Utility IMS

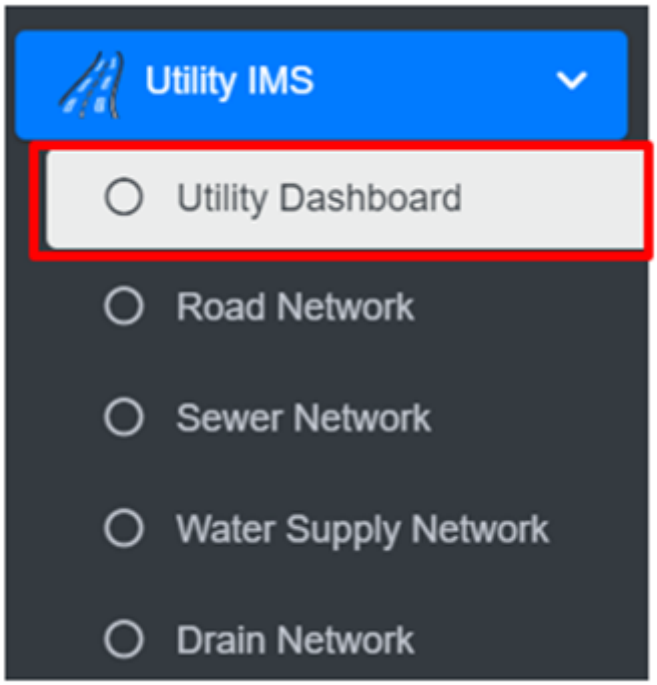
UIMS, a core module of the **IMIS**, is designed to manage detailed spatial and attribute data for municipal utilities such as roads, stormwater drains, water supply networks, and sewer systems. UIMS plays a critical role in achieving **CWIS** by enabling municipalities to monitor sanitation infrastructure, identify service gaps, and ensure equitable access to sanitation services, particularly for low-income community (LIC) areas. Through its integration with the **BIMS**, UIMS provides granular insights into utility connectivity for each building, including sewer and drainage links, and water supply access. This integration helps municipalities target underserved areas, plan infrastructure expansions, and prioritize investments in sanitation services.

A key feature of UIMS is its interactive dashboard, which delivers real-time visualizations on sanitation-related utilities. The system empowers municipalities to monitor sanitation coverage trends, identify gaps, and make data-driven decisions to address inequities in service delivery. UIMS also includes advanced map-based input tools integrated with the **UMDSS**, allowing municipalities to add or update utility infrastructure directly within the platform. Currently this tool is available for creating and updating roads only. In the case of other utilities, they need to be digitized and merged with existing data and import in corresponding utilities database of IMIS with the help of skilled GIS people. In the case of attribute data, they can be updated for all kinds of utilities directly from the user interface. UMDSS has provided tools to export data in flexible formats, such as CSV, SHP, and KML ensuring seamless sharing and integration with other municipal services.

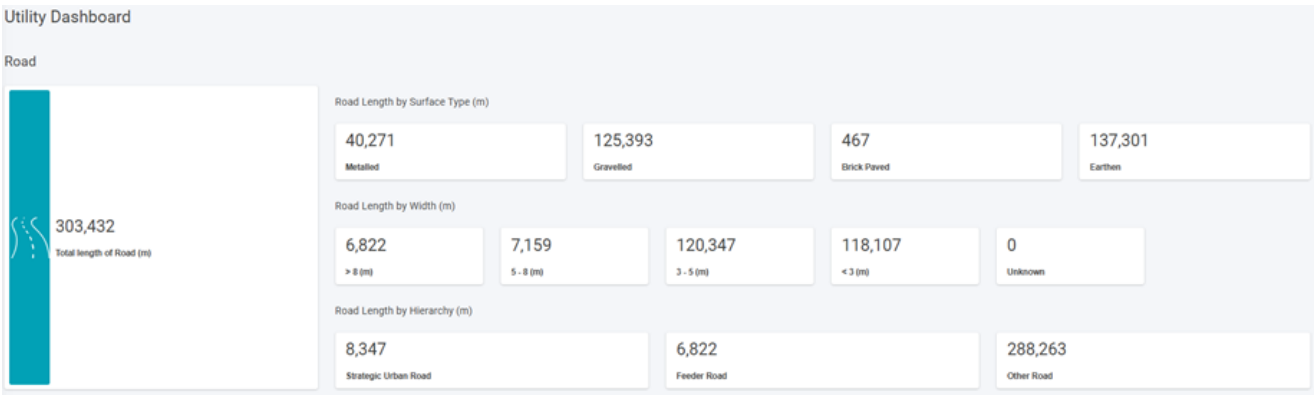
14.1 Utility IMS

14.1.1 Navigation to Utility Dashboard

- Open the sidebar and click on '***Utility IMS'*** to expand.
- Select the ***Utility Dashboard.***



- The ***Utility Dashboard*** provides a synopsis of the information maintained in this module.



