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SUPPORT ON THE IMPLEMENTATION OF THE URBAN WASTE WATER TREATMENT DIRECTIVE (91/271/EEC)

UWWTD SIIF PLATFORM: FUNCTIONALITIES OF THE WASTE WATER OPEN SOURCE GENERIC WEBSITE: NATIONAL NODE AND EU NODE

RAMBOLL

International Office for Water

SUPPORT ON THE IMPLEMENTATION OF THE URBAN WASTE WATER TREATMENT DIRECTIVE (91/271/EEC) UWWTD SIIF PLATFORM: FUNCTIONALITIES OF THE WASTE WATER OPEN SOURCE GENERIC WEBSITE: NATIONAL NODE AND EU NODE

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1. INTRODUCTION

This document is presenting the UWWTD SIIF national website functionalities for the version released in March 2020.

It is based on the documentation ***"The UWWTD-SIIF platform: functionalities of the waste water open source generic website"*** developed by OIEau and DG Environment for the previous versions of the UWWTD SIIF national website, within *Specific contract n°07.0201/2014/SFRA/698614/ENV.C.2 implementing Framework Service Contract ENV.D.2/FRA/2012/0013: "Expanding the Urban Wastewater Structured Information and Implementation Framework (SIIF) via: Improvement of the SIIF IT toolbox and Extension of the Urban Waste Water Directive (UWWTD) SIIF approach to four new Member States."*

2. CONTEXT

In 2012, the **"SIIF" concept (Structured Implementation and Information Framework)**, was introduced for the first time in a communication called "Improving the delivery of benefits from EU environment measures". To demonstrate the added value of this concept before generalizing its application to all Directives, this communication suggested to apply it to the Directive 91/271/EEC of 21 May 1991 concerning **urban waste-water treatment**.

Since 2012, the European Commission carries out a pilot program for the implementation of the "SIIF" concept to the Urban Waste-Water Treatment (UWWT) Directive, so as to speed up the availability of information for decision makers and for the general public, through the creation of a UWWT SIIF platform.
Office International de l'Eau – OIEau - has developed this UWWTD SIIF platform, an open source package allowing to install a national website dedicated to urban waste water data.
These data have to be reported by European Member States to European authorities as required by the UWWT Directive and the datasets are based on a common European data model.
The platform uses these national datasets as core source of data and allow produce maps, graphs and summary statistics. It is organised around INSPIRE services requested under Article 11 of the INSPIRE Directive. The platform contains also automatic features that go beyond INSPIRE requirements: compliance calculations, graphic viewing, individual sheets for each agglomeration, waste water treatment plant, discharge point, and receiving area, a facilitated access to dataset including via web services and various print and export functions. It has been successfully tested at national level by some pilot countries such as Romania or Cyprus.

Urban waste water generic website currently in place

- UWWTD Ghitub platform -
- Generic open-source platform (EU node): https://uwwtd.eu/
- Austria: https://uwwtd.eu/Austria/
- Belgium: https://uwwtd.eu/Belgium/
- Bulgaria: https://uwwtd.eu/Bulgaria/
- Cyprus: https://uwwtd.eu/Cyprus/
- Czech Republic: https://uwwtd.eu/Czech-Republic/
- Germany: https://uwwtd.eu/Germany/
- Denmark: https://uwwtd.eu/Denmark/
- Estonia: https://uwwtd.eu/Estonia/
- Spain: https://uwwtd.eu/Spain/
- Finland: https://uwwtd.eu/Finland/
- France: https://uwwtd.eu/France/
- Greece: https://uwwtd.eu/Greece/
- Croatia: https://uwwtd.eu/Croatia/
- Hungary: https://uwwtd.eu/Hungary/
- Ireland: https://uwwtd.eu/Ireland/
- Italia: https://uwwtd.eu/Italia/
- Lithuania: https://uwwtd.eu/Lithuania/
- Luxembourg: https://uwwtd.eu/Luxembourg/
- Latvia: https://uwwtd.eu/Latvia/
- Malta: https://uwwtd.eu/Malta/
- Netherlands: https://uwwtd.eu/Netherlands/
- Poland: https://uwwtd.eu/Poland/
- Portugal: https://uwwtd.eu/Portugal/
- Romania: https://uwwtd.eu/Romania/
- Sweden: https://uwwtd.eu/Sweden/
- Slovenia: https://uwwtd.eu/Slovenia/

- Slovakia: https://uwwtd.eu/Slovakia/
- United Kingdom: https://uwwtd.eu/United-Kingdom/

By the beginning of 2017 all European MS are covered by this approach with access to all urban waste water reporting.
An EU website complete the set of 28 national websites.
By developing this approach, the DG Environment has been proactive towards all Member States allowing them to comply easier with the requirements of the INSPIRE and public access to environmental information Directives.

This document presents the different functionalities of the national websites and the associated EU website that already disseminate information at EU level.

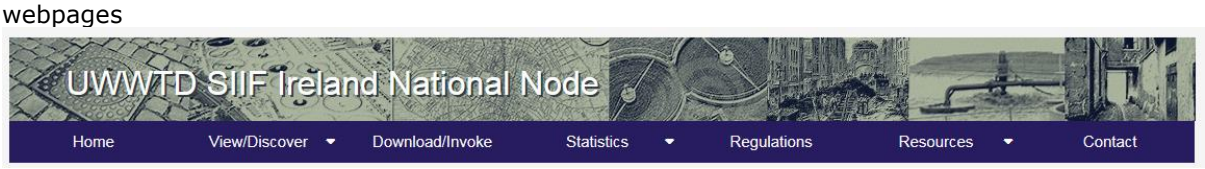
It does not present the management part of the website that are already presented in the guidance available on the Github platform. The management part of the website allows to:
- import the databases,
- provide qualification of the database,
- translate the website into another language
- provide feedback concerning the reporting analysis

It does not present the algorithms that are included to calculate the compliance and that are also available in the Github platform. The website contains lots of transformation services that allows the multiplicity of dissemination and use of the reporting information.

3. A WEBSITE ORGANISED TO BE USED IN OTHER POLICIES

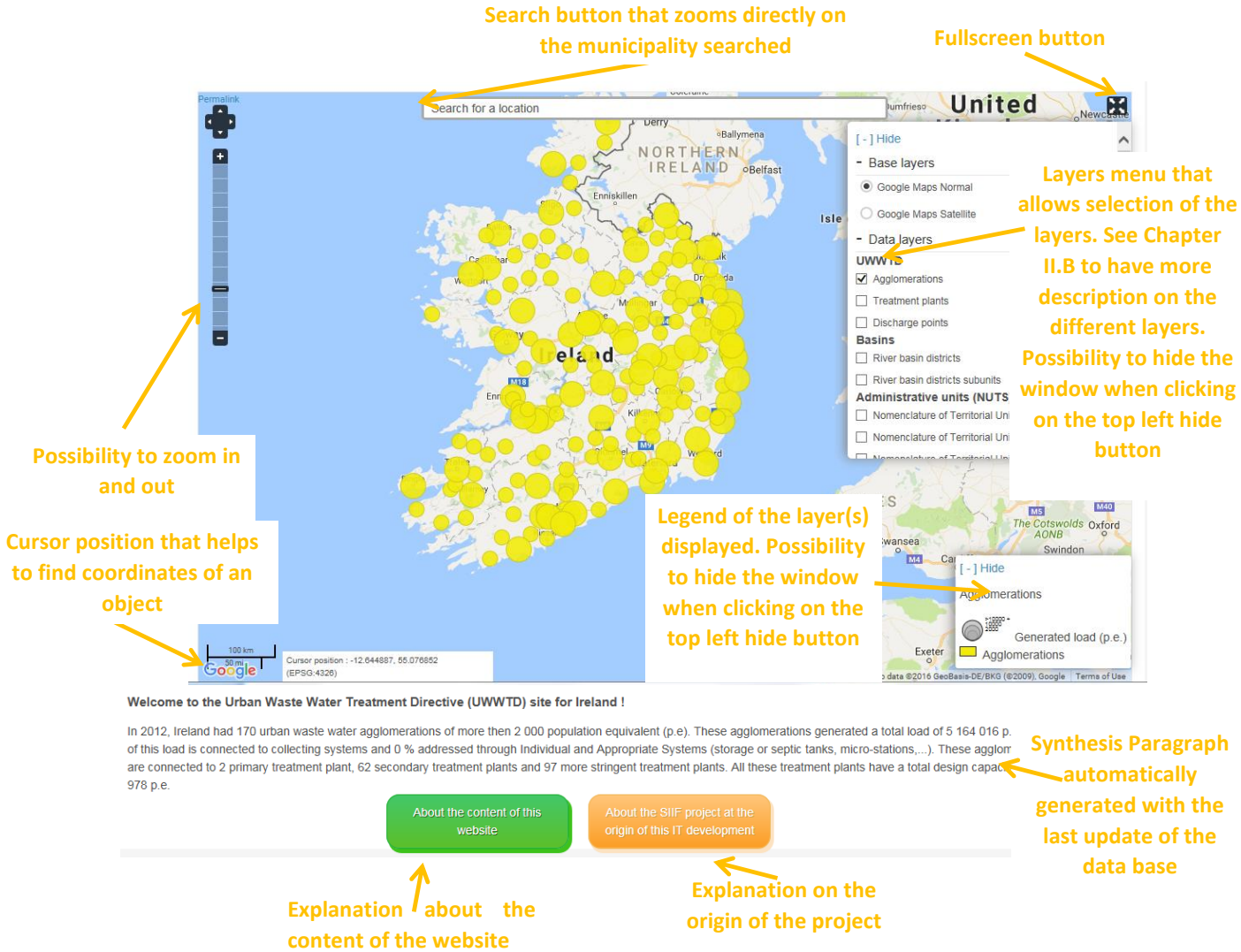
The framework of the website and the way it is presented has been done on purpose to be potentially reused for the development of other websites related to other policies**The website menu**

The menu is neutral and has nothing particular to do with urban waste water. It includes an 'Home', "View/Discover', 'Download/Invoke', 'Statistics', 'Regulations', 'resources' and 'contact' webpages



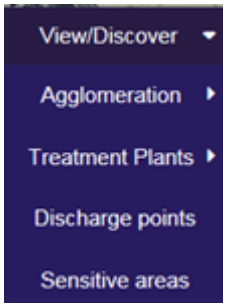
3.1.1 Home page

The welcome page, Home includes a mapviewer that gives access to all the geographical layers and the legend of each of them. It is possible to click on and off on each layer in order to make them appear or disappear. Below the map there is a short automatically generated text that gives a synthesis of the urban waste water country situation



3.1.2 View/discover menu

The view/discover menu gives access to submenu related to the urban waste water objects through mapviewers and lists.



As regards the Agglomerations there is a sub-sub-menu one related to the compliance and the other related to the destination of the urban waste water load generated (collecting system, individual system or direct discharge)

As regards the treatment plants there is also a sub-sub-menu related to the compliance, the treatment in place and the pressure generated

The content of this sub-menus is explained in the chapter II.

3.1.3 Download/invoke menu

The download/invoke menu gives access to the data used in this website, the metadata and the Inspire services.
Data related to the urban waste objects can be downloaded under different format (Xml, CSV, shp and Kml)

Title	Coverage	Files available
Full UWWTD reported data	Country	xml
Full Article 17 UWWTD reported data	Country	xlsx (Excel)
Agglomerations	Country	xml, csv, shp, kml
Urban Waste Water Treatment plants	Country	xml, csv, shp, kml
Discharge points	Country	xml, csv, shp, kml
Sensitive areas	Country	xml, csv, shp, kml
Association table between Agglomeration and Urban Waste Water Treatment plants	Country	xml, csv

For the metadata and INSPIRE services see chapter 4.
This download/Invoke menu gives also explanation how to link other websites to this website. Each object in the website is referenced by an hyperlink that contains the ID code of the object and the same root before. When knowing this ID code it is very easy to generate hyperlink to this website and the specific object.

How to make references to this website?

All the items description page (agglomeration, treatment plant, discharge point and sensitive areas) can be accessed directly, and then referenced on other websites.

This can be done by using the following URL pattern:
http://uwwtd.oieau.fr/[country]/[name of the element]/[ID of the element]
For instance:

- /agglomeration/IEAG_200
- /treatment-plant/IETP_896
- /discharge-point/IEDP_425_01

If you want to reference to a specific year, you simply need to add the year in the URL as follows:

http://uwwtd.oieau.fr/[country]/[name of the element]/[ID of the element]/[year]
For instance:

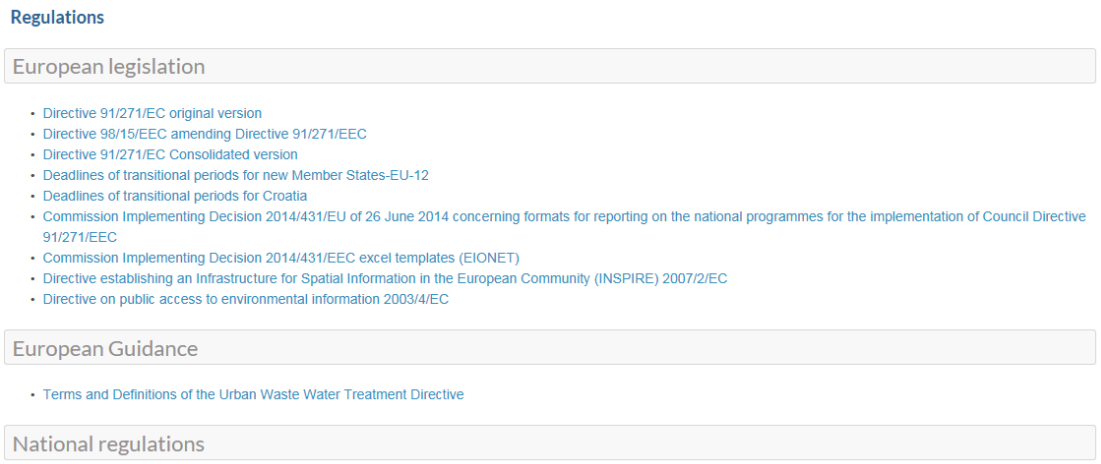
- /agglomeration/IEAG_200/2012
- /treatment-plant/IETP_896/2012

3.1.4 Statistic menu

The statistic menu
There is two sub-menu related to statistics one related to statistics automatically created when each dataset is downloaded in the website and the other one that allows to create its own statistics. (for more information see the chapters IV.A and B)

3.1.5 Regulations menu

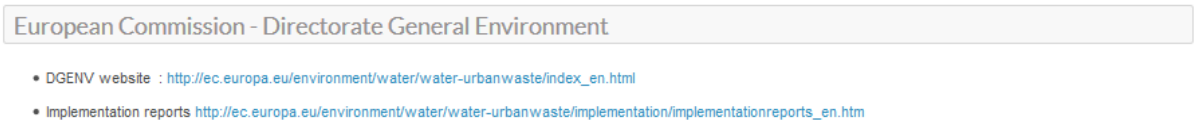
The regulations menu provides a very important content in a website related to a policy that gives access to the related regulation. At this stage European urban waste water regulation is only available but when MS are going to use the website they are going to include also their national regulation.



3.1.6 Resources menu

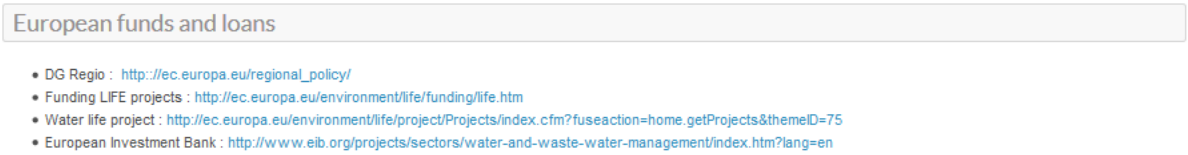
The "Resources" menu includes three sub-menus: one that provides links to information related to this policy (, one that explains the concept that is behind the website and the last one that explain how to install the website on a national server.

As regards the Useful links sub-menu it is where you can find hyperlinks related to the DG Environment website related to the urban waste water policy and specifically where the European urban waste water directive reports are located.

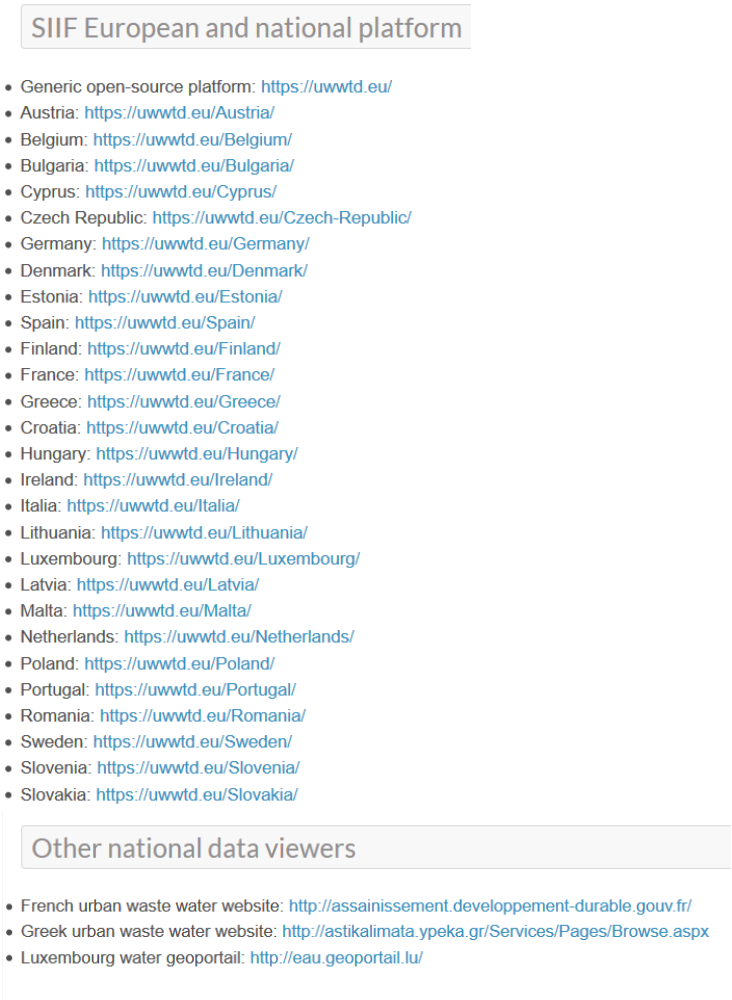


Where you can find hyperlinks related to the European Environmental Agency and specifically how the reporting is organised with access to the datamodel and guidance and how it is displayed at this level (database and dataviewer).

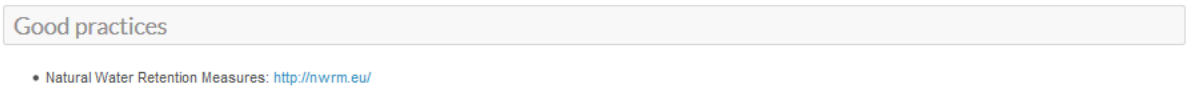
It provides also information on the way to use European funds and loans in order to finance the urban waste water infrastructure.



It gives also access to the other existing SIIF platforms and national websites concerning urban waste water.



And finally there is also the possibility to have access to other websites related to good practices



The overall objectives is to facilitate the reporting process and to ease the access to the available information in order to implement better the directive.

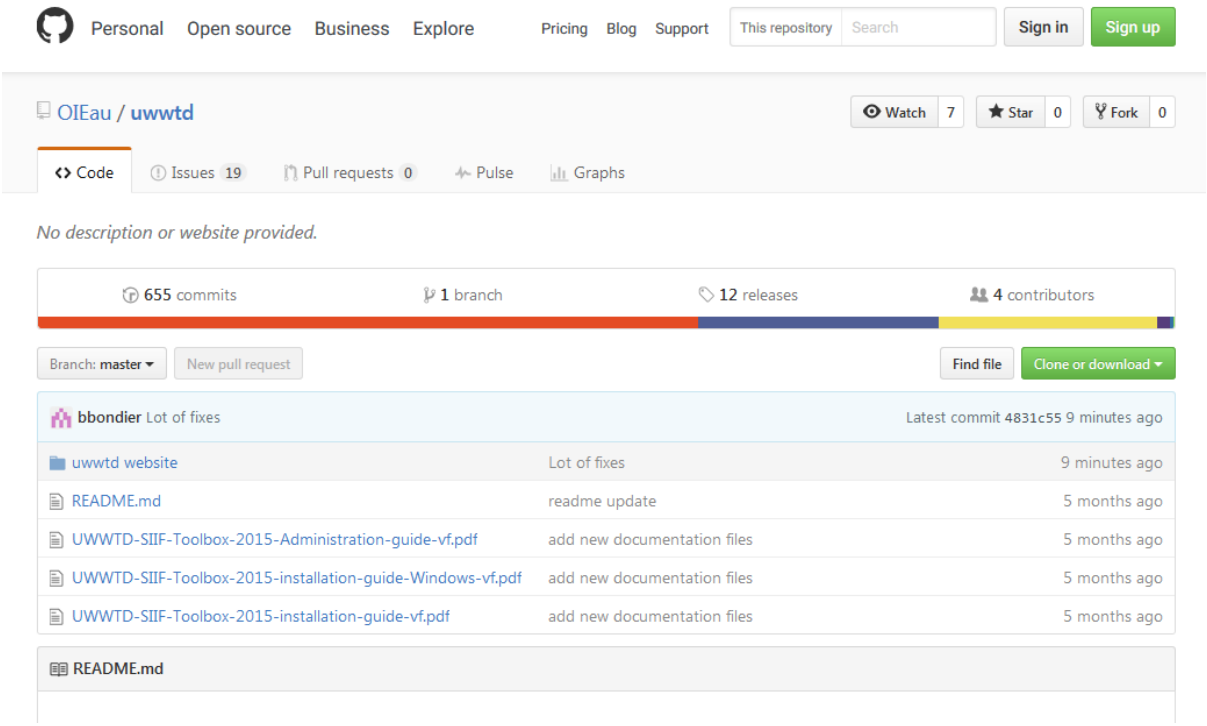
3.1.7 Contact menu

The last topic in the menu is a contact menu that provides to opportunity to send a message to a person that is either in charge of the website either in charge of the policy. This is not compulsory to include such a menu specifically if you have nobody available to answer to potential questions raised. The experience in France with their urban national waste water

website shows that there is not a lot of questions raised when you open this opportunity to the website users.

