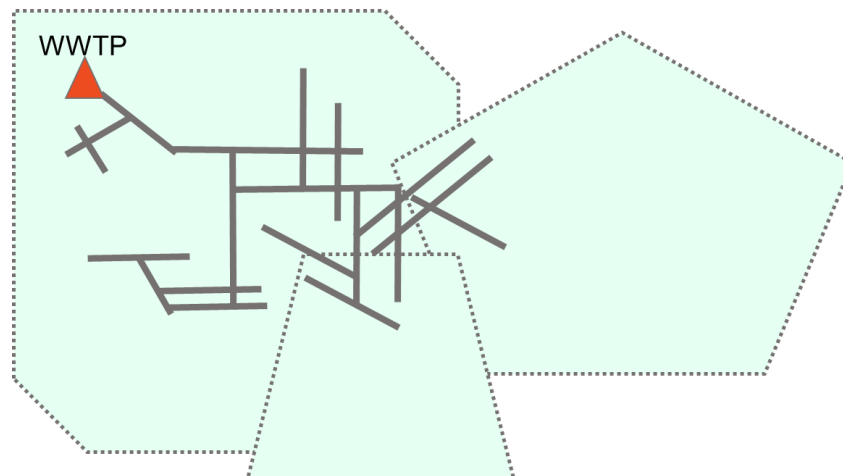
**General guidelines:**

(1) Never re-use 'site_id' codes for a new site. If a wastewater treatment plant or facility is dropped, or a new sample location is used, assign a new 'site_id'. This variable should remain unique throughout the NWSS system.
(2) If you have a sample site that is unique and doesn't fit into this schema, reach out to us via the nwss@cdc.gov inbox and we can discuss.

**Terms:**

Interceptor: a major sewer line that receives wastewater flows from collector sewers. An interceptor sewer carries wastewater directly to the treatment facility or to another interceptor.

**Examples:**

1. For an imaginary WWTP in Baldwin, AL with a single influent flowing into the facility, that serves populations within three counties, with sample collection occurring at the treatment plant: 01003 – 01 – 01 – 00 – 00



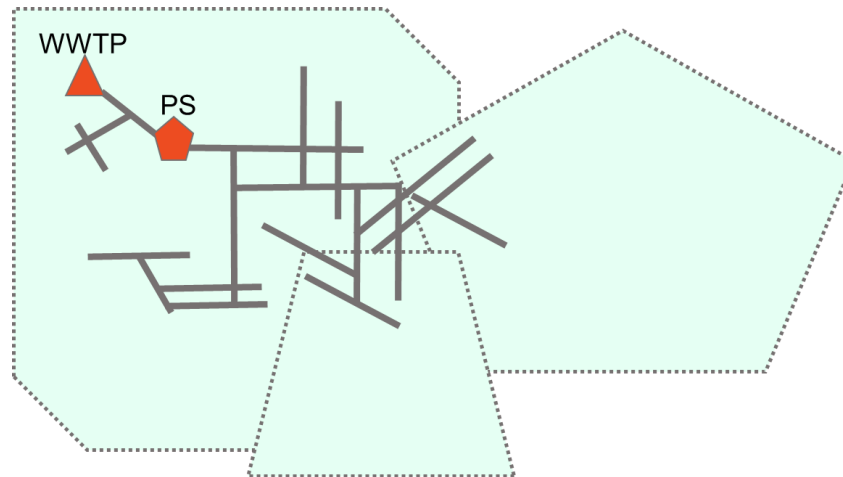**01003:** FIPS code for Baldwin County in AL
**01:** The '01' WWTP or facility in Baldwin County
**01:** There's one interceptor providing influent to this WWTP, and it serves the entire sewershed.
**00:** Sample collection occurs at the WWTP so there is no subsewershed
**00:** Sample collection occurs at the WWTP