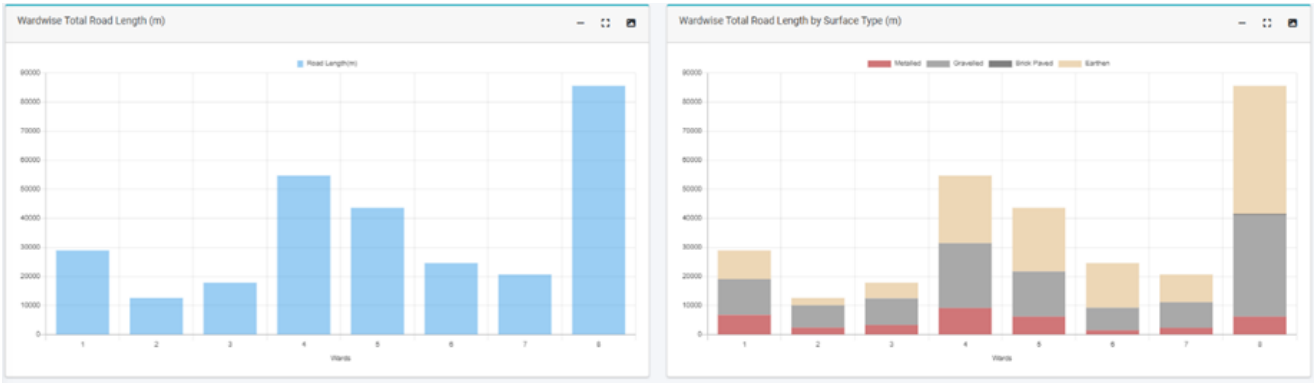


Figure 14- 1 Utility Dashboard

The dashboard typically displays a visual representation of data using graphs, pie charts, etc.

In the ***Utility Dashboard***, bar charts are used to visually present various utility-related information.

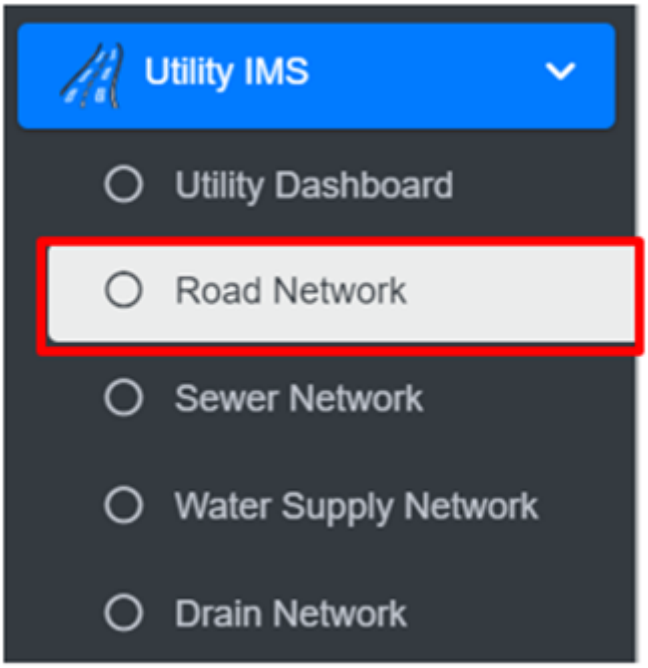
- Road Network: length, surface types, hierarchy, and length by width
- Sewer Network: length and length by diameter
- Drain Network: length types, length by type, length by diameter.
- Water Supply Network: length and length by diameter

14.2 Road Network

The Road Network Sub-Module maintains the information regarding the road networks of the city. The road network database maintains information on various attributes that define different aspects of a road such as a road code, surface type, and hierarchy.

14.2.1 Navigation to the Road Network

- Open the sidebar and click on '***Utility IMS'*** to expand.
- Select the **Road Network.**



- This redirects to the Road Network page.

Overview:

The Road Network Page lists all the attribute records stored in the module and provides different Filters, Actions and Tools that can be used according to the requirements. For more details (refer to section 5 Filters, section 6 Actions and section 8 Tools).