3.2 An open source website to be installed at national level

The process is transparent and available in a Github platform. The last version of the software and its code is available included the guidance that explain how to install and use it.



This is also a working platform where all issues related to the website are tracked.
The maintenance and update of the system is included in a new Commission contract related to the urban waste water reporting. A new version was updated beginning 2020 and will remain operational at least till December 2020.
The objective of this project was also to open opportunities to other developers or institutions to reuse part of the codes for other developments.

4. INSPIRE SERVICES (ARTICLE 11)

Implementing INSPIRE on environmental domains is generally done step by step, starting with identifying datasets and cataloguing, then implementing web services and finally focussing on data model conformity. Currently the UWWTD data collection has identified all the thematic domain information needed for assessing implementation of the Directive, and the cataloguing can be conducted as the four geographical objects which form the basis of this reporting are clearly identified and delineated. We will see in this section that the UWWTD SIIF platform allows implementing a first iteration of the web services. The data model conformity, which was partly addressed under the SIIF project, remains to be finalised and implemented so that the platform becomes fully conform to INSPIRE.

For the specific case of the UWWTD, the Inspire Directive needs to be implemented by MS as it covers four geographical objects (agglomeration, treatment plant, discharge point and sensitive area), and the deadlines are now passed.

While all parts of the Directive are important as regards UWWTD, the data collection being well established and documented, the *chapter II metadata* does not pose any specific difficulty, the *chapter III: Interoperability of spatial data sets and services* is partly covered by the fact a common data model already exists and the *chapter V: Data sharing* is part of the data collection process. The most important aspect for the UWWTD SIIF is therefore the situation as regards the chapter IV: network services.

The UWWTD SIIF platform is focussed to providing end users with easy to use tools to explore and use the UWWTD data. The services are implemented in the way a non expert user would understand what this specific service cover, and they do not pretend to be fully aligned with Inspire requirements. In some cases, developing the services in a fully Inspire aligned way would have slowed down the process or required additional resources and they were implemented without considering the specific requirements of Inspire. This means the way it is currently implemented may need adjustments in the future when the data model has been adapted or new development for new useful functions have been conducted, or specific needs emerge on Inspire services. The platform was developed with a systematic view on Inspire requirements and as much as possible with using Inspire implementation approach. When it is not currently implementing fully aligned services, the remaining effort to make it is pending an end user need to do so. Overall the services implemented are providing the functions that an end user would expert for accessing and using the UWWTD data for his/her own use.

4.1 Discover

"(a) ***discovery services*** *making it possible to search for spatial data sets and services on the basis of the content of the corresponding metadata and to display the content of the metadata;*

For UWWTD SIIF, it was necessary and useful to have an Inspire discovering service (CSW). A separate catalogue was therefore implemented using geoserver, the country being able to use alternatively its own catalogue if it already exists. It is implemented in a first glance via a specific menu of the platform which provides an easy access to a single catalogue used for all IUWWTD SIIF platforms with the main geographical objects of the respective platforms, in a set of pre-generated and partially filled in catalogue factsheets, with for each a dedicated page. These pages can be scanned, zoomed in and out, search for a specific location or name and exported for re-use.
(catalogue: http://www.uwwtd.oieau.fr/catalogue/srv/ows/catalog.search#/home)

4.2 View

*(b) **view services** making it possible, as a minimum, to display, navigate, zoom in/out, pan, or overlay viewable spatial data sets and to display legend information and any relevant content of metadata;*

For UWWTD SIIF, this service is implemented in a first glance via the same menu than for discovering allowing an easy access to the various data available on the platform, with for each sub-set, a dedicated page comprising a map, some graphs and a table giving access to the information on each individual object. These pages display the datasets and can be scanned, searched, selection of sub-sets of data can be done, the pages can be printed, the maps can be zoomed in and out, searched for a specific location or name, and the tables can be exported for re-used

4.3 Download

*(c) **download services**, enabling copies of spatial data sets, or parts of such sets, to be downloaded and, where practicable, accessed directly;*

The download service is accessible via a page "download/invoke" with possibility to access the datasets for the different years they were reported, to view them or download them. The page gives access to the datasets and sub-sets in different formats, to the associated metadata in different formats, to webservices for the different subsets (WFS/WMS), and explains how to make reference to individual objects or specific years.

4.4 Transform

*(d) **transformation services**, enabling spatial data sets to be transformed with a view to achieving interoperability;*

The transformation services are mainly embedded in the platform. A standalone QA/QC module based on the WPS OGC standart is available at : https://uwwtd.eu/qa-qc-module/wps?service=WPS&request=GetCapabilities and allow the user to run the EEA QA/QC rules applied on XML files for UWWTD Article 15 on envelope submit on CDR Others transformation services like compliance assessment or register are not accessible from the outside like WPS services, but may be in the future as most components are already running on the platform with well-defined processes and a single data model. The most prominent is the compliance calculation for urban waste water treatment plants and agglomerations. A full set of 11 algorithms are implemented within the platform and allow calculate compliance and then display the results on maps, graphs and tables on the platform.

4.5 Invoke

*(e) **services** allowing spatial data services to be **invoked**."*

Sub parts of the datasets can be invoked via the web services implemented in the menu download/invoke. An additional development is necessary to allow invoke the spatial data from outside the platform.

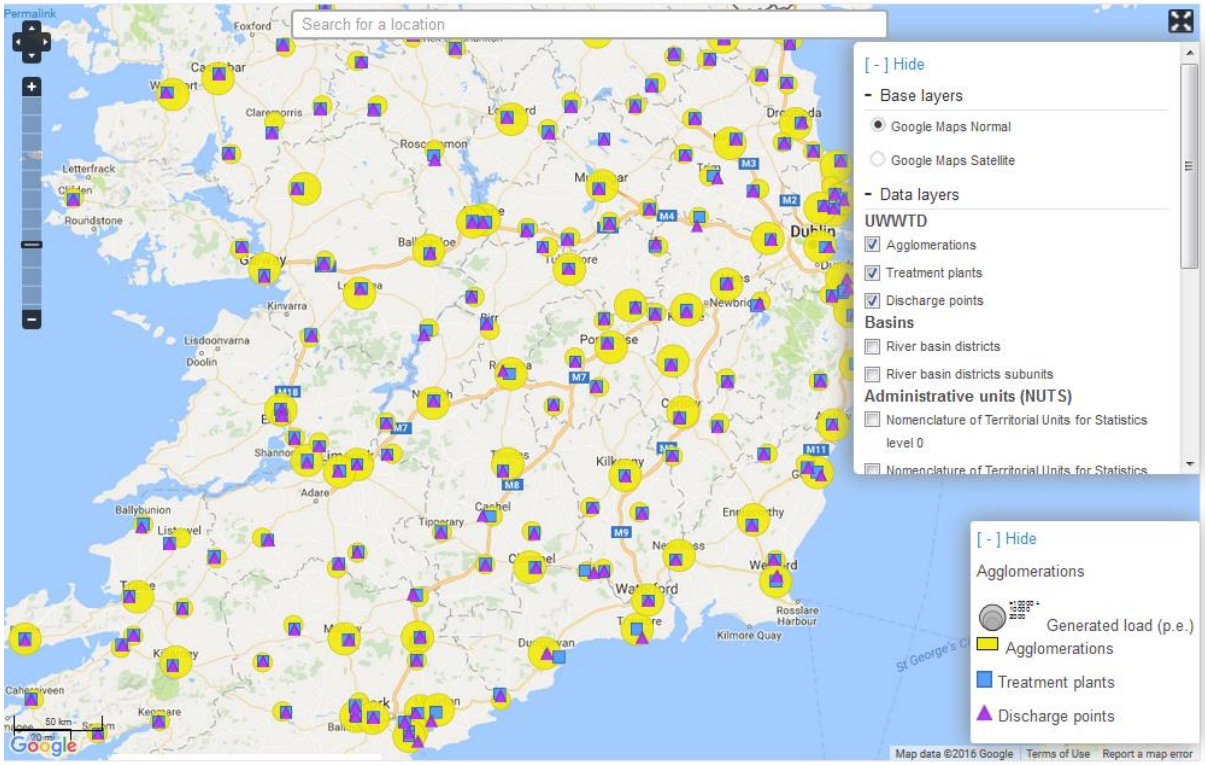
5. MAPS AND LISTS

The website is organised to display urban waste water information through map viewers and lists with possibility to sort and select the different parameters and objects. The UWWTD considers four objects : Urban waste water Agglomerations, Treatment plants, Discharge points and Sensitive Areas.

5.1 The different mapviewers

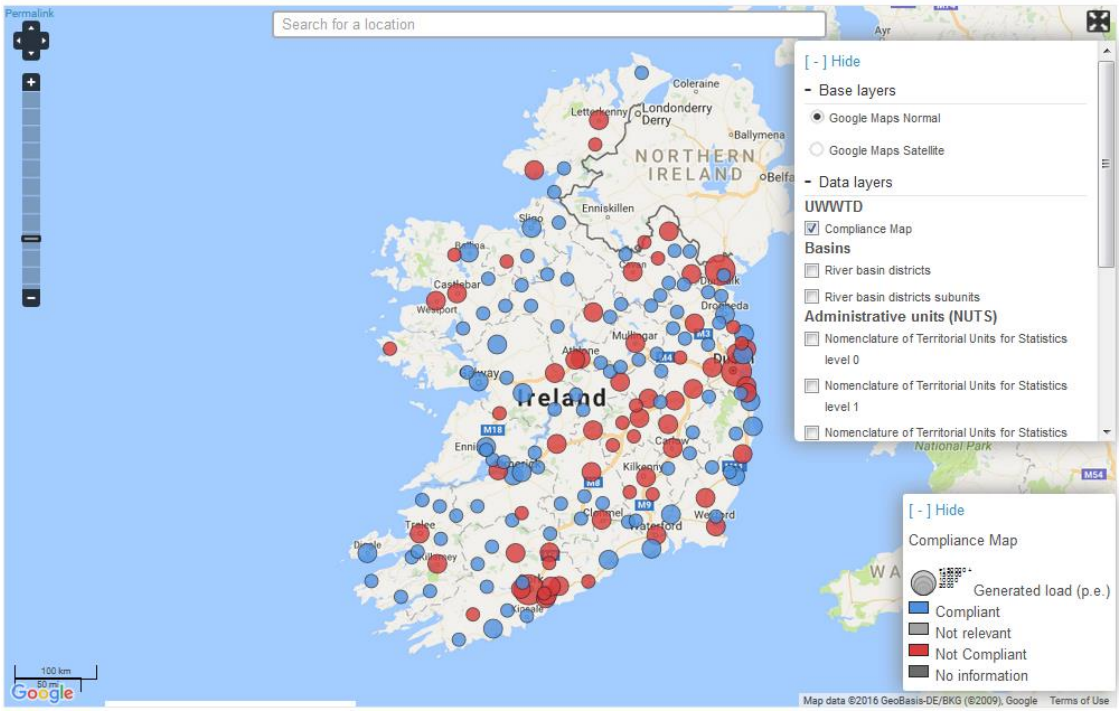
5.1.1 Welcome map

A welcome map with access to the agglomerations, treatment plants and discharge points layers:



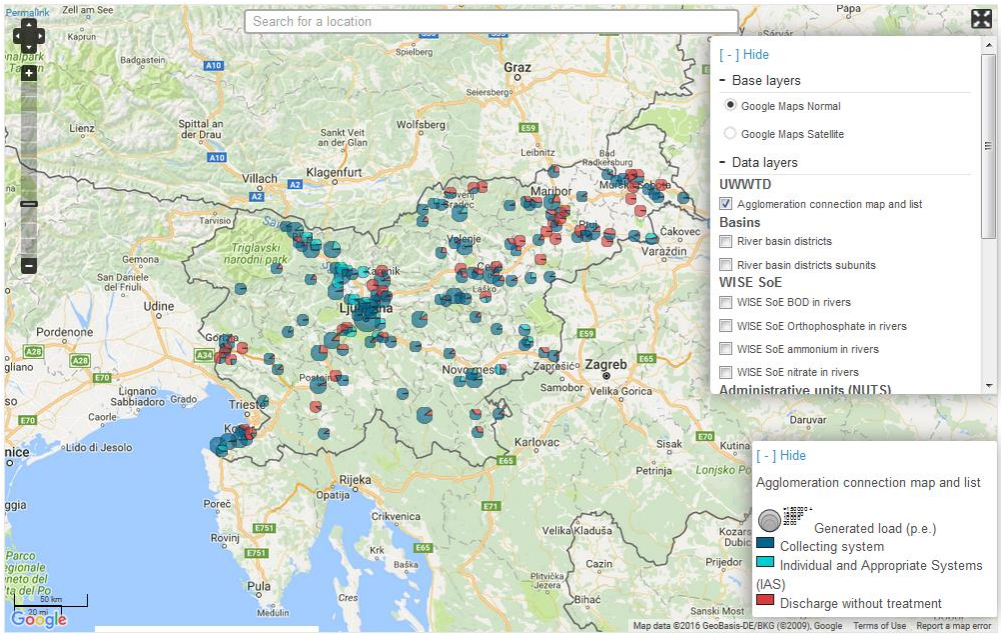
5.1.2 Agglomeration compliance map

An agglomeration compliance map:



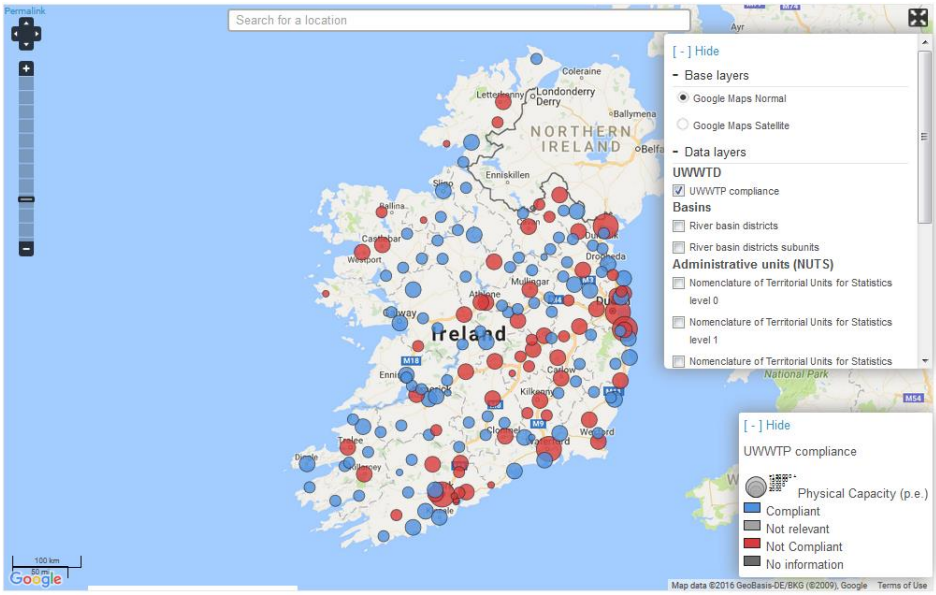
5.1.3 Agglomeration collection map

An agglomeration collection map:



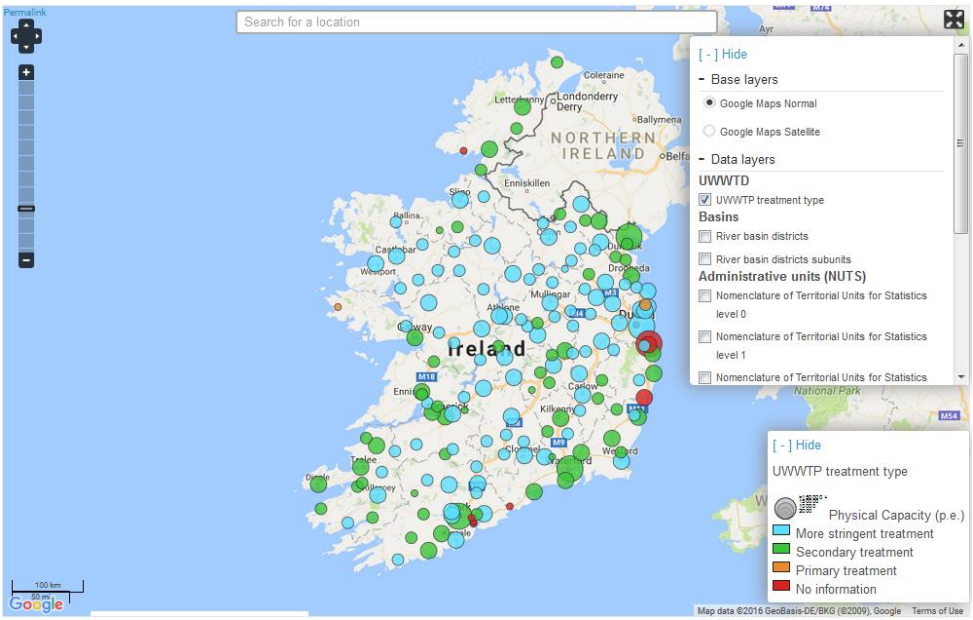
5.1.4 Urban waste water treatment plant compliance map

A urban waste water treatment plant compliance map:



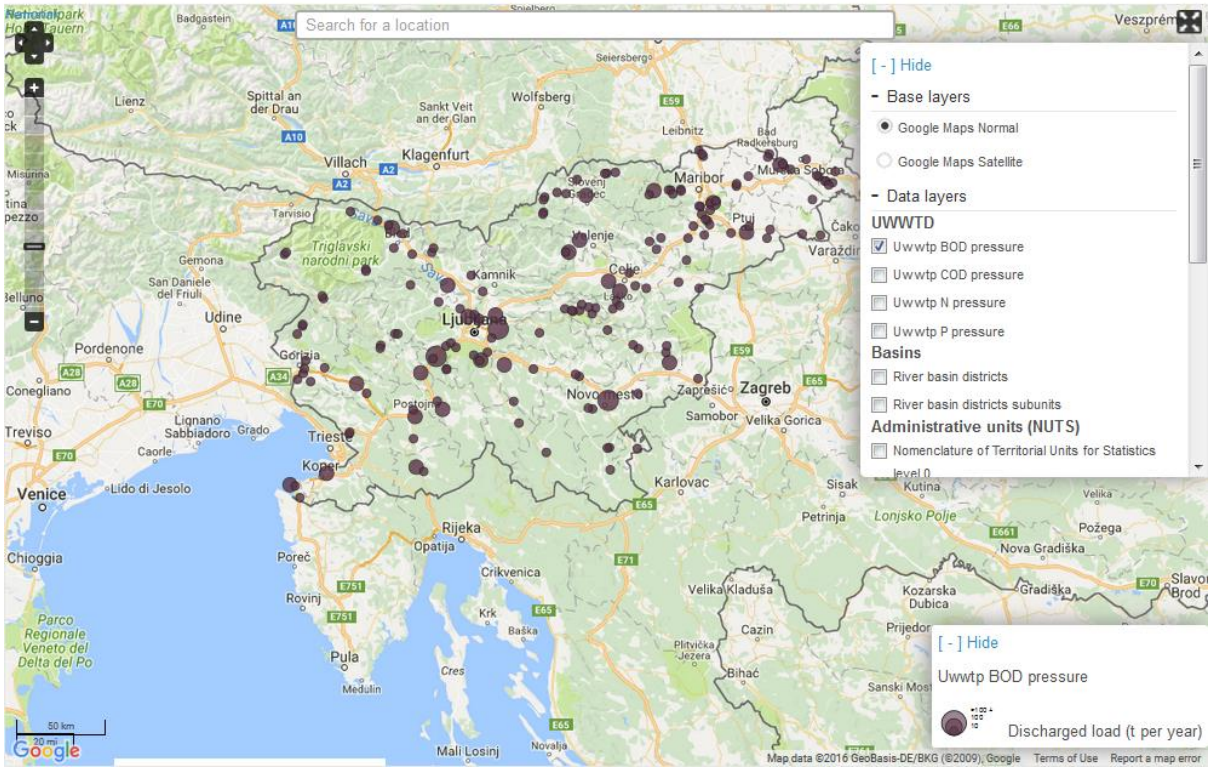
5.1.5 Urban waste water treatment plant treatment map