2. For a pump station on the same sewershed served by this imaginary WWTP in Baldwin, AL:
01003 - 01 – 01-0 – 01
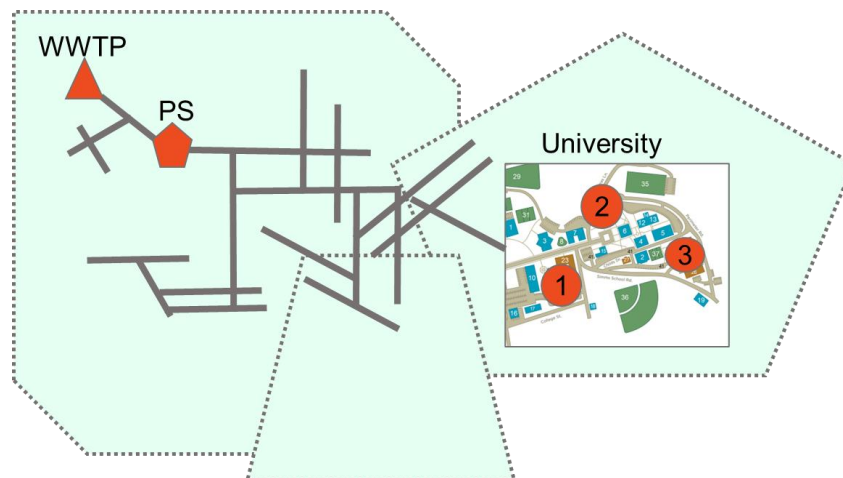


**01003:** FIPS code for Baldwin County in AL
**01:** The '01' WWTP or facility in Baldwin County
**01:** There's one interceptor providing influent to this WWTP, and it serves the entire sewershed.
**01:** The pump station is an upstream location so gets designated as a subsewershed, starting sequentially
**01:** Sample collection occurs upstream at a pump station

3. For a university campus upstream of this imaginary WWTP in Baldwin, AL with multiple sample locations: 01003 – 01 – 01 – 02– 01, 01003 – 01 – 01 – 02 – 02, and 01003 – 01 – 01 – 02– 03



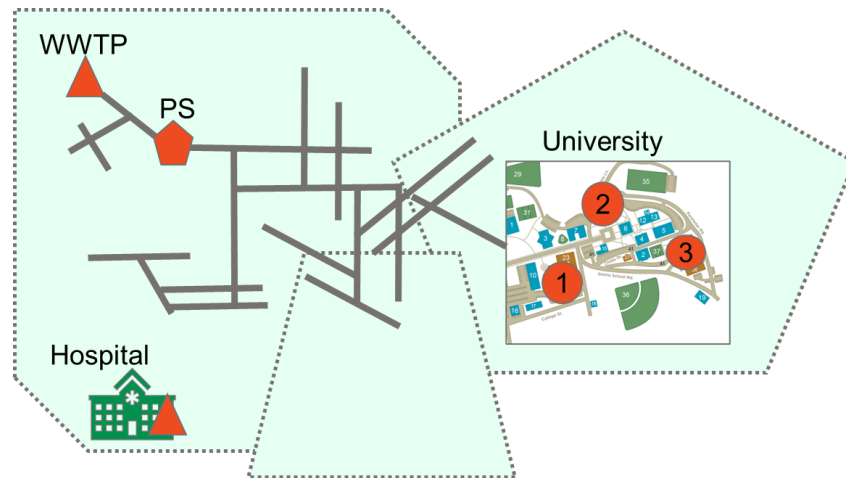**01003:** FIPS code for Baldwin County in AL
**01:** The '01' WWTP or facility added in Baldwin County
**01:** There's one interceptor providing influent to this WWTP, and it serves the entire sewershed.

**02:** Within the '01' sewershed, we're designating the university campus as the '02' sub-sewershed to group the sample locations.

**01 - 03:** Sample collection occurs at two dorms and a manhole on campus; they're designated as sampling sites '01'-'03'

4. For a hospital in Baldwin, AL that is not on a sewer system and has one sample location: 01003 – 02 – 00 – 00 – 01



**01003:** FIPS code for Baldwin County in AL

**02:** The '02' facility added in Baldwin County, since we've designated the WWTP as the '01' facility

**00:** This facility is not located on a sewer system so the <sewershed code> is '0'

**00:** This facility is not located on a sewer system so the <subsewershed code> is '00'

**01:** Sample collection occurs at one site, designated as sampling site '01'