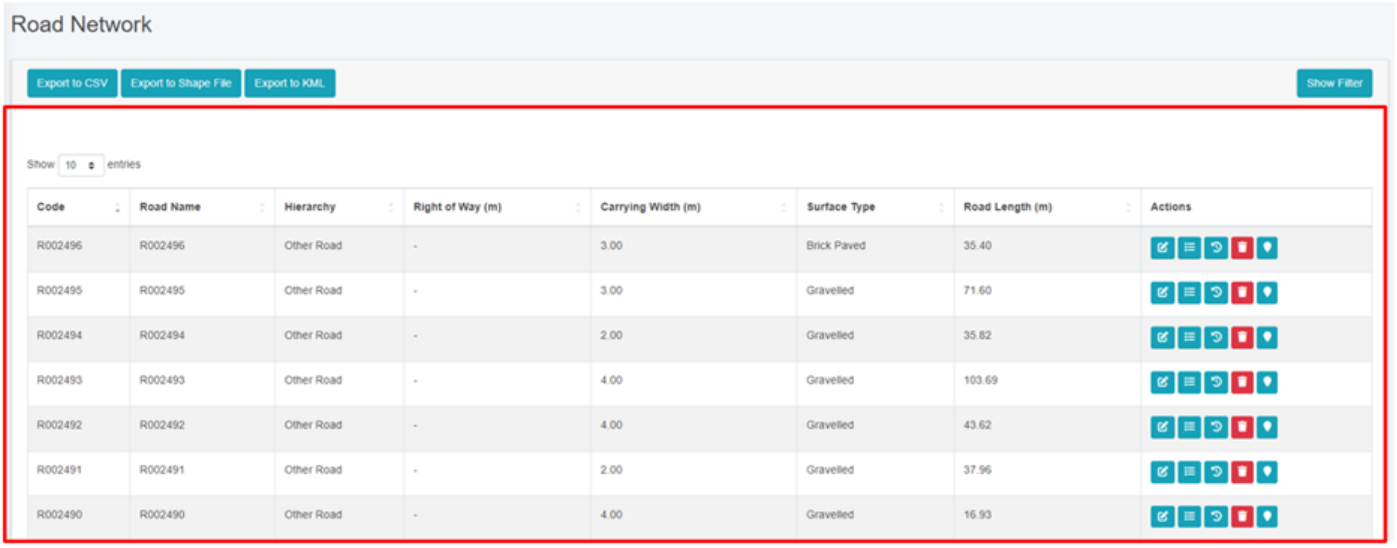


Figure 14- 2 List of Road Network

14.2.2 Add roads

- To add roads, go to the Map page.
- Click on the ***add road*** button, this will turn on sub-tool features to add the road line and its other related information.

Figure 14- 3 Map Tools

- To add a new road, the user need to locate the tentative location of the starting point and ending point of a new road constructed through the map feature interface.

Figure 14- 4 Locating the new road section

- Once the new road section has been identified, the user must tentatively outline the new road on the map interface by creating a set of points.

Figure 14- 5 Add new road section

- If the user is not satisfied with the drawn road line on the map, they can undo, redo, or remove it by clicking the corresponding button.

Figure 14- 6 Undo, Redo and Remove

- Upon generating an acceptable outline of the new road, the user must enter the information of the new road and save the information.