A urban waste water treatment plant treatment map



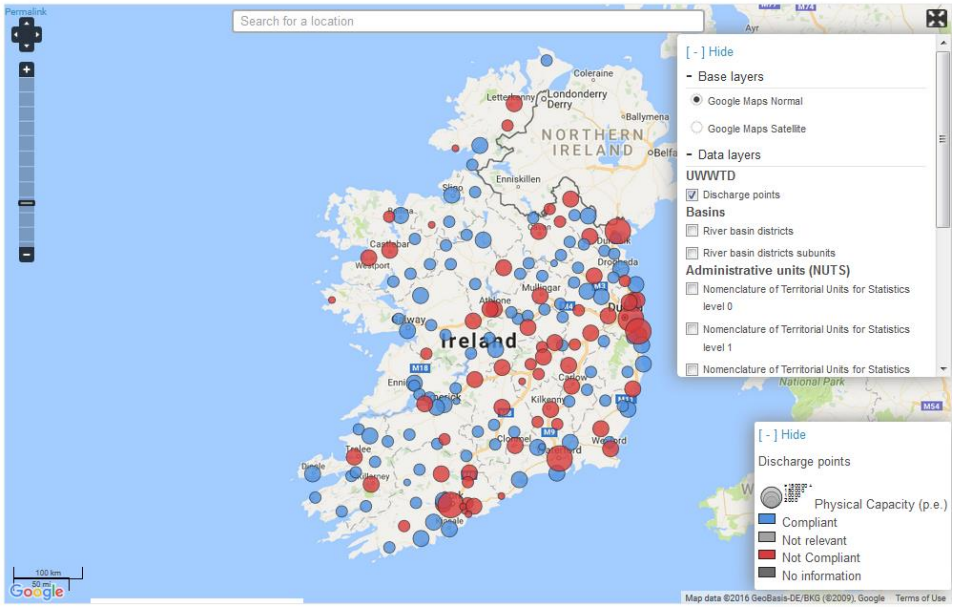
5.1.6 Urban waste water treatment plant pressure map

A urban waste water BOD, COD, N, P pressure map



5.1.7 Discharge point compliance map

A discharge point map



5.1.8 Discharge point reuse map

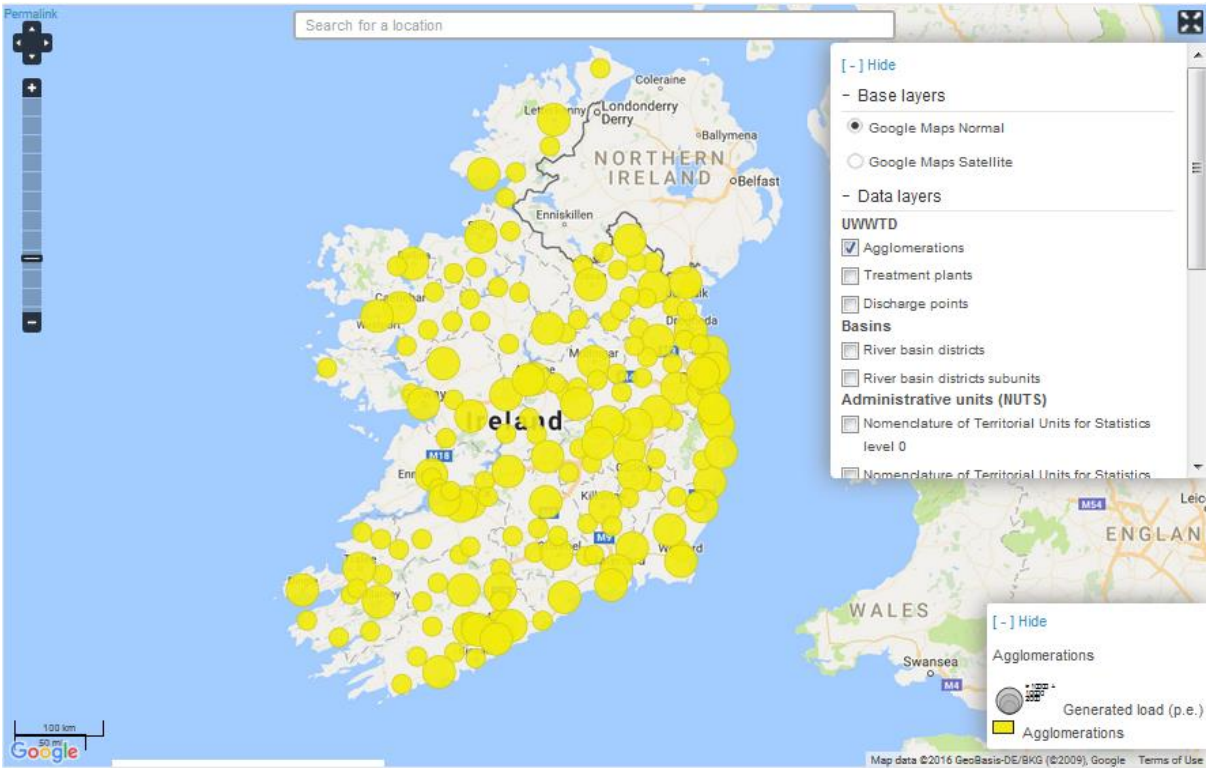
A reuse map (based on discharge point)

5.2 The layers available in all mapviewers

As presented above geographical layers related to urban waste water are available and can be crossed in the same website in order to better understand an environmental situation.

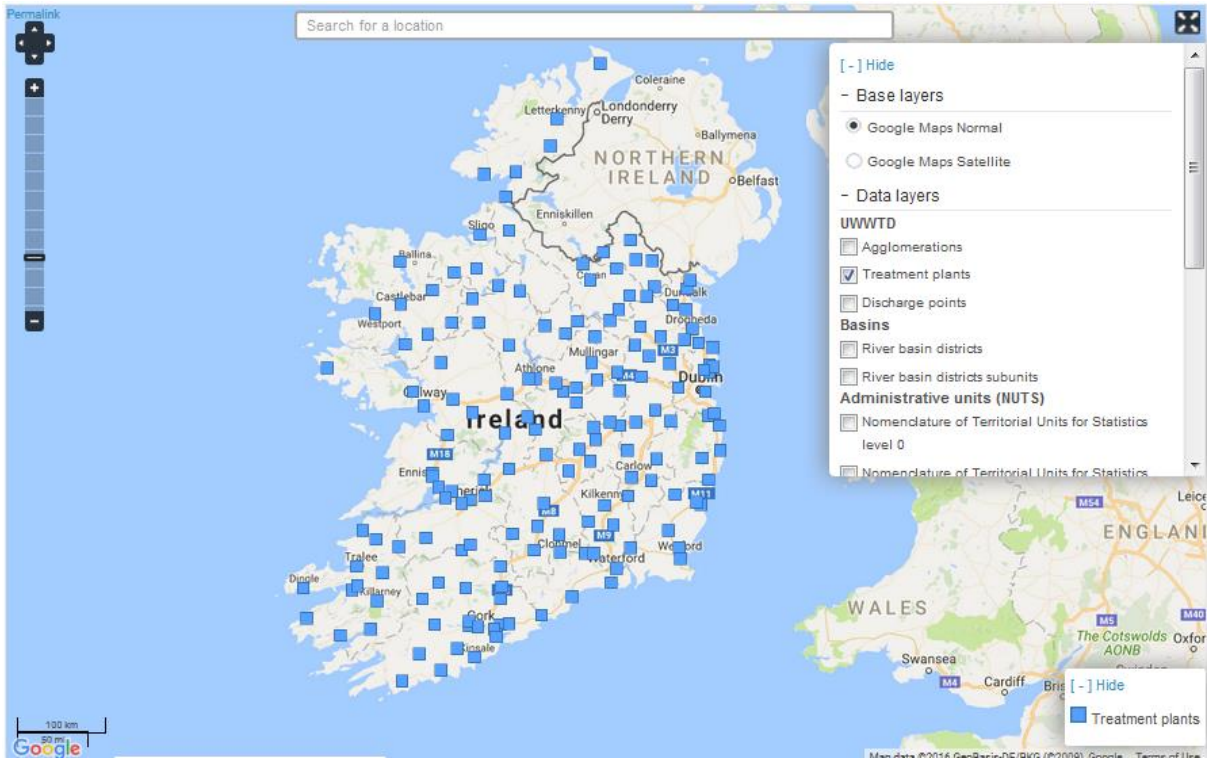
5.2.1 Agglomerations layer

Agglomerations layer



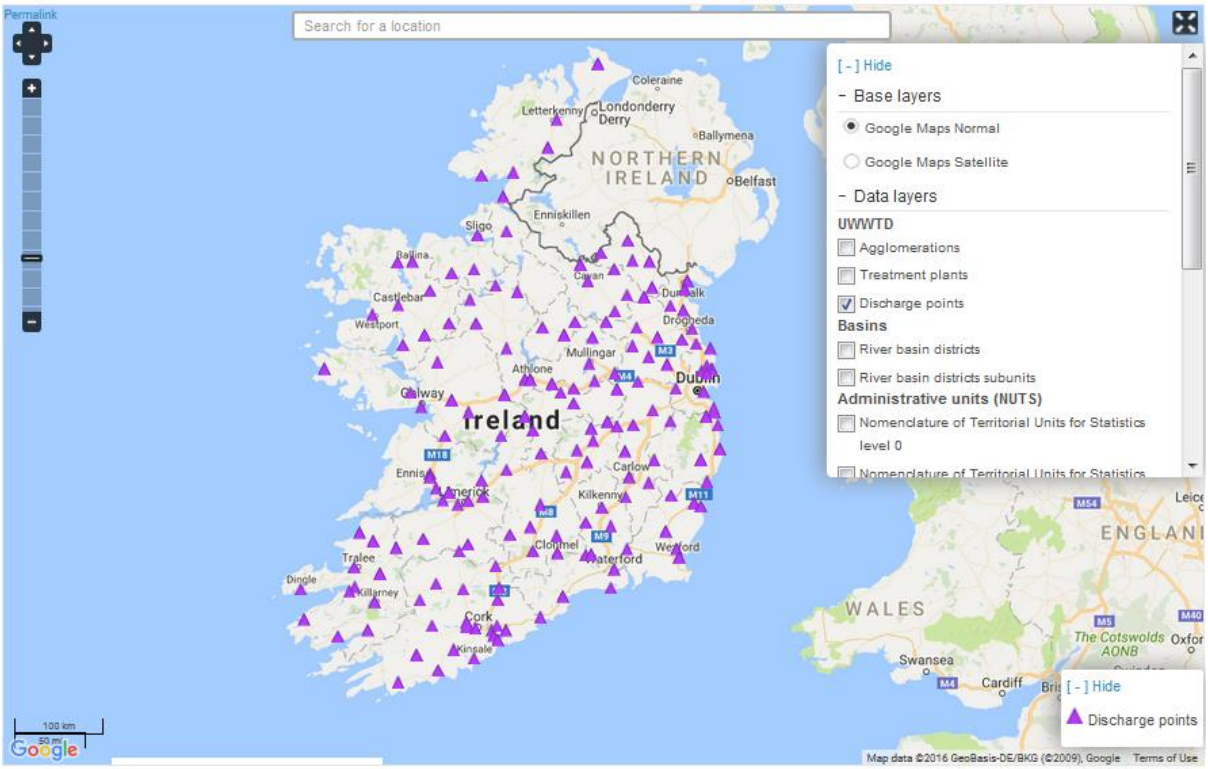
5.2.2 Treatment plants layer

Treatment plants layer



5.2.3 Discharge point layer

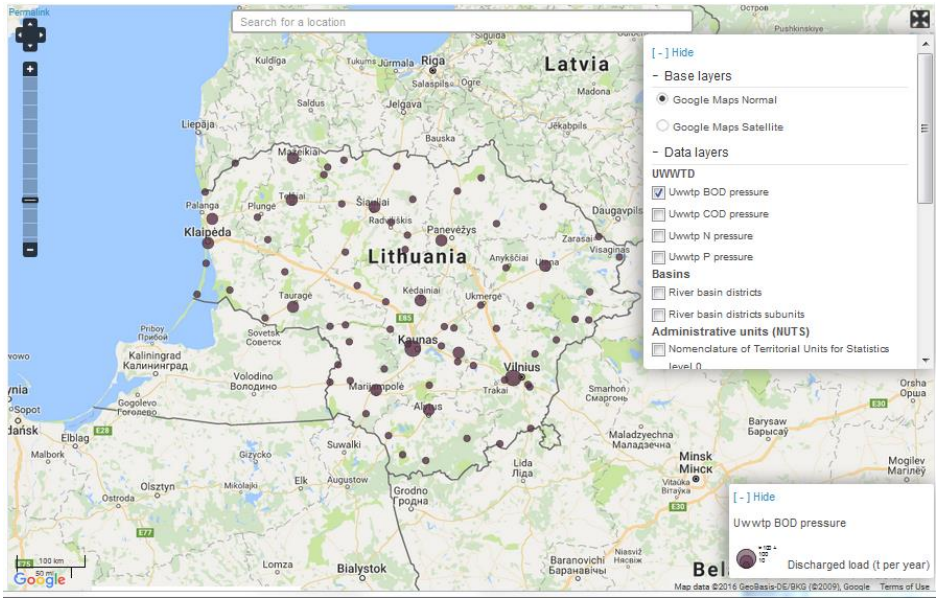
Discharge point layer



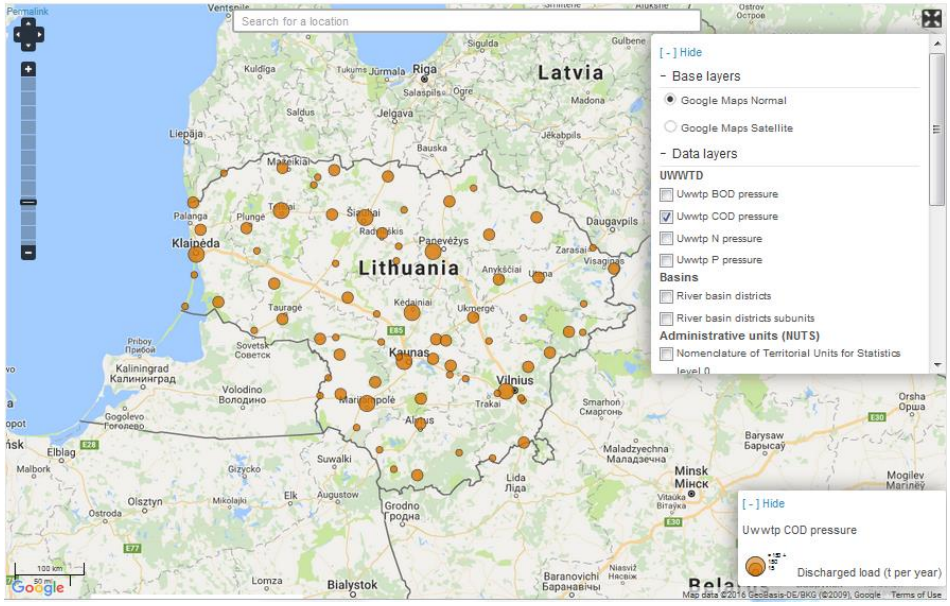
5.2.4 Pressure layers (BOD, COD, Phosphorus & Nitrogen)

For those who provides this information there is also the possibility to have access in the pressure mapviewer to

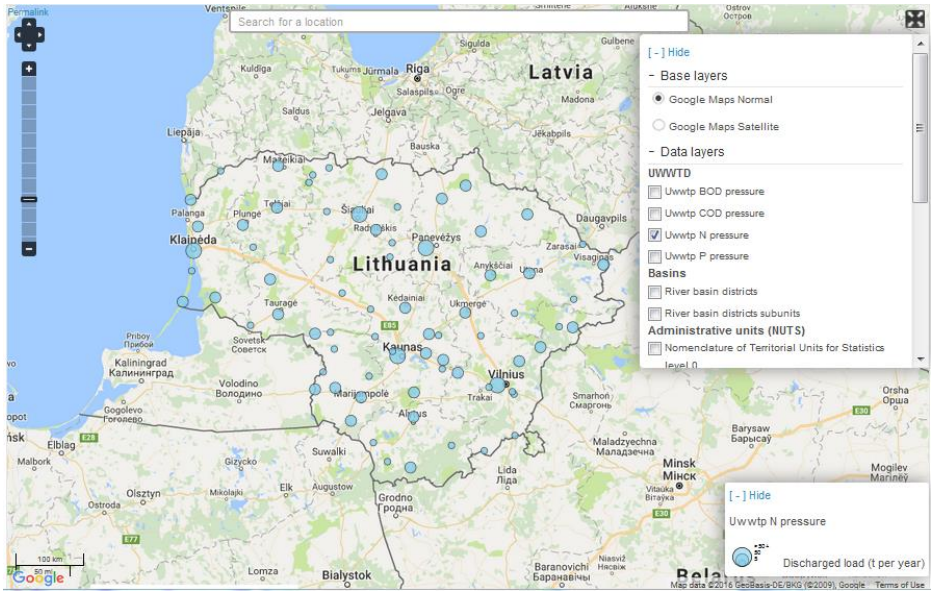
The Uwwtp BOD pressure layer



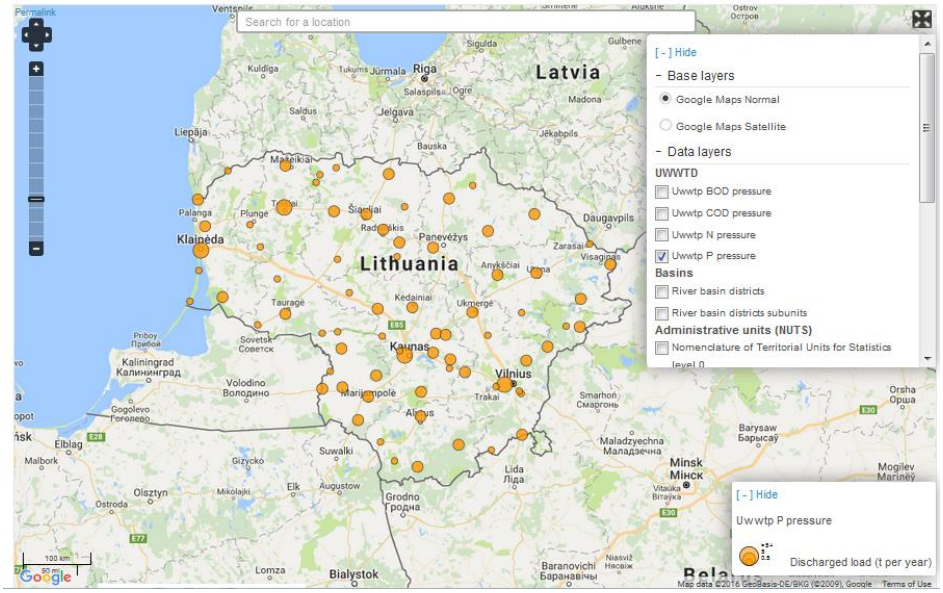
The Uwwtp COD pressure layer



The Uwwtp N pressure layer



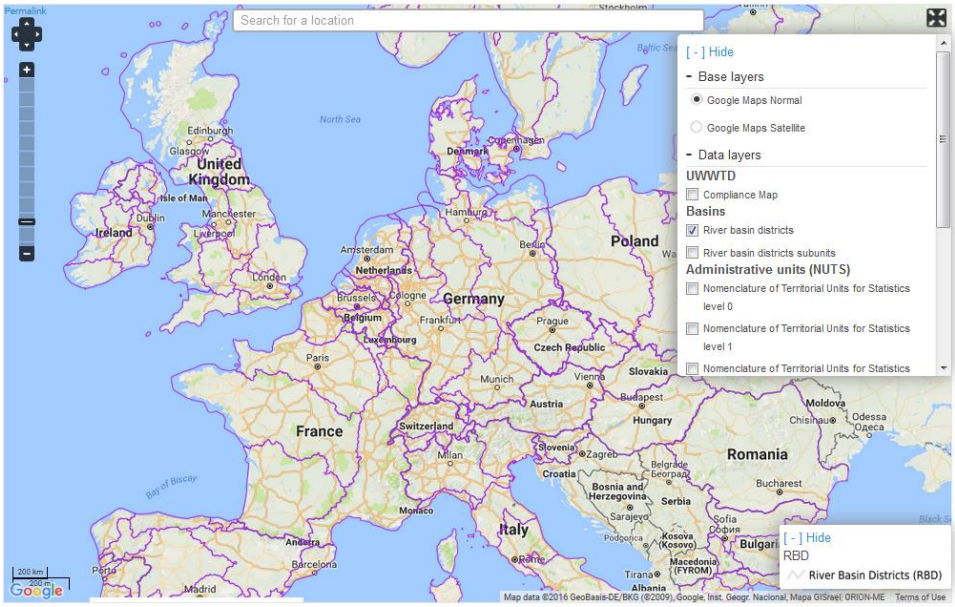
The Uwwtp P pressure layer



Currently only the OSM Mapnik layer is available. Due to a change in the Google policy, plan and satellites layers were disabled

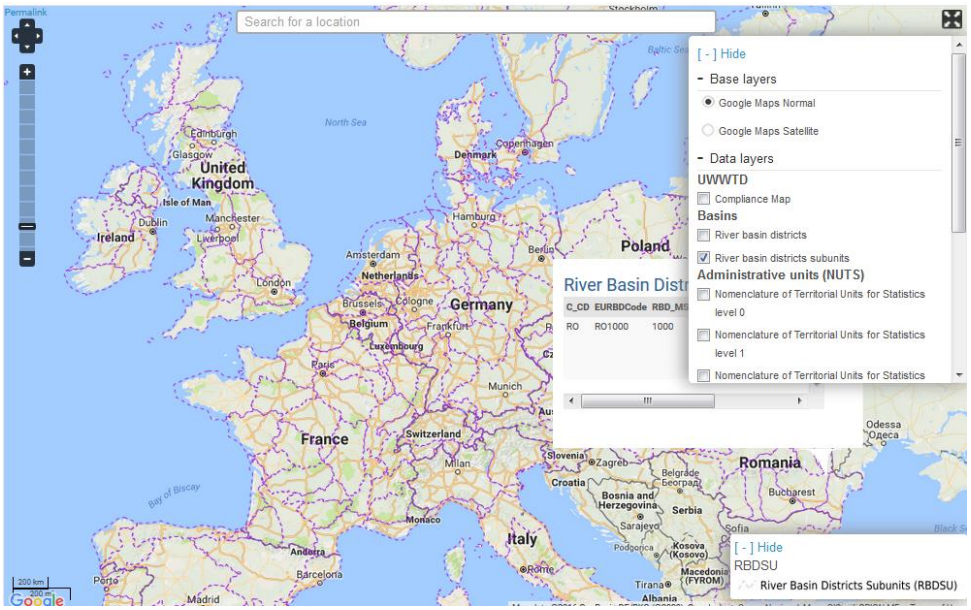
5.2.5 River basin district layer

River basin districts



5.2.6 River basin sub-district layer

River basin subdistricts

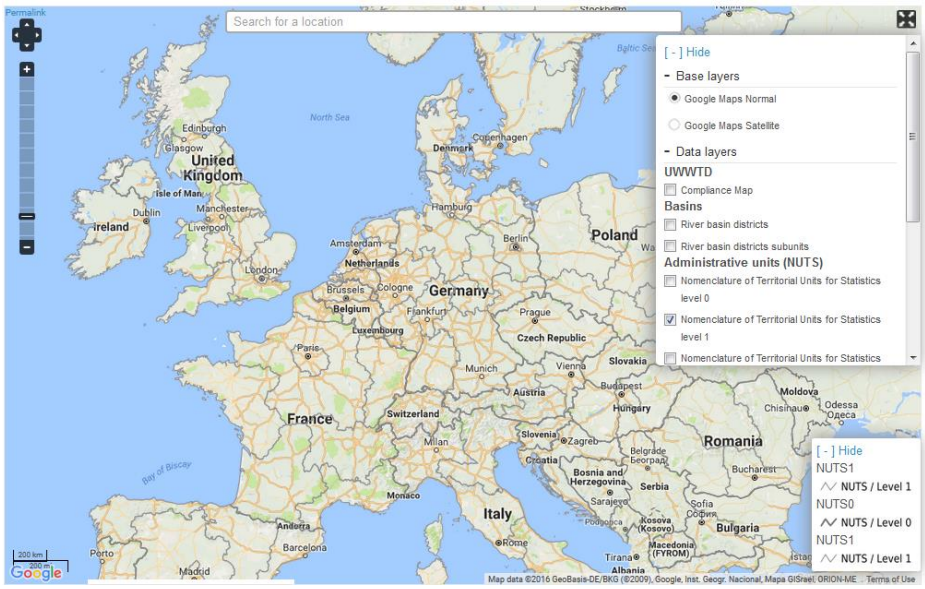


5.2.7 NUTS 0

NUTS 0

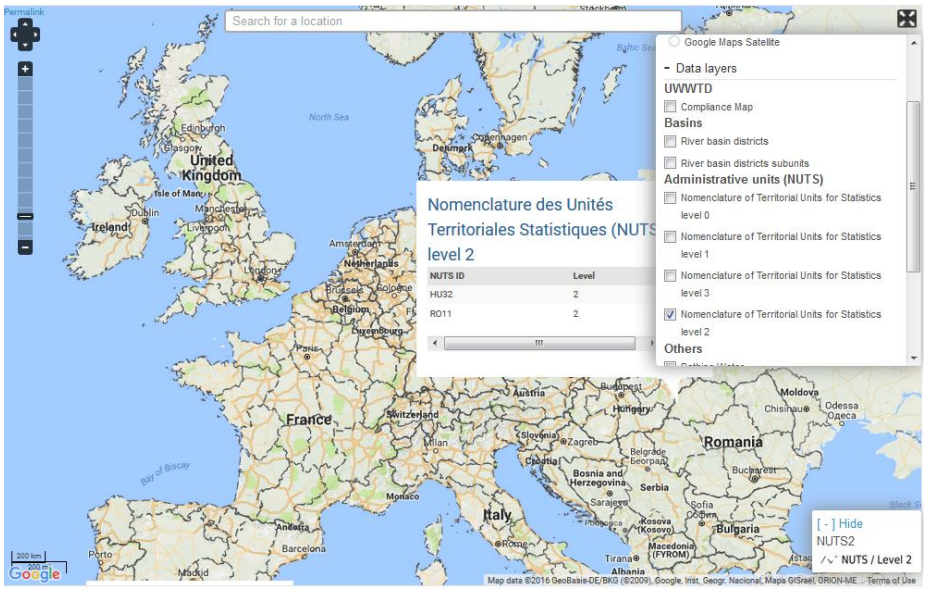
5.2.8 NUTS 1

NUTS 1



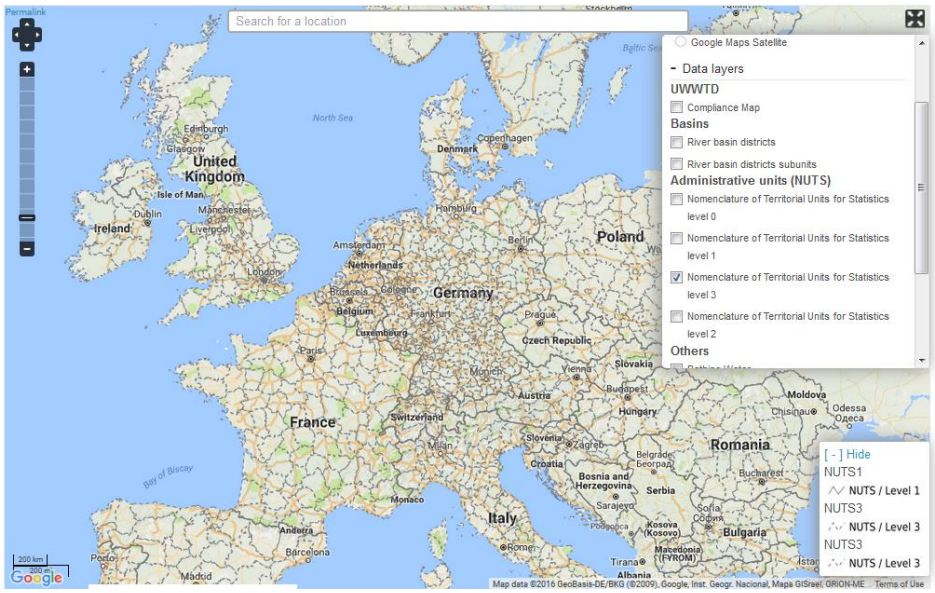
5.2.9 NUTS 2

NUTS 2



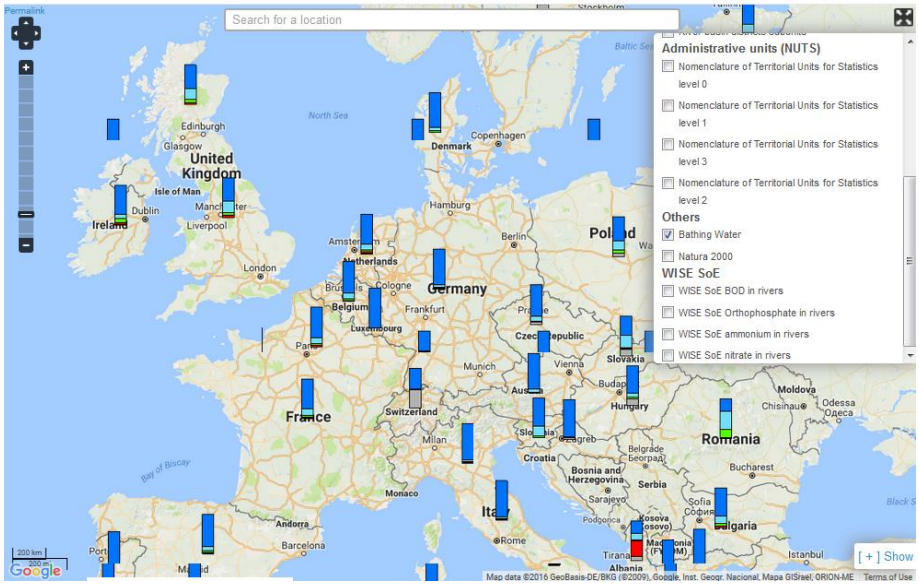
5.2.10 NUTS 3

NUTS 3



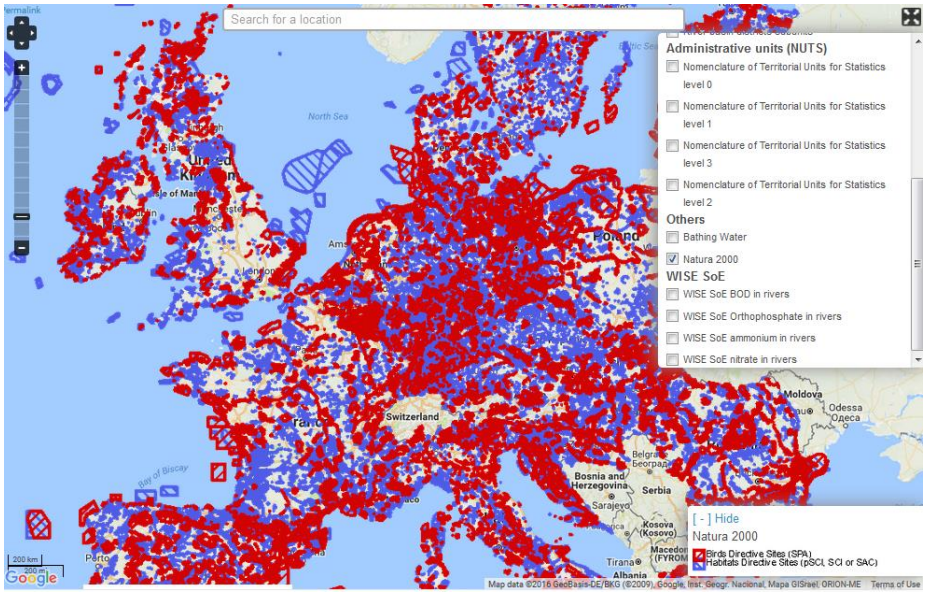
5.2.11 EEA Bathing water

EEA bathing water layer under INSPIRE service with access to national website and bathing water profiles in some countries



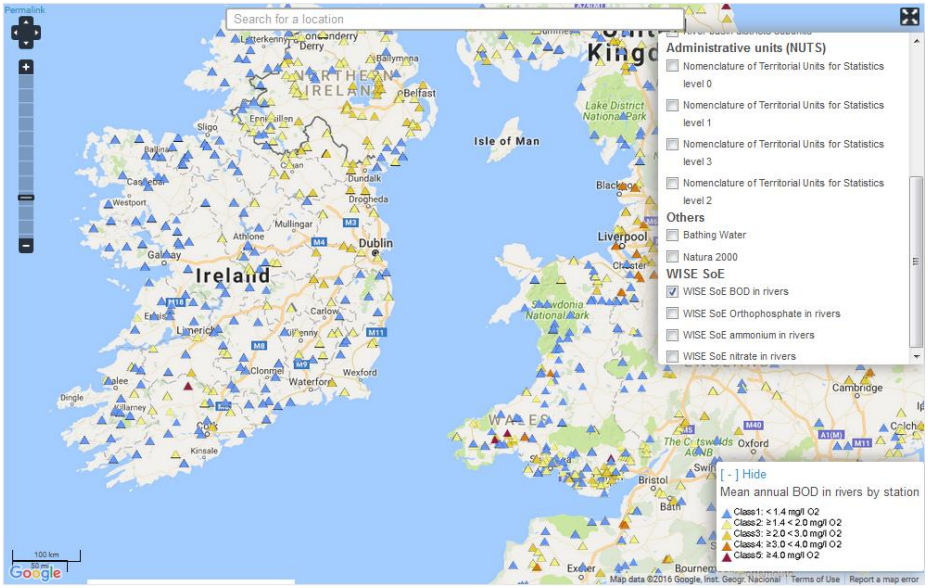
5.2.12 EEA Natura 2000

EEA Natura 2000 layer under INSPIRE service including average concentration per year



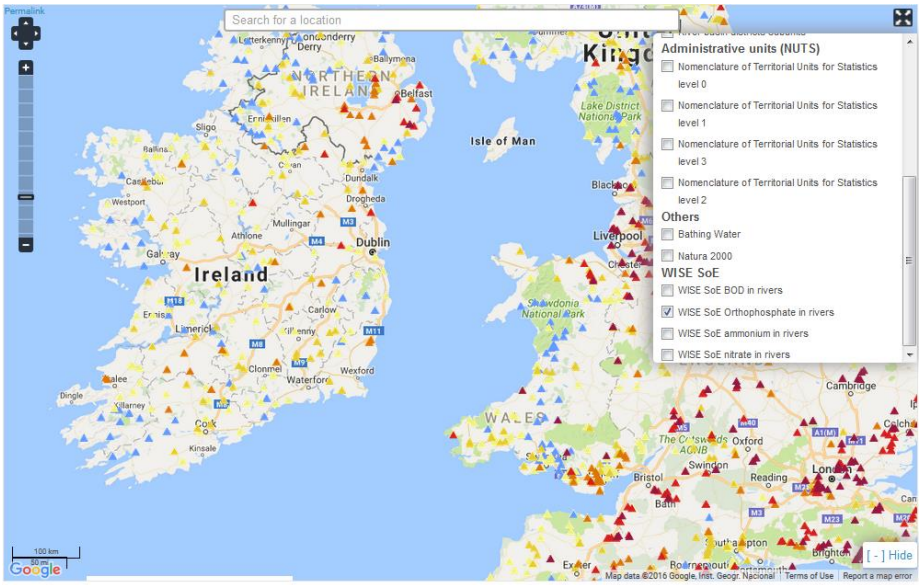
5.2.13 WISE SOE BOD in rivers

Wise SoE BOD in rivers under INSPIRE service including average concentration per year



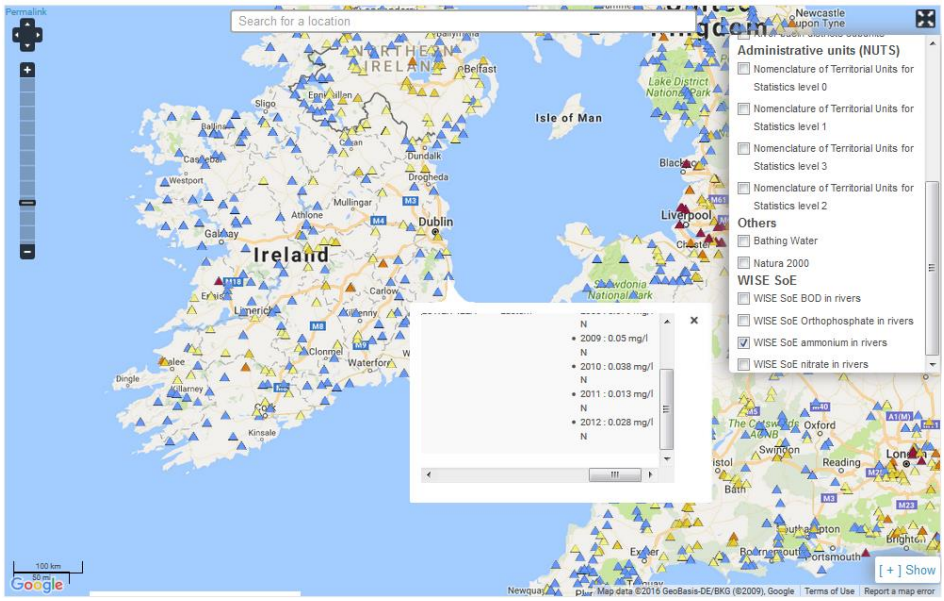
5.2.14 WISE SOE Orthophosphate in rivers

Wise SoE Orthophosphate in rivers under INSPIRE service including average concentration per year



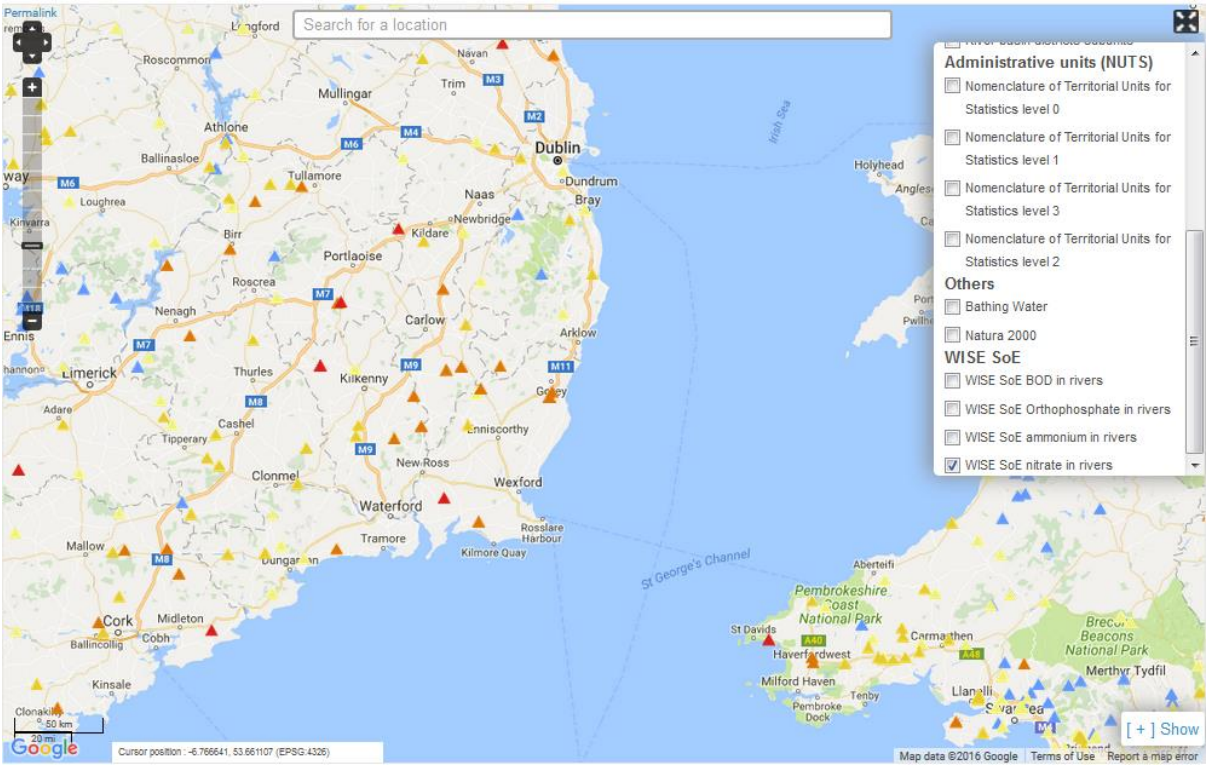
5.2.15 WISE SOE Ammonium in rivers

Wise SoE ammonium in rivers under INSPIRE service including average concentration per year



5.2.16 WISE SOE Nitrate in rivers

Wise SoE nitrate in rivers under INSPIRE service including average concentration per year



Bathing water, Natura 2000 and Wise SoE layers are implemented on this website through INSPIRE services. When it is update at EEA level it is automatically update on this website.

5.3 List of objects with possibility to sort by parameter

In the following tables all columns can be used to sort the information by a simple click.