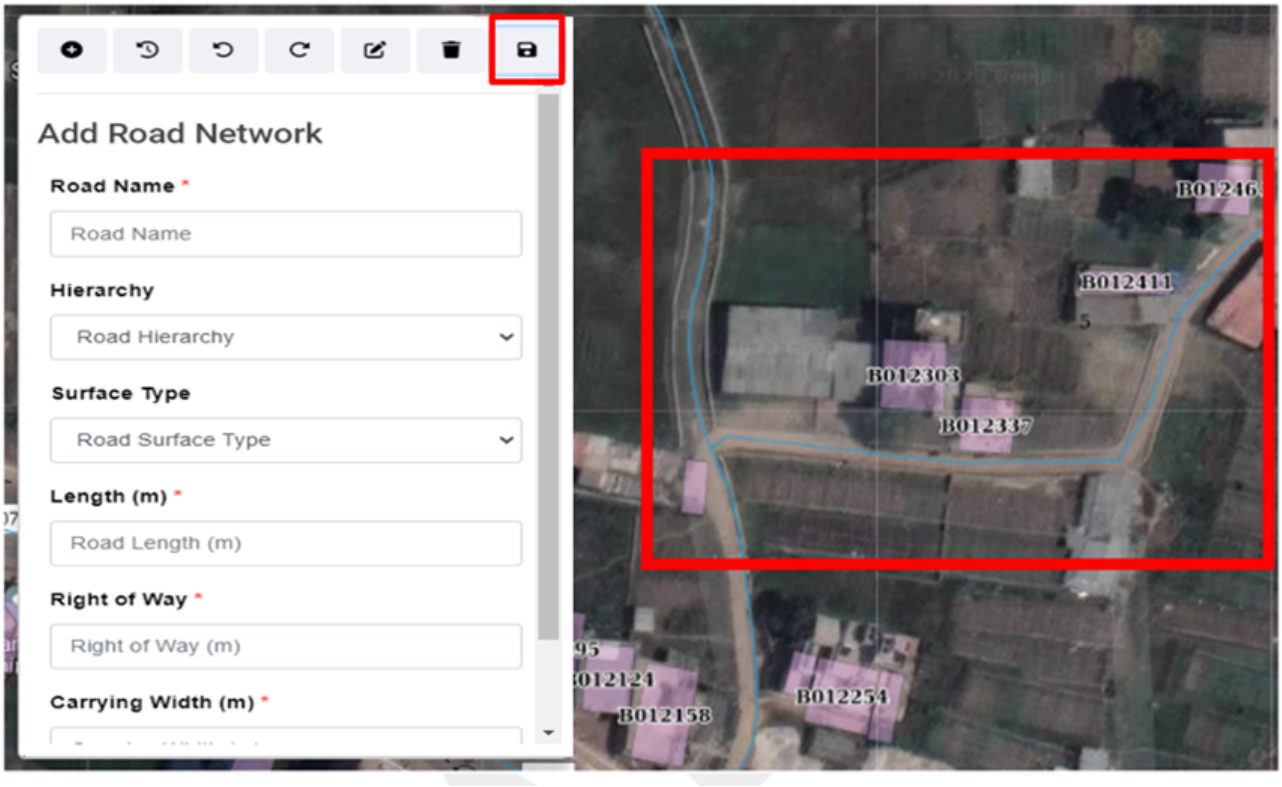
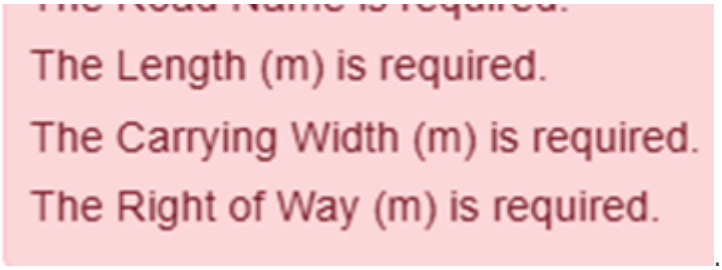


Figure 14- 7 Attribute Information of new road section

Add Road Form

- Road Name: The name of the road.
- Road Hierarchy: The hierarchy of the road from the dropdown.
- Road Surface Type: The surface type of the road from the dropdown.
- Road Length (m): The length of the added road.
- Right of Way: The width of the road designated for vehicles and pedestrians, Right of Way value must be greater than or equal to the carrying width of the road.
- Carrying Width of the Road (m): The area designated for vehicle movement, excluding non-traffic zones.
- To save a road line drawing, users must complete required fields marked with red asterisks. Submitting without completing these fields will result in an error message:



14.2.3 Edit Road

- In addition to updating new road lines, the tool offers the capability to extend or modify existing road lines directly through the map interface, providing users with a means to update road information as urban infrastructure evolves.

Figure 14- 8 Spatial information of new road section

- To extend an existing road or change its route, users can activate the edit feature.
- First, select the desired road from the map interface, which is highlighted for easy identification (refer to Figure 14- 8).
- Next, select a point along the road line that requires modification and dragging or moving the point to adjust its position as needed.
- This process enables precise edits to the road line's shape when necessary. Moreover, users can easily extend the road line by selecting the endpoint of the road and dragging it to reflect the actual road extension. This functionality allows users to accurately update and extend road networks directly through the map interface.