5.3.1 Agglomeration compliance

Agglomeration compliance list

Name	Identifier Code	Generated Load (p.e.)	Total UWWTP capacity (p.e.)	Region (NUTS)	RBD	Global compliance	Connection compliance	2nd treatment compliance	3rd treatment compliance	Article 17
Ringsend	IEAG_144	2362329	1640000	IE021 Dublin	IEEA Eastern	Not Compliant	Compliant	Compliant	Not Compliant	No
Cork city	IEAG_63	284696	413000	IE025 South-West (IRL)	IESW South Western	Not Compliant	Compliant	Compliant	Not Compliant	Yes
Dundalk	IEAG_298	179000	179000	IE011 Border	GBNIIENB Neagh Bann	Not Compliant	Compliant	Compliant	Not Compliant	No

5.3.2 Agglomeration collection

Agglomeration collection list

Name	Identifier Code	Generated Load (p.e.)	Total UWWTP capacity (p.e.)	Region (NUTS)	RBD	Collecting system (% of p.e.)	IAS (% of p.e.)	Discharge without treatment (% of p.e.)	Article 17
Ringsend	IEAG_144	2 362 329	1 640 000	IE021 Dublin	IEEA Eastern	100.0	0.0	0.0	No
Cork city	IEAG_63	284 696	413 000	IE025 South-West (IRL)	IESW South Western	100.0	0.0	0.0	Yes
Dundalk	IEAG_298	179 000	179 000	IE011 Border	GBNIIENB Neagh Bann	100.0	0.0	0.0	No
Limerick City and Environs	IEAG_771	130 000	130 000	IE023 Mid-West	IEGBNISH Shannon	100.0	0.0	0.0	No
Drogheda	IEAG_299	101 000	101 000	IE011 Border	IEEA Eastern	100.0	0.0	0.0	No
Mutton Island WWTW	IEAG_162	91 600	91 600	IE013 West	IEWE Western	100.0	0.0	0.0	No

5.3.3 Urban waste water treatment plant

Urban waste water treatment plant compliance list

Description							Compliance	Performance				
Name	Identifier Code	Load entering (p.e.)	Physical Capacity (p.e.)	Region (NUTS)	RBD	Treatment in place	Global compliance	BOD5	COD	Total nitrogen	Total phosphorus	Article 17
Ringsend Waste Water Treatment Plant	IETP_133	2 362 329	1 640 000	IE021 Dublin	IEEA Eastern	More stringent treatment	Not Compliant	Pass	Pass	Fail	Fail	Yes
Cork City Waste Water Treatment Plant	IETP_532	284 696	413 000	IE025 South-West (IRL)	IESW South Western	Secondary treatment	Not Compliant	Pass	Pass	Fail		Yes
Dundalk Waste Water Treatment Plant	IETP_281	179 000	179 000	IE011 Border	GBNIIENB Neagh Bann	Secondary treatment	Not Compliant	Pass	Pass	Fail	Fail	Yes

Urban waste water treatment plant treatment list

Name	Identifier Code	Load entering (p.e.)	Physical Capacity (p.e.)	Region (NUTS)	RBD	Primary treatment	Secondary treatment	N removal	P removal	Other more stringent treatment	Article 17
Ringsend Waste Water Treatment Plant	IETP_133	2 362 329	1 640 000	IE021 Dublin	IEEA Eastern	Yes	Yes		No	SBR with uv disinfection	Yes
Cork City Waste Water Treatment Plant	IETP_532	284 696	413 000	IE025 South-West (IRL)	IESW South Western	Yes	Yes		No		Yes
Dundalk Waste Water Treatment Plant	IETP_281	179 000	179 000	IE011 Border	GBNIIENB Neagh Bann	Yes	Yes		No		Yes
Limerick City Waste Water Treatment Plant	IETP_535	130 000	130 000	IE023 Mid-West	IEGBNISH Shannon	Yes	Yes		No		No

5.3.4 Urban waste water treatment plant pressure

Urban waste water treatment plant pressure list

Name	Identifier Code	Load entering (p.e.)	Physical Capacity (p.e.)	Region (NUTS)	RBD	Discharged load BOD (t per year)	Discharged load COD (t per year)	Discharged load Ntot (t per year)	Discharged load Ptot (t per year)
Vilniaus nuoteku valykla	LT-AG-001-WWTP-01	631 160	740 000	LT00	LT1100 Nemunas River Basin District	292.00	2 761.00	359.00	28.74
Panevezio nuoteku valykla	LT-AG-005-WWTP-01	273 070	292 000	LT00	LT1100 Nemunas River Basin District	42.00	535.94	65.53	4.56
Kauno nuoteku valykla	LT-AG-002-WWTP-01	236 540	432 000	LT00	LT1100 Nemunas River Basin District	144.06	780.47	198.61	6.96

5.3.5 Discharge point

Discharge point list

175 results | Download results: csv xls

Name	Identifier Code	Linked receiving areas	Type of area	Linked treatment plant	Compliance of treatment plant
DP_SI_AGG_SI_BISTRICA OB DRAVI IN LOG_16520	SI_DP_AGG_SI16520	Catchment of MPVT Drava Dravograd – Maribor	Catchment of Sensitive Area	SI_AGG_SI_BISTRICA OB DRAVI IN LOG_16520	Pending Deadline
DP_SI_AGG_SI_BOHINJSKA BISTRICA_3414	SI_DP_AGG_SI03414	Catchment of VT Sava Sveti Janez – Jezernica	Catchment of Sensitive Area	SI_AGG_SI_BOHINJSKA BISTRICA_3414	Pending Deadline
DP_SI_AGG_SI_BOROVNICA_16466	SI_DP_AGG_SI16466	Catchment of VT Ljubljanica povirje – Ljubljana	Catchment of Sensitive Area	SI_AGG_SI_BOROVNICA_16466	Pending Deadline
DP_SI_AGG_SI_BOVEC *_2873	SI_DP_AGG_SI02873	Catchment of VT Soča Bovec – Tolmin	Catchment of Sensitive Area	SI_AGG_SI_BOVEC *_2873	Pending Deadline
DP_SI_AGG_SI_BRATONCI_9633	SI_DP_AGG_SI09633	Catchment of VT Ledava	Catchment of	SI_AGG_SI_BRATONCI_9633	Pending Deadline

5.3.6 Discharge point - reuse

Discharge point list with a reuse

29 results | Download results: csv xls

Name	Identifier Code	Linked receiving areas	Type of area	Linked treatment plant	Compliance of treatment plant	Type of reuse	Volume (m3/y)
Agrokipia land	CY11_4-DisPoint		NA	Anthoupolis-B	Compliant	Irrigation	1,525,793
Agros land	CY503-DisPoint		NA	Agros	Compliant	Irrigation	91,250
Akrotiri Aquifer	CY51-DisPointC5		NA	Limassol	Compliant	Industry	8,154,210

5.3.7 Sensitive areas

Sensitive areas list

296 results | Download results: csv xls

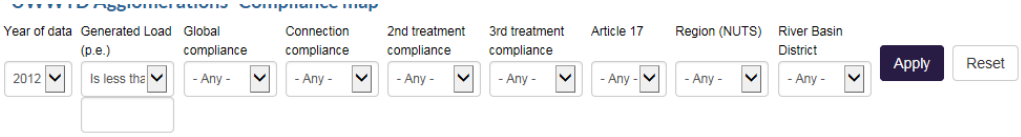
Name	Identifier Code	Type of area	Article 52 applied	Article 54 applied	Article 58 applied	Number of UWWTP	Total physical Capacity (p.e.)	Total load entering (p.e.)
VT Ljubljanica Zalog – Podgrad	SIRI-SI14VT97	Sensitive Area	Yes	No	No	1	360 000	462 872
Catchment of VT Sava Krško – Vrbina	SICM-SI1VT913	Catchment of Sensitive Area	Yes	No	No	2	193 500	167 065
Catchment of VT Drava Maribor – Ptuj	SICM-SI3VT5171	Catchment of Sensitive Area	Yes	No	No	3	190 000	138 872
Catchment of VT Kamniška Bistrica Študa – Dol	SICM-SI132VT7	Catchment of Sensitive Area	Yes	No	No	1	200 000	132 337

5.4 Criteria Selection

This selection allows displaying only the selected objects in the map and in the list above

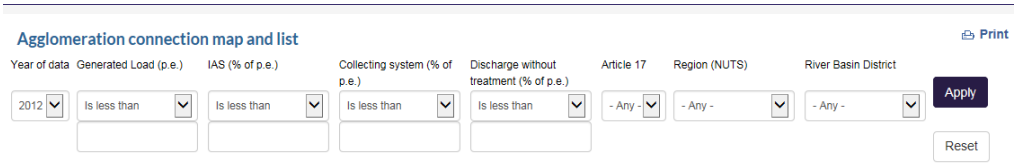
5.4.1 Agglomeration compliance

Agglomeration compliance



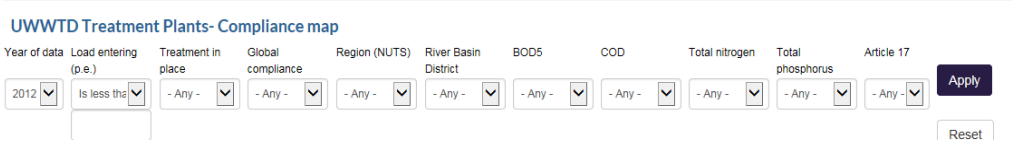
5.4.2 Agglomeration collection

Agglomeration collection



5.4.3 Urban Waste Water Treatment Plants compliance

Urban waste water treatment plants compliance

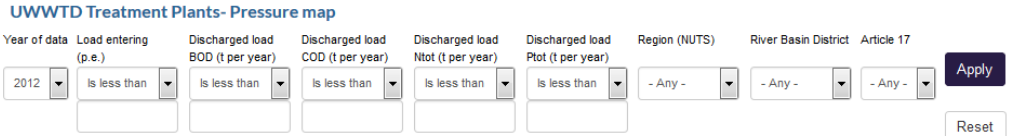


5.4.4 Urban Waste Water Treatment Plants treatment

Urban waste water treatment plants treatment

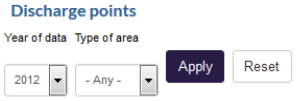
5.4.5 Urban Waste Water Treatment Plants pressure

Urban waste water treatment plants pressure



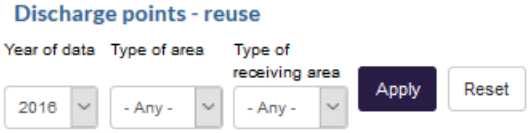
5.4.6 Discharge points

Discharge points



5.4.7 Discharge points - reuse

Discharge points with a reuse



5.4.8 Sensitive areas

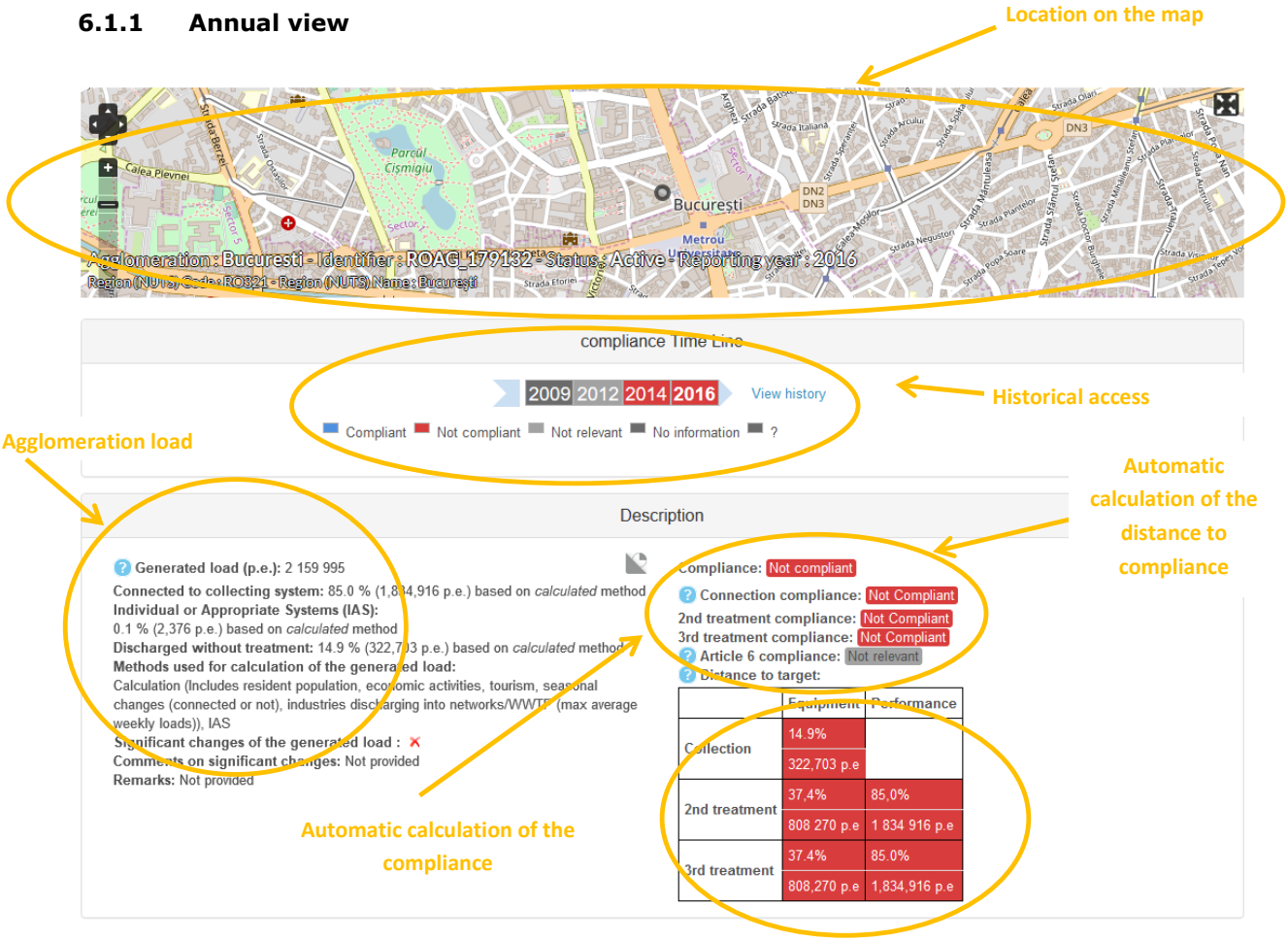
Sensitive areas

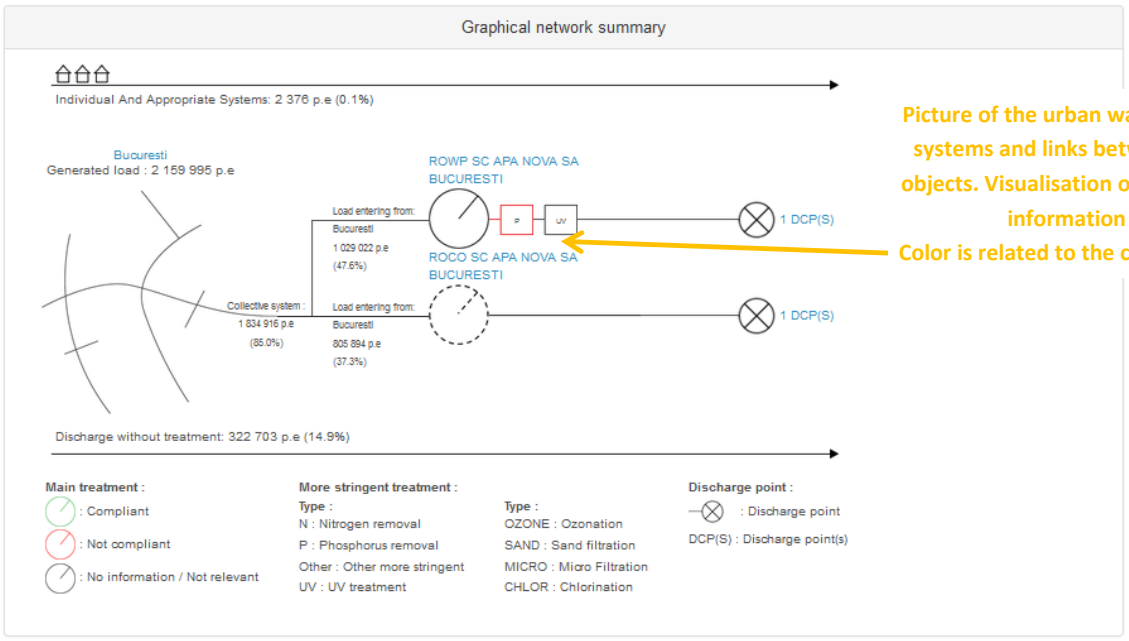
6. DETAILED INFORMATION ABOUT EACH OBJECT

The website displays the content of the European urban waste water database in and user-friendly ways using map to locate the object, picture to illustrate the links between the objects. It provides also historical approach and easy access to the other linked object.

6.1 Urban Waste Water Agglomeration

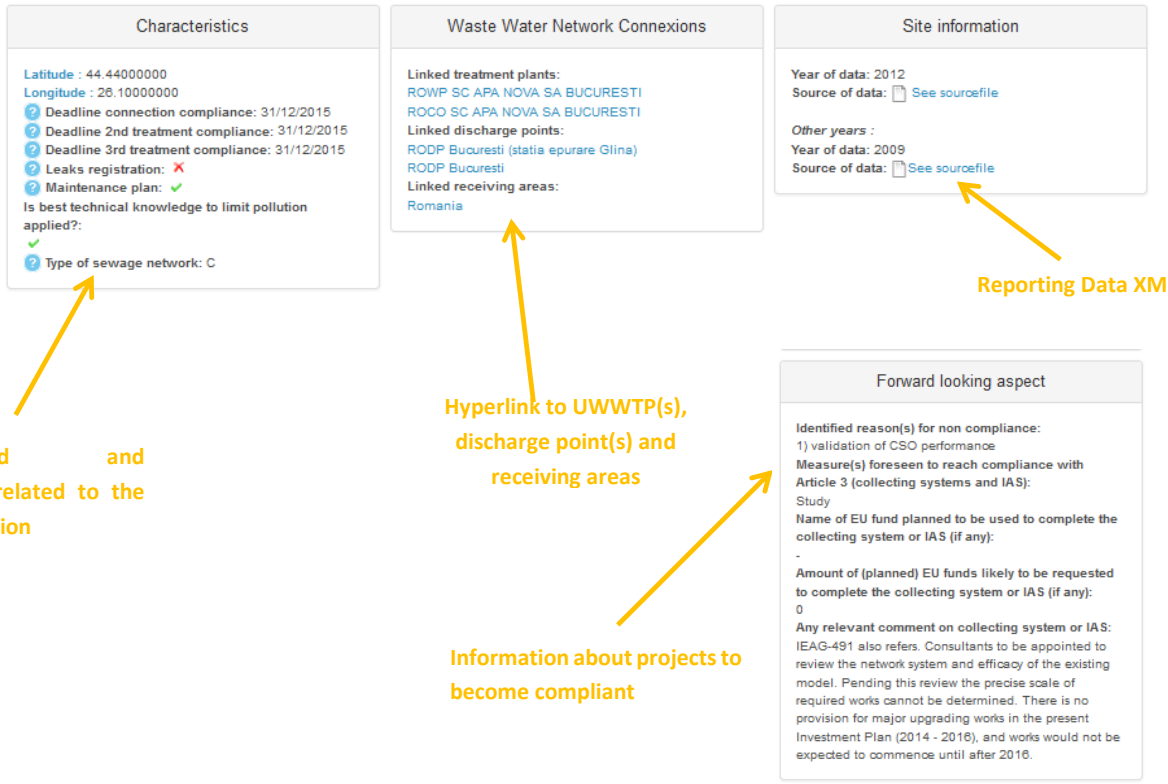
6.1.1 Annual view





Picture of the urban waste water systems and links between the objects. Visualisation of the main information

Color is related to the compliance



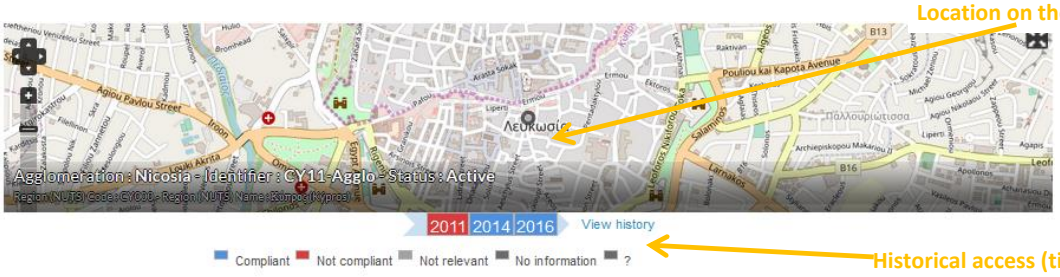
Reporting Data XML

Coordinated and deadlines related to the agglomeration

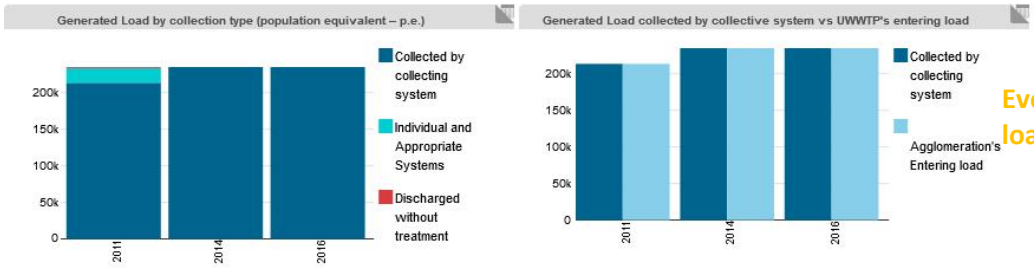
Hyperlink to UWWTP(s), discharge point(s) and receiving areas

Information about projects to become compliant

6.1.2 Historical view



Generated load and collection



Distance to target

On equipment

Year	Collection	2nd treatment	3rd treatment
2011	1,434 p.e.	9 p.e.	140,000 p.e.
	0.6%	0.0%	59.6%
2014	0 p.e.	-0 p.e.	0 p.e.
	0.0%	-0.0%	0.0%
2016	0 p.e.	0 p.e.	0 p.e.
	0.0%	0.0%	0.0%

On performance

Year	Collection	2nd treatment	3rd treatment
2011	-	140,009 p.e.	213,487 p.e.
	-	59.6%	90.8%
2014	-	-0 p.e.	- p.e.
	-	-0.0%	-%
2016	-	0 p.e.	- p.e.
	-	0.0%	-%

Evolution of distance to target

The distance to target concept present the rate of waste water load that is:

- adequately connected to a centralised urban waste water collecting system or addressed via Individual or Appropriate System (IAS)

and then when collected:

- treated at an adequate level (secondary or more stringent treatment) as required by the directive,
- and with the performance requirements under tables 1 or 2 of the annex I of Directive 91/271/EEC, (UWWTD).

When countries joined the EU, they have obtained a delay to implement the Directive. In such case the deadline for implementing the above (see in section characteristics) may be different, and if the above is not already implemented for the agglomeration it is identified with orange colour in the table.

Treatment plants

Main change in linked UWWTP

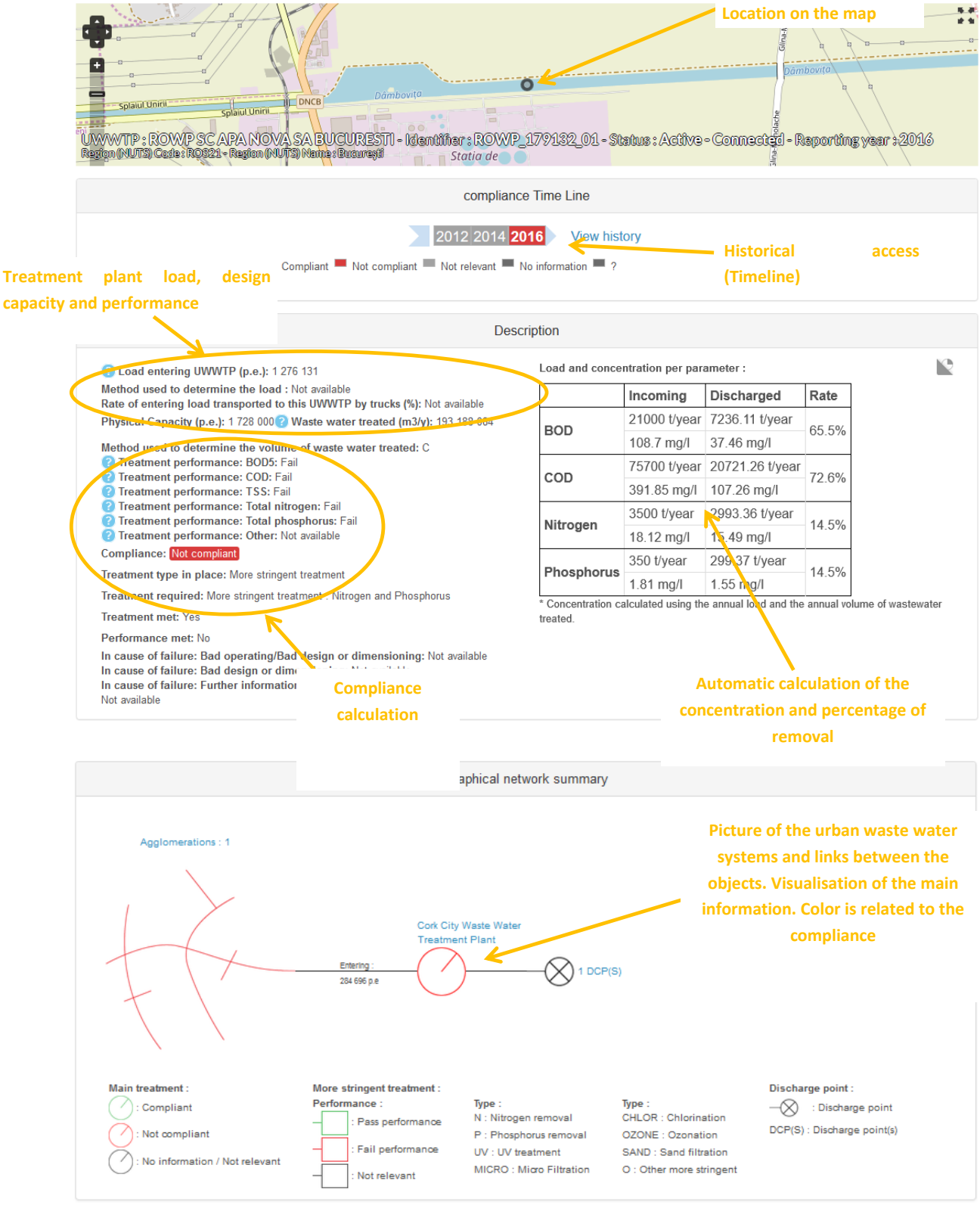
- There is a change in number of elements between *2011* and *2014*
- There are new elements between *2011* and *2014*: CY11_6_UWWTP.
- There are missing elements between *2011* and *2014*: CY11_1_UWWTP,CY11_3_UWWTP.

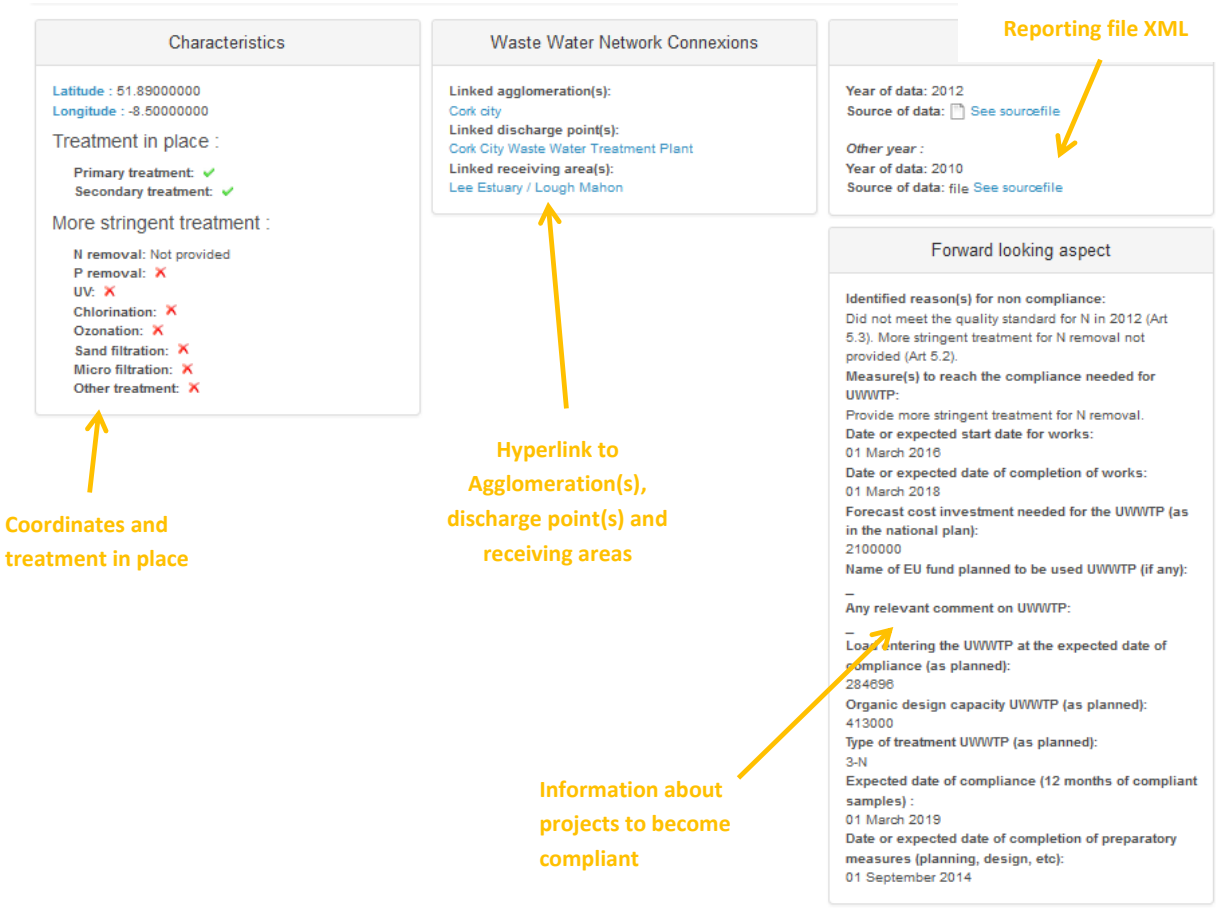
Year	Linked Treatment Plant(s)	Total design capacity	Total entering load
2011	• Not Compliant Mia Milia [CY11_1_UWWTP] • Not Compliant Central Vathia Gonia [CY11_3_UWWTP] • Not Compliant Anthoupolis-B [CY11_4_UWWTP] • Not Compliant Vathia-Gonia-A [CY11_5_UWWTP]	483,900 p.e.	237,555 p.e.
2014	• Compliant Mia Milia B [CY11_6_UWWTP] • Compliant Anthoupolis-B [CY11_4_UWWTP] • Compliant Vathia-Gonia-A [CY11_5_UWWTP]	600,784 p.e. 2011's delta : 116,884 p.e. (+24.2 %)	248,500 p.e. 2011's delta : 10,945 p.e. (+4.6 %)
2016	• Compliant Mia Milia B [CY11_6_UWWTP] • Compliant Anthoupolis-B [CY11_4_UWWTP] • Compliant Vathia-Gonia-A [CY11_5_UWWTP]	600,784 p.e. 2014's delta : 0 p.e. (0 %)	255,500 p.e. 2014's delta : 7,000 p.e. (+2.8 %)

Linked UWWTP description

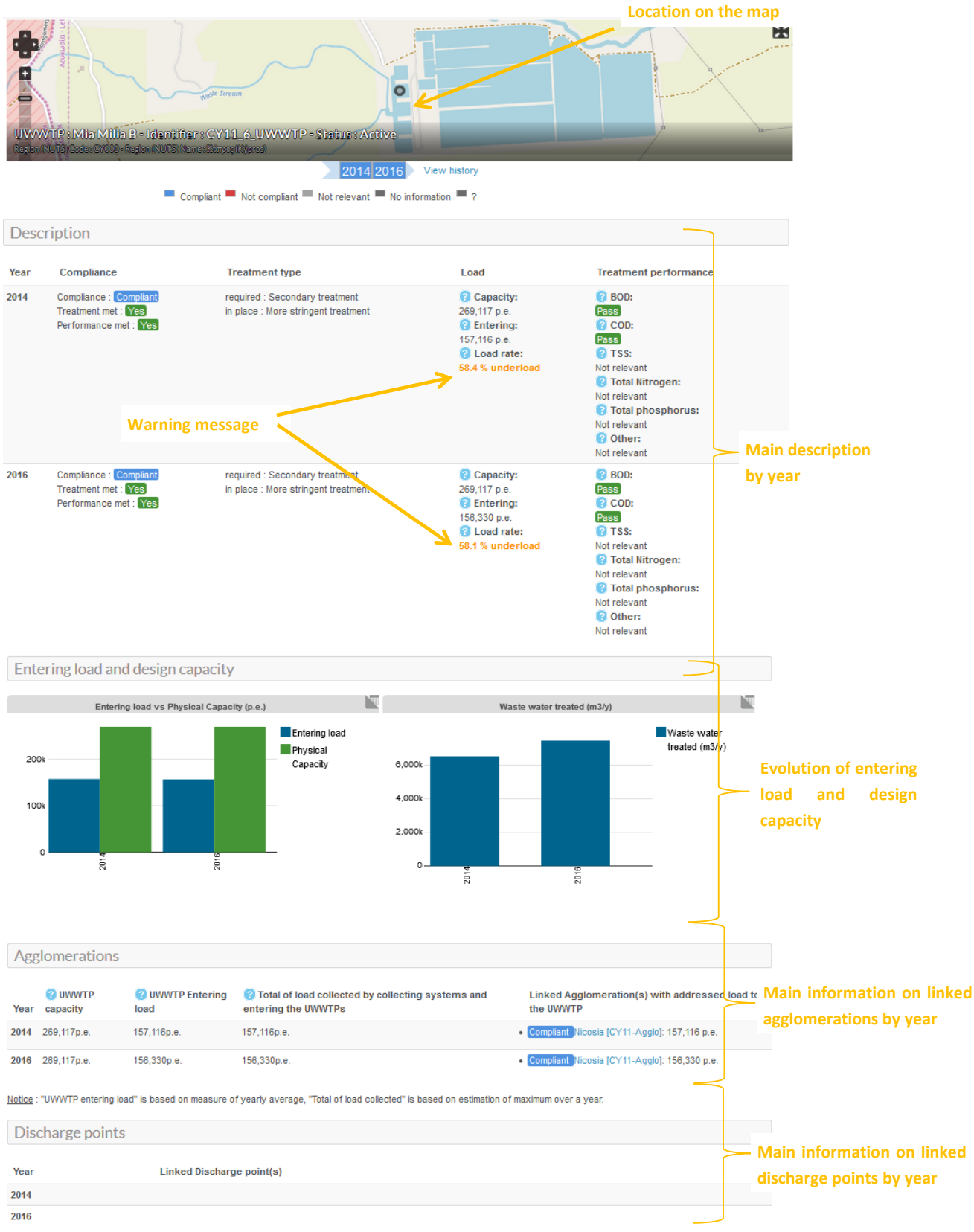
6.2 Urban Waste Water Treatment Plant

6.2.1 Annual view

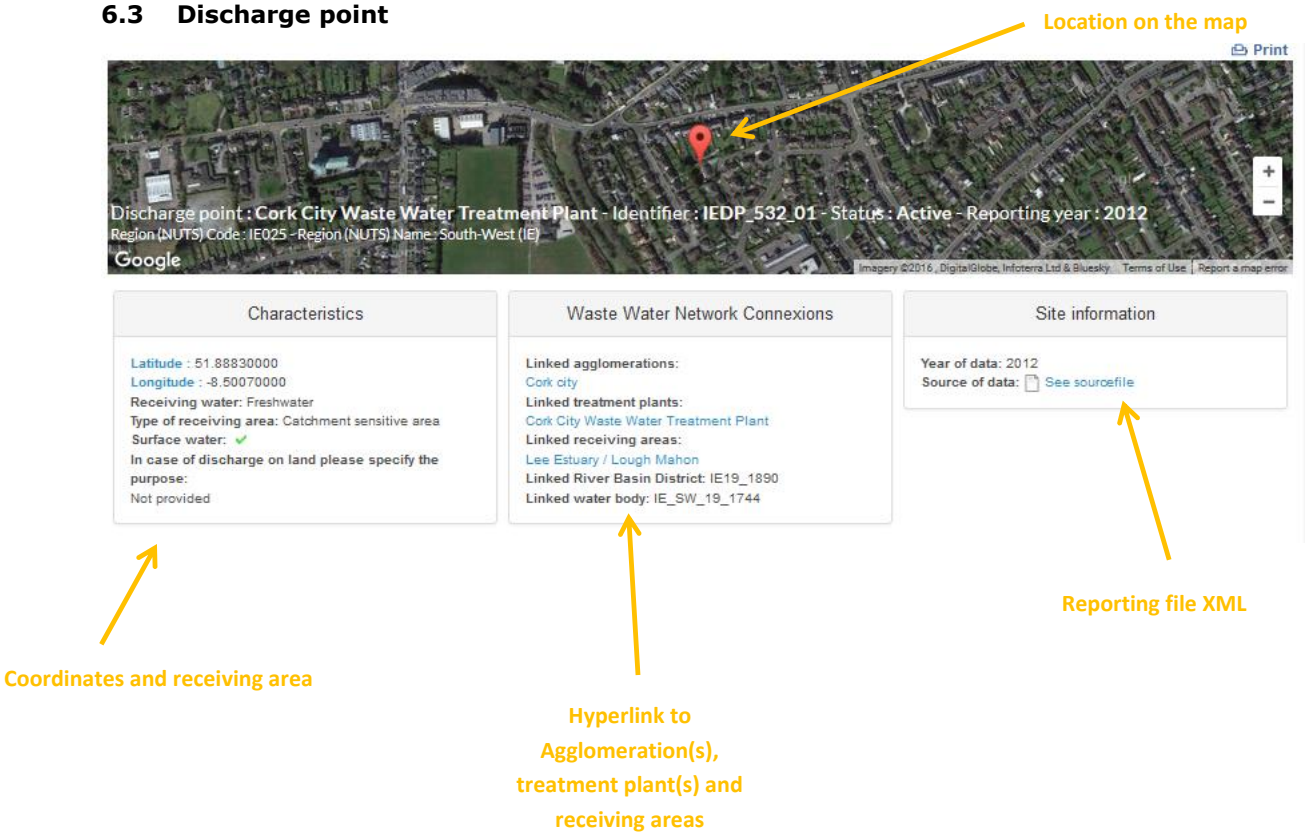



Characteristics
Latitude : 51.89000000
Longitude : -8.50000000
Treatment in place :
Primary treatment:
Secondary treatment:
More stringent treatment :
N removal: Not provided
P removal:
UV:
Chlorination:
Ozonation:
Sand filtration:
Micro filtration:
Other treatment:
Waste Water Network Connexions
Linked agglomeration(s):
Cork city
Linked discharge point(s):
Cork City Waste Water Treatment Plant
Linked receiving area(s):
Lee Estuary / Lough Mahon
Reporting file XML
Year of data: 2012
Source of data: See sourcefile
Other year :
Year of data: 2010
Source of data: file See sourcefile
Forward looking aspect
Identified reason(s) for non compliance:
Did not meet the quality standard for N in 2012 (Art 5.3). More stringent treatment for N removal not provided (Art 5.2).
Measure(s) to reach the compliance needed for UWWTP:
Provide more stringent treatment for N removal.
Date or expected start date for works:
01 March 2016
Date or expected date of completion of works:
01 March 2018
Forecast cost investment needed for the UWWTP (as in the national plan):
2100000
Name of EU fund planned to be used UWWTP (if any):
–
Any relevant comment on UWWTP:
–
Load entering the UWWTP at the expected date of compliance (as planned):
284696
Organic design capacity UWWTP (as planned):
413000
Type of treatment UWWTP (as planned):
3-N
Expected date of compliance (12 months of compliant samples) :
01 March 2019
Date or expected date of completion of preparatory measures (planning, design, etc):
01 September 2014
Coordinates and treatment in place
Hyperlink to Agglomeration(s), discharge point(s) and receiving areas
Information about projects to become compliant

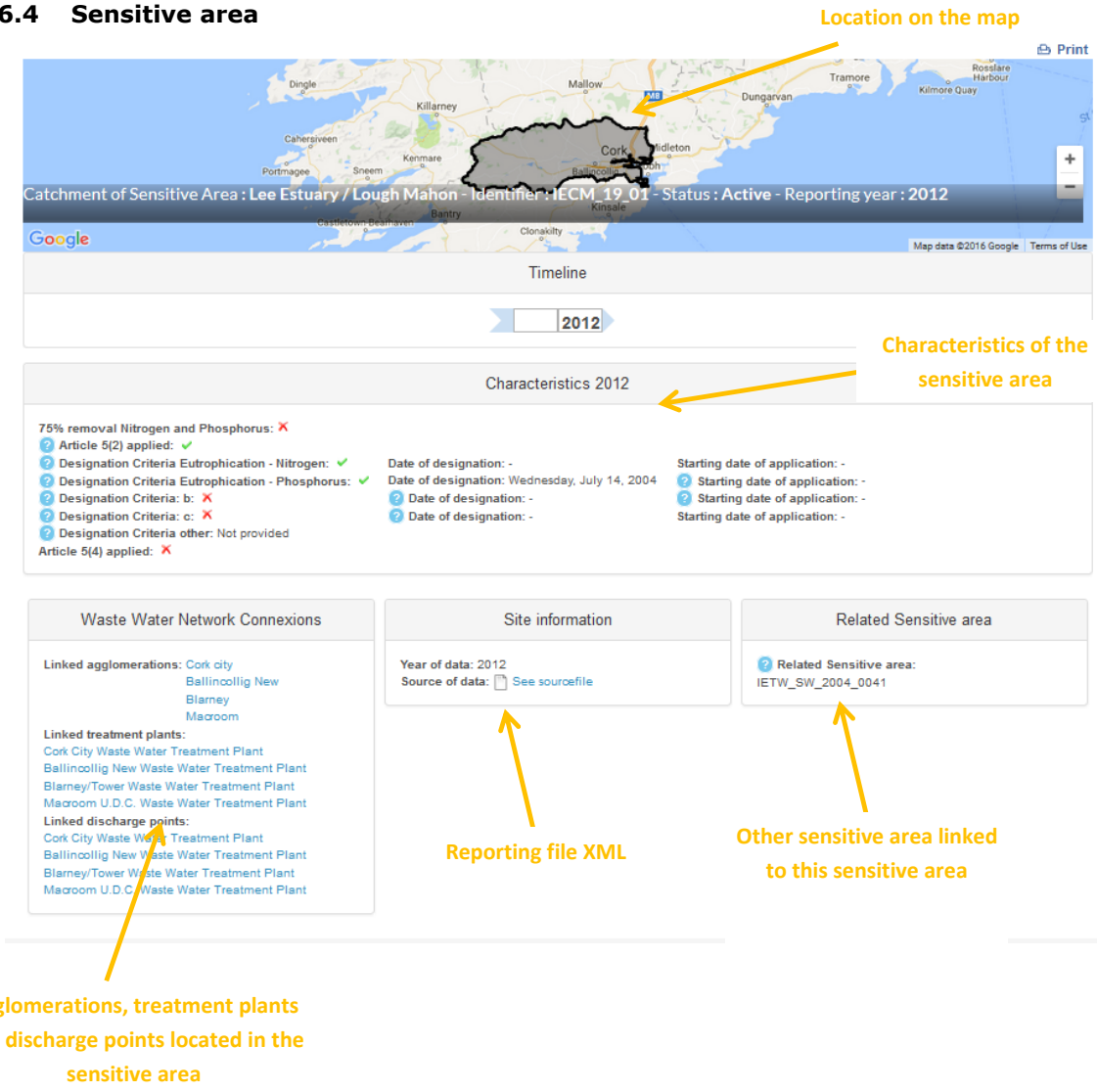
6.2.2 Historical view



6.3 Discharge point



6.4 Sensitive area

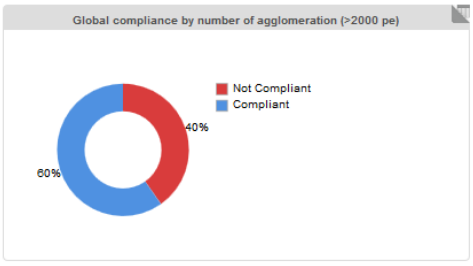


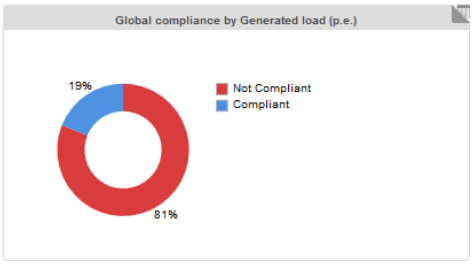
7. OTHER FUNCTIONALITIES PROVIDED

7.1 Automatic generation of Statistics

Statistics are included in the webpages related to the maps and the lists. It provided graphs and also the table that was used to create the maps when clicking on the top right of each graph.