Figure 14- 9 Updated Road line

Note:

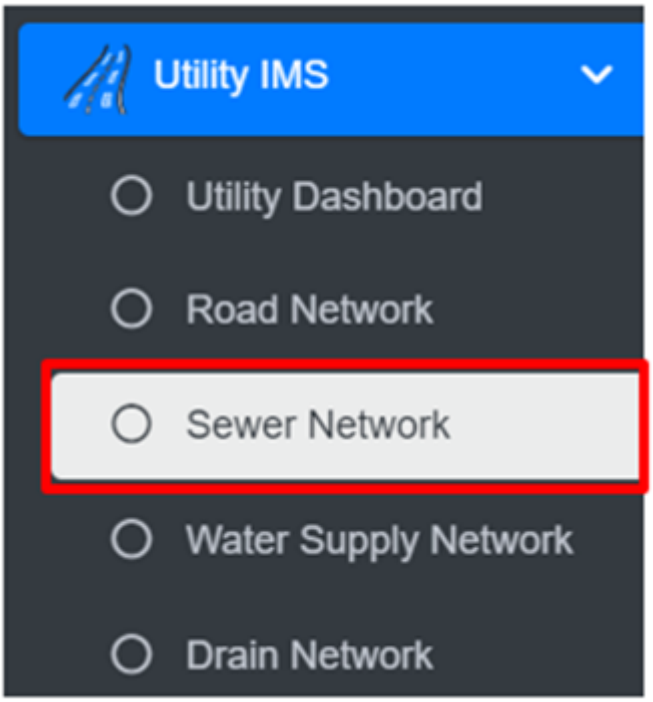
- Deletion of road data is not permitted when it is associated with building data.
- Deletion of road data is not permitted when it is associated with sewer data.
- Deletion of road data is not permitted when it is associated with water supply data.
- Deletion of road data is not permitted when it is associated with drain data.

14.3 Sewer Network

14.3 Sewer Network
The Sewer Network Sub-Module maintains the information regarding the sewer networks of the city.

14.3.1 Navigation to Sewer Network

- Open the sidebar and click on ‘Utility IMS’ to expand.
- Select the Sewer Network



- This redirect to Sewer Network

Overview:

The Sewer Network Page lists all the attribute records stored in the module and provides different Filters, Actions and Tools that can be used according to the requirements. The For more details (refer to section 5 Filters, section 6 Actions and section 8 Tools).

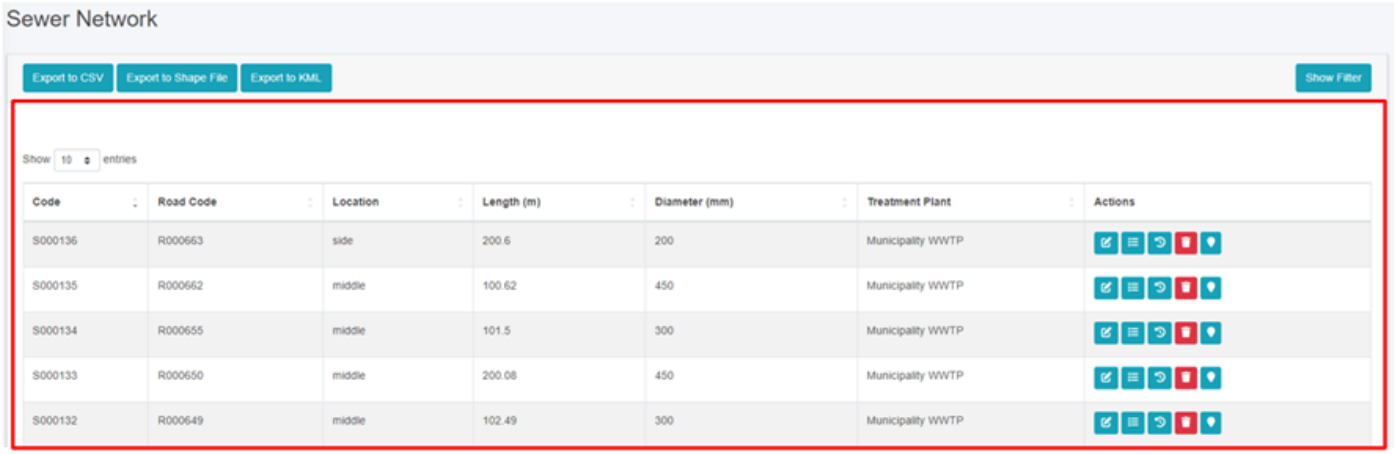


Figure 14- 10 List of Sewer Network

- The location should be:
    - Middle – if the sewer network is in the middle of the road,
    - Side - if the sewer network is on either the right or left side of the road