Agglomeration compliance

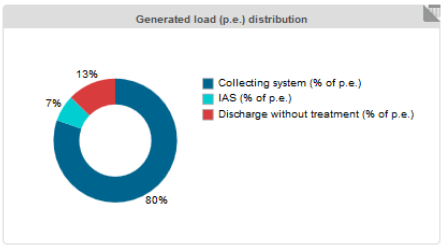




Global compliance by number of agglomeration (>2000 pe)	
68	Not Compliant
101	Compliant
169	

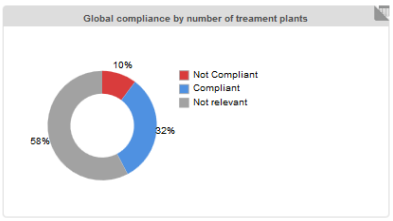
Global compliance by Generated load (p.e.)	
Generated load (p.e.)	Compliance
4 186 027 pe	Not Compliant
975 989 pe	Compliant
5 162 016	

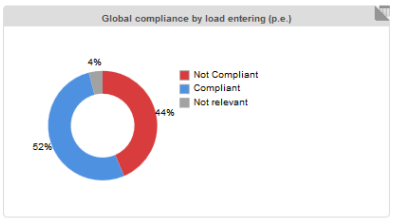
Agglomeration collection



Generated load (p.e.) distribution		
Treatment	Total in p.e.	Rate in %
Collecting system	1 174 310	80.3
IAS	101 595	6.9
Discharge without treatment	186 318	12.7
	1 462 223	100.0

Urban waste water treatment plants compliance

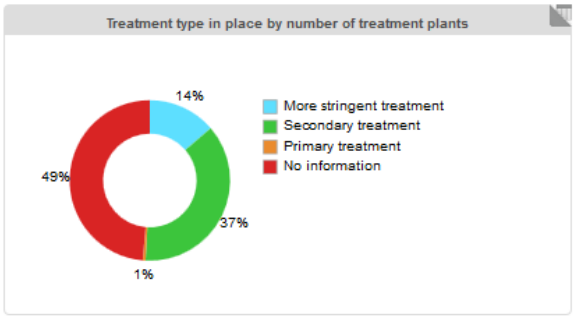


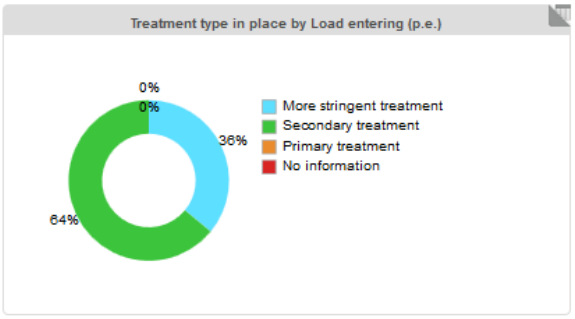


Global compliance by number of treament plants	
Number of plants	Compliance
18	Not Compliant
56	Compliant
101	Not relevant
175	

Global compliance by load entering (p.e.)	
Load entering (p.e.)	Compliance
794 390	Not Compliant
954 680	Compliant
73 868	Not relevant
1 822 938	

Urban waste water treatment plants treatment





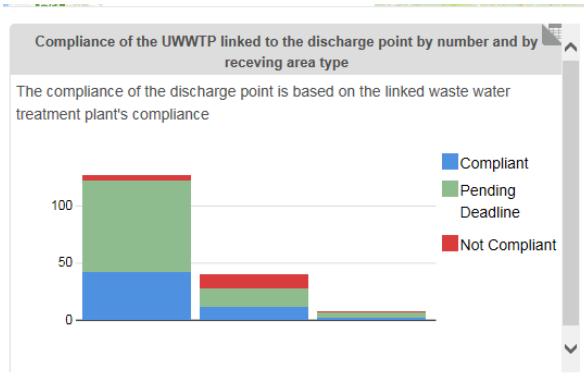
Treatment type in place by number of treatment plants

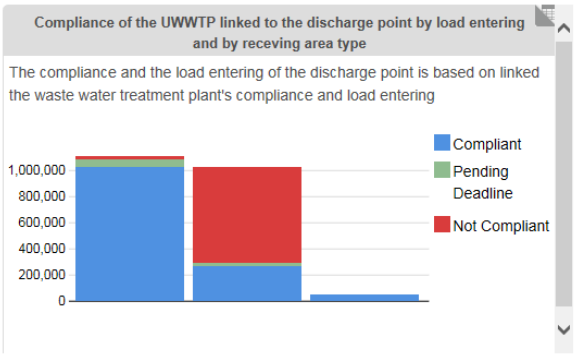
Number of plants	Treatment type in place
24	More stringent treatment
65	Secondary treatment
1	Primary treatment
85	No information
175	

Treatment type in place by Load entering (p.e.)

Load entering (p.e.)	Treatment type in place
655 987	More stringent treatment
1 166 951	Secondary treatment
0	Primary treatment
0	No information
1 822 938	

Discharge points





Compliance of the UWWTP linked to the discharge point by number and by receving area type

The compliance of the discharge point is based on the linked waste water treatment plant's compliance

Area type	Compliant	Pending Deadline	Not Compliant
Catchment of Sensitive Area	42	80	5
Sensitive Area	12	16	12
Normal Area	2	5	1
Total	56	101	18

Compliance of the UWWTP linked to the discharge point by load entering and by receving area type

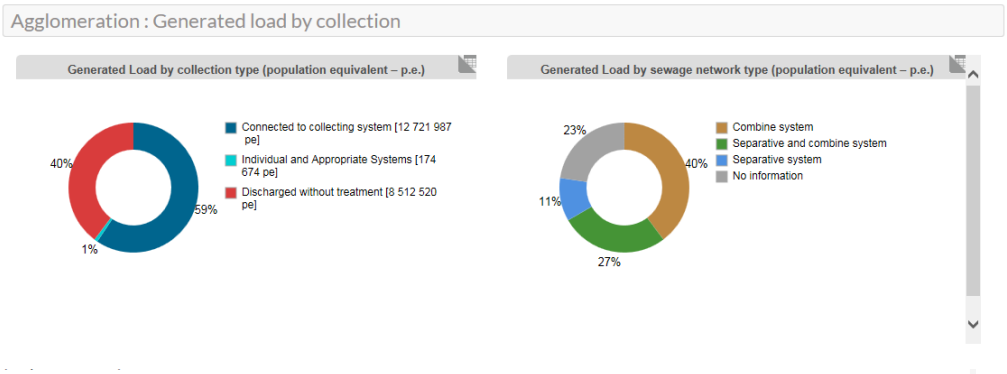
The compliance and the load entering of the discharge point is based on linked the waste water treatment plant's compliance and load entering

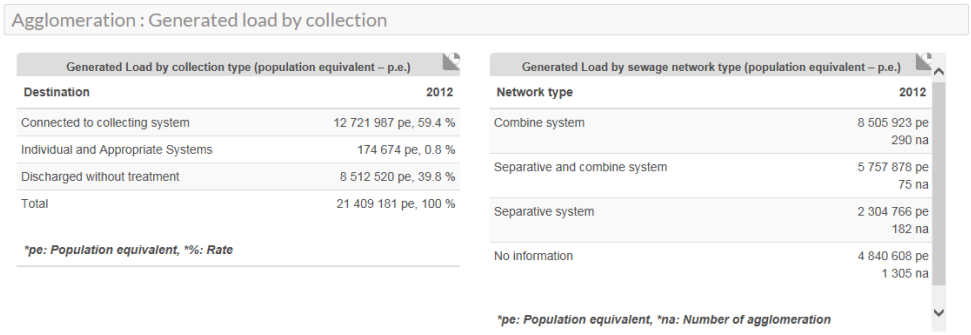
Area type	Compliant	Pending Deadline	Not Compliant
Catchment of Sensitive Area	1024170	59220	25750
Sensitive Area	269200	24700	735000
Normal Area	51333	0	0
Total	1344703	83920	760750

A specific menu is also dedicated to statistics that are automatically generated when updating a new database. It is also possible to have access to the table related to the graph by clinking of the top right of each graph.

There is first a possibility to select the reference year or all years:

Then the statistics are displayed concerning different topics





Agglomeration : Generated load by collection

Generated Load by collection type (population equivalent – p.e.)

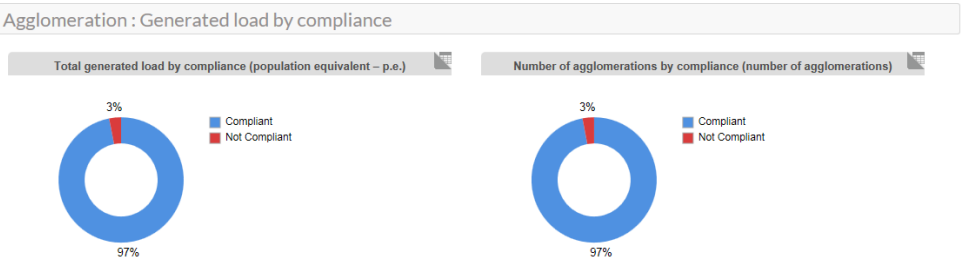
Destination	2012
Connected to collecting system	12 721 987 pe, 59.4 %
Individual and Appropriate Systems	174 674 pe, 0.8 %
Discharged without treatment	8 512 520 pe, 39.8 %
Total	21 409 181 pe, 100 %

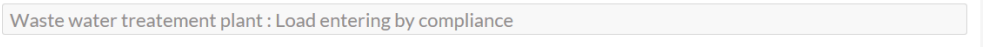
*pe: Population equivalent, *%: Rate*

Generated Load by sewage network type (population equivalent – p.e.)

Network type	2012
Combine system	8 505 923 pe 290 na
Separative and combine system	5 757 878 pe 75 na
Separative system	2 304 766 pe 182 na
No information	4 840 608 pe 1 305 na

*pe: Population equivalent, *na: Number of agglomeration*





Waste water treatement plant : Load entering by compliance

Agglomeration : Generated load by compliance

Total generated load by compliance (population equivalent – p.e.)

Compliance state	2011
Compliant	2 672 900 pe
Not Compliant	85 000 pe
Total	2 757 900 pe

pe: Population equivalent

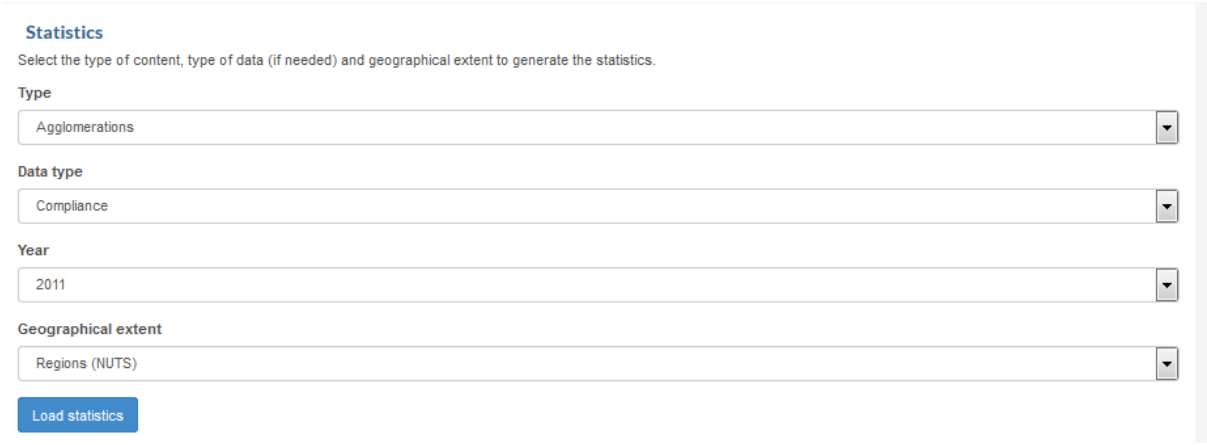
Number of agglomerations by compliance (number of agglomerations)

Compliance state	2011
Compliant	65
Not Compliant	2
Total	67

: Number of agglomerations

7.2 Creation of statistics

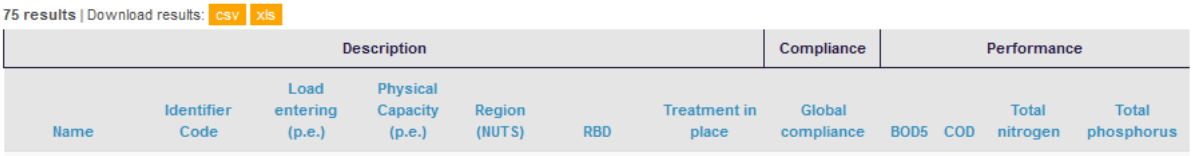
Using the create statistic menu is a way to generate statistic by year or geographical areas such as regions or river basins. It is another to use the website if a user has a specific need.



7.3 Print and download buttons

At the top of most of the webpages there is a print button that allows to print the content of the webpage that is displayed.

At the top of each list displayed (see chapter II.C) there is also a download button that allows the user to download the content of the list under CSV or .xls format.



8. A SPECIFIC CASE: THE EU WEBSITE

8.1 General structure of a webpage

Public pages of the website have the same structure divided in 4 areas: the banner, the menu, the page content and the footer.

The banner contains the website name. When the user is connected, the banner also contains links to the user account and the logout function.

The main menu contains links to the public contents. The full links list is described below and has the same structure than the Member State SIIF nodes.

The page content contains the main information of the current page. It can contain text, links, tables, charts and maps.

The footer area contains legal information as links to credits and disclaimer pages

➢ Menu structure

- Home
- View/discover
  - Sewage sludge map
  - Compliance map
  - Agglomeration size distribution map
  - EU Maps
- Download/invoke
- Statistics
- Regulations
- Resources
  - Useful links
  - About the UWWTD SIIF
  - SIIF for developers
- Contact

For pages descriptions in next section, we will only describe the main page content area since the other areas are the same on the entire website.

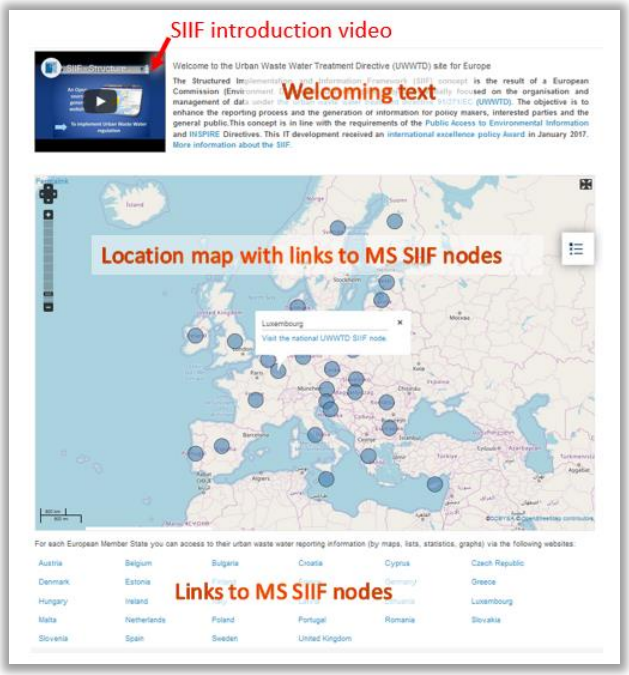
8.2 Home page

Path: https://uwwtd.eu/

Status: public

Description:

The content of the home page is divided in 3 rows:



The first row contains a Youtube video on SIIF project and a welcoming text which describes purposes and origin of the SIIF project.

The second row provides a map of the situation of the last reporting. Each blue dot gives a link to the MS SIIF node. If a dot is missing on the maps that means the non-availability of the dataset for the country.

The third row contains all links to SIIF node home page for each Member State.

8.3 View/discover pages

This menu contains three sub menu entries.

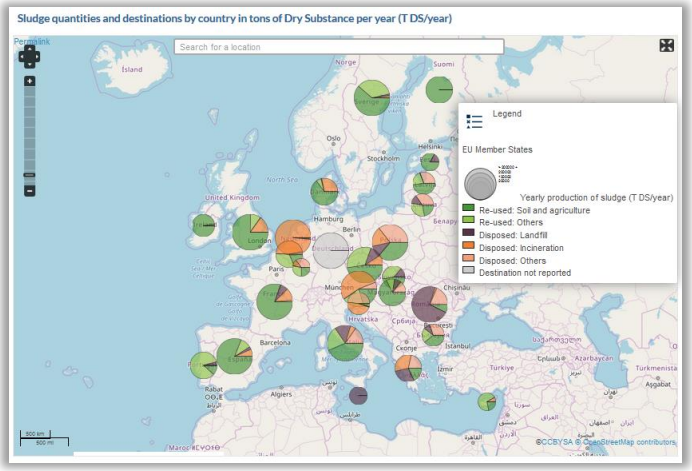
8.3.1 Sewage sludge map page

Path: https://uwwtd.eu/content/sewage-sludge-map

Status: public

Description:

The "Sewage sludge map" page shows "sludge quantities and destinations by country in tons of Dry Substance per year (T DS/year)" for the last UWWTD report. The size of the pie chart is proportional to the yearly production of sludge. Each slice of the pie chart is related to quantity of sludge by destination. Values of each class can be viewed by a click on a pie chart.



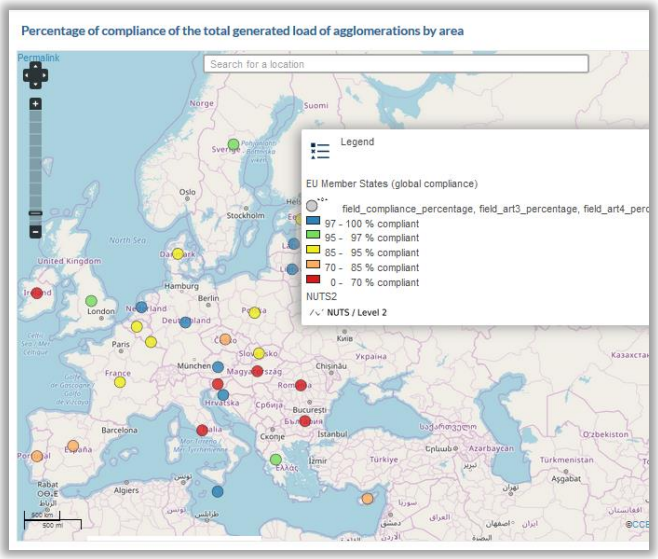
8.3.2 Compliance map page

Path: https://uwwtd.eu/content/compliance-map

Status: public

Description:

The "Compliance map" page shows "Percentage of compliance of the total generated load of agglomerations by area" for the last UWWTD report.



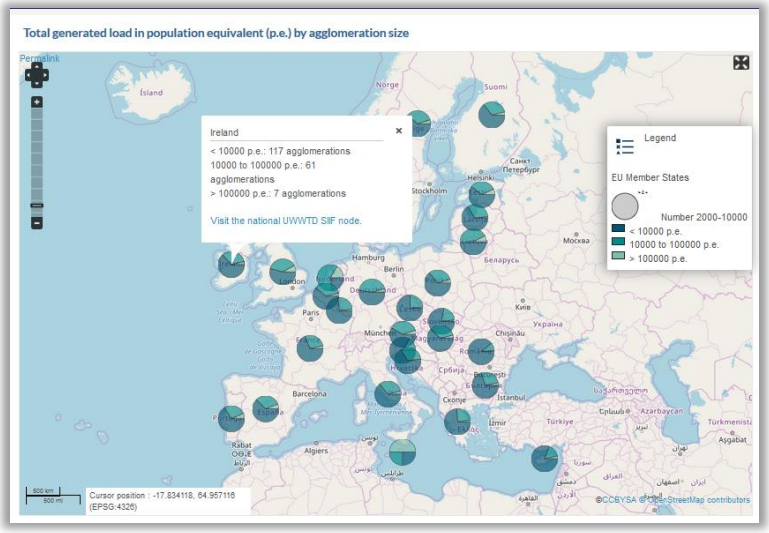
8.3.3 Agglomeration size distribution map page

Path: https://uwwtd.eu/content/agglomeration-size-distribution-map

Status: public

Description:

The "Agglomeration size distribution map" page shows the "Total generated load in population equivalent (p.e.) by agglomeration size" for the last UWWTD report



8.3.4 EU Maps page

Path: https://uwwtd.eu/map/europe-list

Status: public

Description:

The "EU Maps" page contains a set of 20 static maps (images) divided in 7 categories. The list of available maps is:

- **Compliance at MS level**
- Degree of compliance at MS level for 10th report (2016)
- Degree of compliance with Article 3 at MS level for 10th report (2016)
- Degree of compliance with Article 4 at MS level for 10th report (2016)
- Degree of compliance with Article 5 at MS level for 10th report (2016)

- **Compliance at Nuts 2 level**
- Degree of compliance at Nuts 2 level for 10th report (2016)
- Degree of compliance with Article 3 at Nuts 2 level for 10th report (2016)
- Degree of compliance with Article 4 at Nuts 2 level for 10th report (2016)
- Degree of compliance with Article 5 at Nuts 2 level for 10th report (2016)

- **Compliance at RBD level**
- Degree of compliance at RBD level for 10th report (2016)
- Degree of compliance with Article 3 at RBD level for 10th report (2016)
- Degree of compliance with Article 4 at RBD level for 10th report (2016)
- Degree of compliance with Article 5 at RBD level for 10th report (2016)

- **Distance to target at MS level**
- Degree of distance to target with Article 3 at MS level for 10th report (2016)
- Degree of distance to target with Article 4 at MS level for 10th report (2016)
- Degree of distance to target with Article 5 at MS level for 10th report (2016)

- **Distance to target at Nuts 2 level**

- Degree of distance to target with Article 3 at Nuts 2 level for 10th report (2016)
- Degree of distance to target with Article 4 at Nuts 2 level for 10th report (2016)
- Degree of distance to target with Article 5 at Nuts 2 level for 10th report (2016)

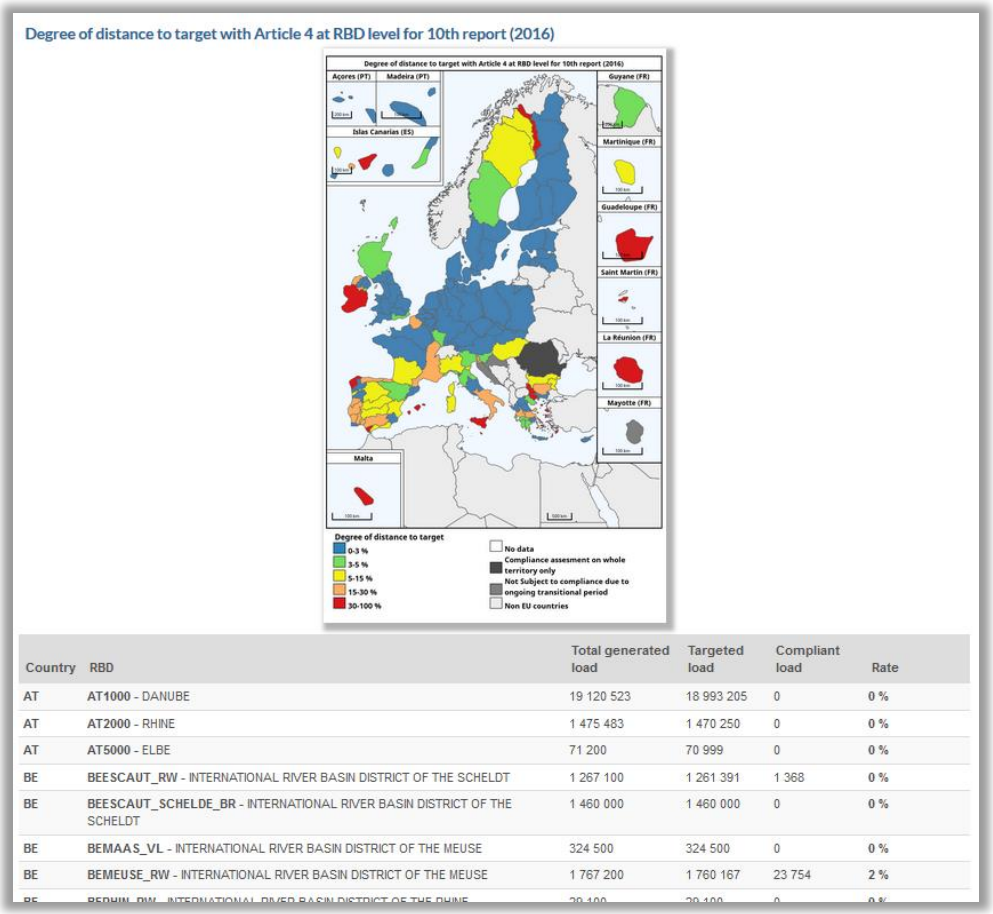
➢ **Distance to target at RBD level**

- Degree of distance to target with Article 3 at RBD level for 10th report (2016)
- Degree of distance to target with Article 4 at RBD level for 10th report (2016)
- Degree of distance to target with Article 5 at RBD level for 10th report (2016)

➢ **Sensitive Area**

- Overview of designated Sensitive Areas, Catchment of Sensitive Areas and the application of Article 5(8) UWWTD in European Union

For each map a thumbnail and the title is given. On click on the title or on the thumbnail, the user is redirected on a webpage with the image in better resolution (usable in a report) and the data table.



Country	RBD	Total generated load	Targeted load	Compliant load	Rate
AT	AT1000 - DANUBE	19 120 523	18 993 205	0	0 %
AT	AT2000 - RHINE	1 475 483	1 470 250	0	0 %
AT	AT5000 - ELBE	71 200	70 999	0	0 %
BE	BEESCAUT_RW - INTERNATIONAL RIVER BASIN DISTRICT OF THE SCHELDT	1 267 100	1 261 391	1 368	0 %
BE	BEESCAUT_SCHELDE_BR - INTERNATIONAL RIVER BASIN DISTRICT OF THE SCHELDT	1 460 000	1 460 000	0	0 %
BE	BEMAAS_VL - INTERNATIONAL RIVER BASIN DISTRICT OF THE MEUSE	324 500	324 500	0	0 %
BE	BEMEUSE_RW - INTERNATIONAL RIVER BASIN DISTRICT OF THE MEUSE	1 767 200	1 760 167	23 754	2 %

8.4 Download/invoke page

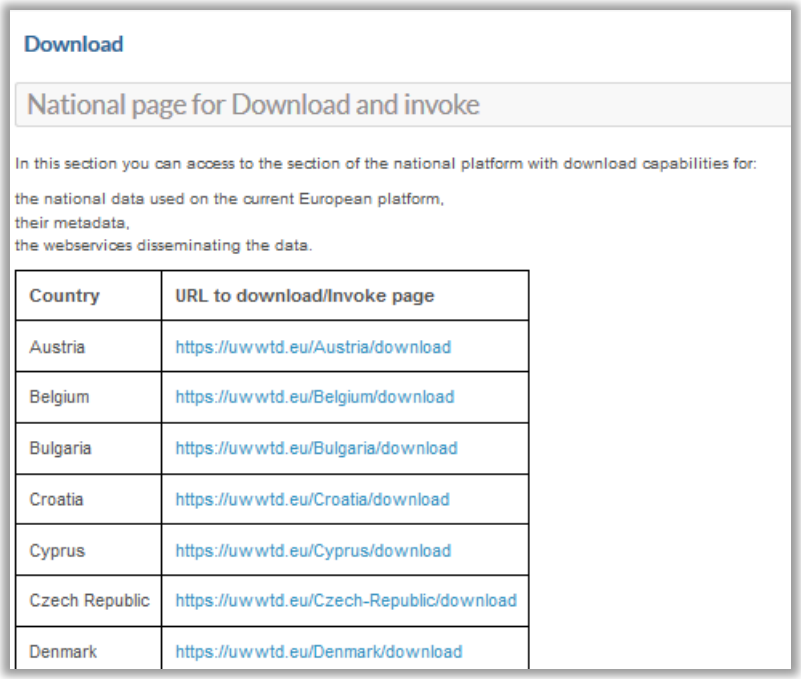
Path: https://uwwtd.eu/content/download

Status: public

Description:

The download invoke page shows the list of the "MS download/invoke" page for each Member State SIIF node.

The MS download/invoke pages give access to the data used in this website, the metadata and the Inspire services.
On these pages, data related to the urban waste water objects can be downloaded under different formats (xml, csv, shp and Kml)



Download

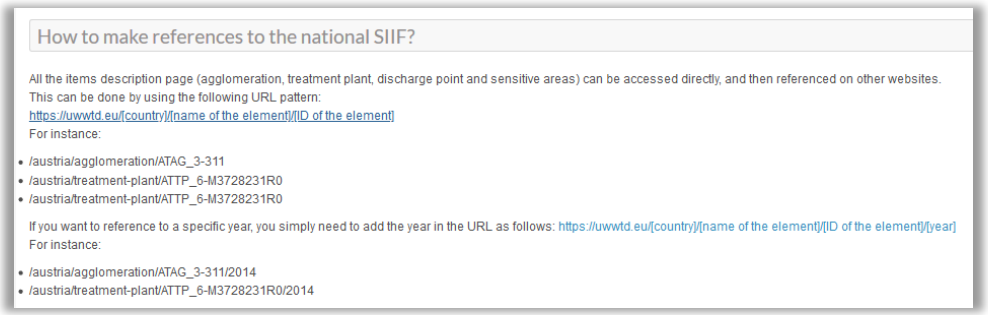
National page for Download and invoke

In this section you can access to the section of the national platform with download capabilities for:

the national data used on the current European platform,
their metadata,
the webservices disseminating the data.

Country	URL to download/Invoke page
Austria	https://uwwtd.eu/Austria/download
Belgium	https://uwwtd.eu/Belgium/download
Bulgaria	https://uwwtd.eu/Bulgaria/download
Croatia	https://uwwtd.eu/Croatia/download
Cyprus	https://uwwtd.eu/Cyprus/download
Czech Republic	https://uwwtd.eu/Czech-Republic/download
Denmark	https://uwwtd.eu/Denmark/download

This page gives also explanation how to link other websites to this website. Each object in the website is referenced by an hyperlink that contains the ID code of the object and the same root before. When knowing this ID code it is very easy to generate hyperlink to this website and the specific object.



How to make references to the national SIIF?

All the items description page (agglomeration, treatment plant, discharge point and sensitive areas) can be accessed directly, and then referenced on other websites.
This can be done by using the following URL pattern:
https://uwwtd.eu/[country]/[name of the element]/[ID of the element]
For instance:

- /austria/agglomeration/ATAG_3-311
- /austria/treatment-plant/ATTP_6-M3728231R0
- /austria/treatment-plant/ATTP_6-M3728231R0

If you want to reference to a specific year, you simply need to add the year in the URL as follows: https://uwwtd.eu/[country]/[name of the element]/[ID of the element]/[year]
For instance:

- /austria/agglomeration/ATAG_3-311/2014
- /austria/treatment-plant/ATTP_6-M3728231R0/2014

8.5 Statistics page

Path: https://uwwtd.eu/stats/graphs

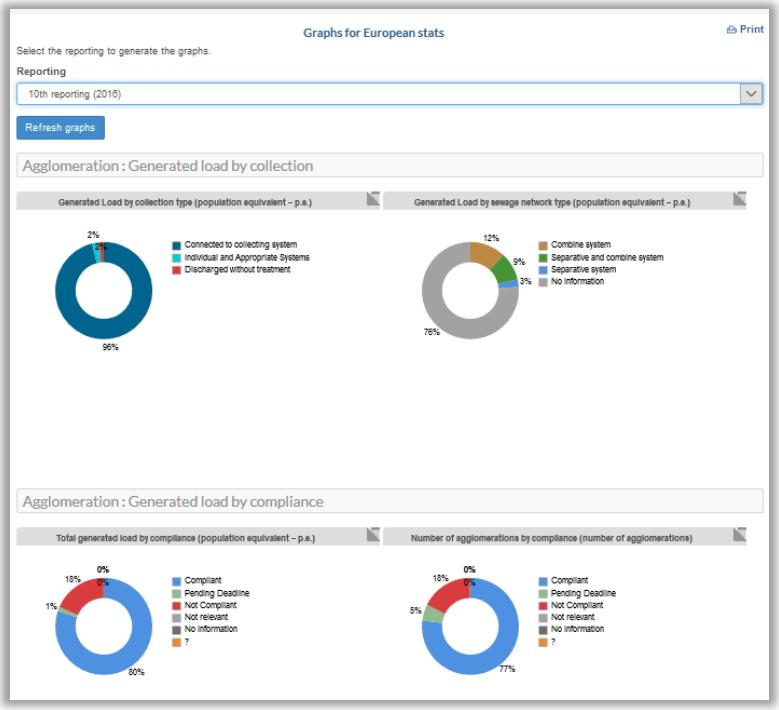
Status: public

Description:

The "Statistics page" show various charts and data tables (with flip cards) aggregated at EU level by Member State and by year. Available indicators and charts are:

- Agglomeration: Generated load by collection
  - Generated Load by collection type
  - Generated Load by sewage network type
- Agglomeration: Generated load by compliance
  - Total generated load by compliance
  - Number of agglomerations by compliance

- Agglomeration: generated load by agglomeration size
  - Total generated load by agglomeration size
  - Number of agglomeration by size
- MS level: Compliance with Article 3
- MS level: Compliance with Article 4
- MS level: Compliance with Article 5
- MS level: Evolution of the load destination
- MS level: Sewage Sludge production and destination
- Current yearly investment per Member States in €/inhabitant (new and renewal)
- Expected yearly investment per Member States in €/inhabitant (new and renewal)



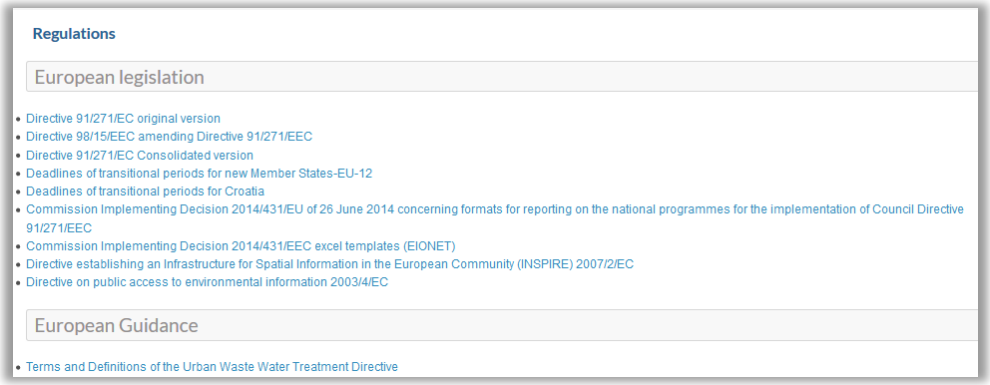
8.6 Regulations page

Path: https://uwwtd.eu/content/regulations-0

Status: public

Description:

The "Regulation" page shows the list of applicable texts from "European legislation" and "European Guidance".



8.7 Resources pages

The "Resources" menu includes three sub-menus: one that provides links to information related to this policy, one that explains the concept behind the website and the last one that explains how to install the website on a national server.

8.7.1 Useful links page

Path: https://uwwtd.eu/content/useful-links-0

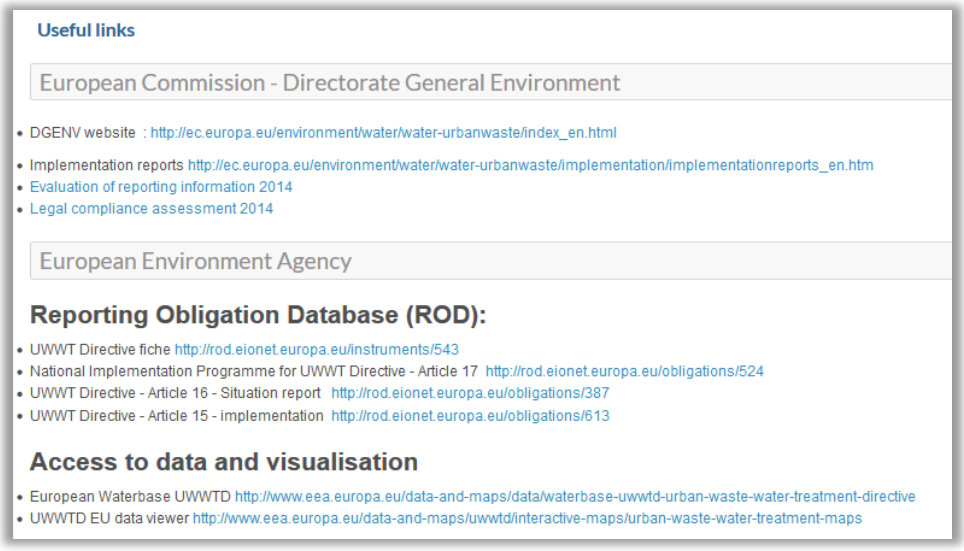
Status: public

Description:

As regards the "Useful links" sub-menu it is where you can find hyperlinks to:

- the DG Environment website pages on urban waste water policy and specifically where the European urban waste water Directive reports are located.
- the European Environmental Agency and specifically how the reporting is organised with access to the data model and guidance and how it is displayed at this level (database and data viewer).
- It provides also information on the way to use European funds and loans in order to finance the urban waste water infrastructure.
- It gives access to the other existing SIIF platforms and national websites concerning urban waste water.
- And finally there is also the possibility to have access to other websites related to good practices.

The overall objectives is to facilitate the reporting process and to ease the access to the available information in order to implement better the Directive.



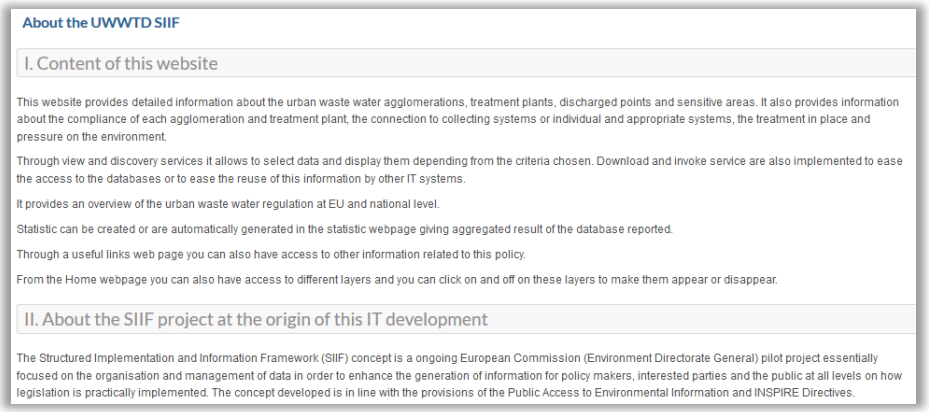
8.7.2 About the UWWTD SIIF page

Path: https://uwwtd.eu/content/about-uwwtd-siif

Status: public

Description:

The "about" page gives detailed information on the SIIF project.



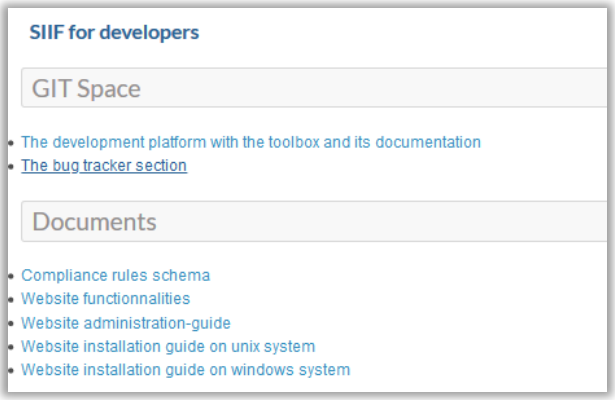
8.7.3 SIIF for developers page

Path: https://uwwtd.eu/content/siif-developers

Status: public

Description:

The "SIIF for developers" page gives some links to developers on where to find sources, project documentation (guidance, installation guides, user manual, administration guides…) or report bugs or issues.



8.8 Contact page

Path: https://uwwtd.eu/contact

Status: public

Description:

The "Contact" page allows users to raise questions to the webmaster. Information's collected with this form are treated following the GDPR rules.


Your name *
Your e-mail address *
Subject *
Message *
Send message