Note:

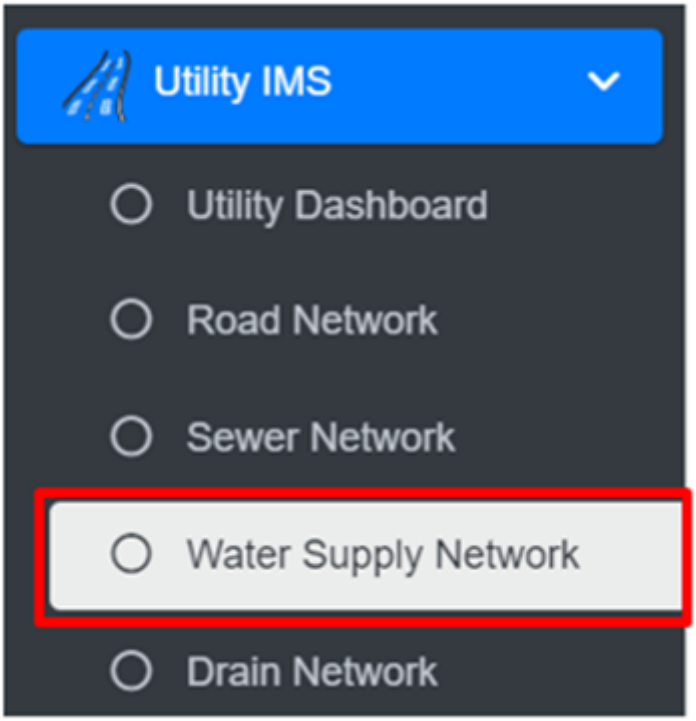
- Deletion of sewer data is not permitted when it is associated with building data.
- Deletion of sewer data is not permitted when it is associated with sewer connection.

14.4 Water Supply Network

The ***Water Supply Network*** Sub-Module maintains the information regarding the water supply networks of the city.

14.4.1 Navigate to the Water Supply Network

- Open the sidebar and click on ‘Utility IMS’ to expand.
- Select the Water Supply Network



Overview:

The Water Supply Network Page lists all the records stored in the module and provides different Filters, Actions and Tools that can be used according to the requirements. For more details (refer to section 5 Filters, section 6 Actions and section 8 Tools).

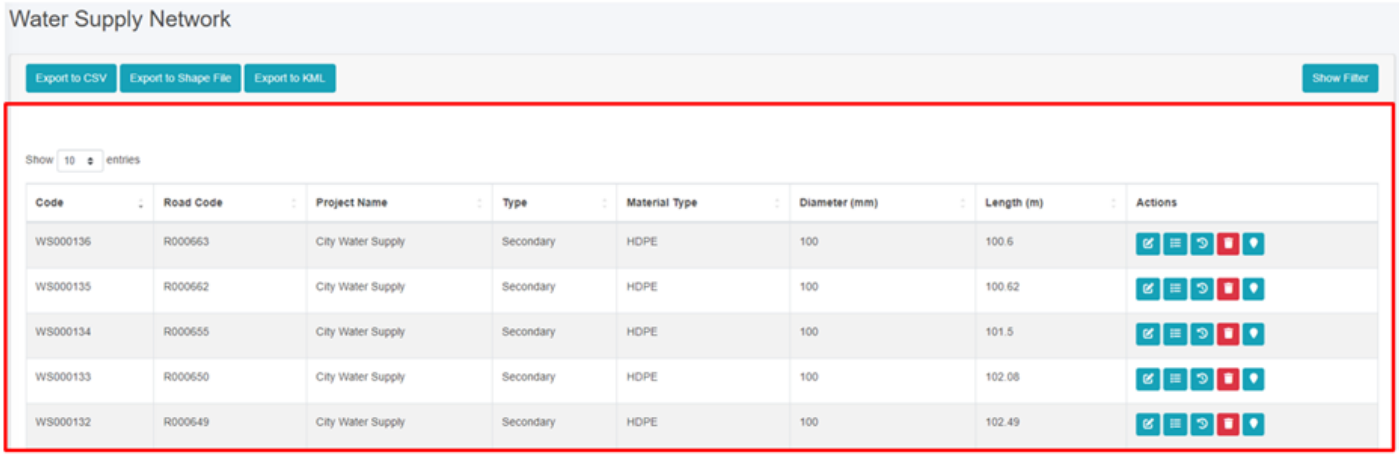


Figure 14- 11 List of Water Supply Network

Note:

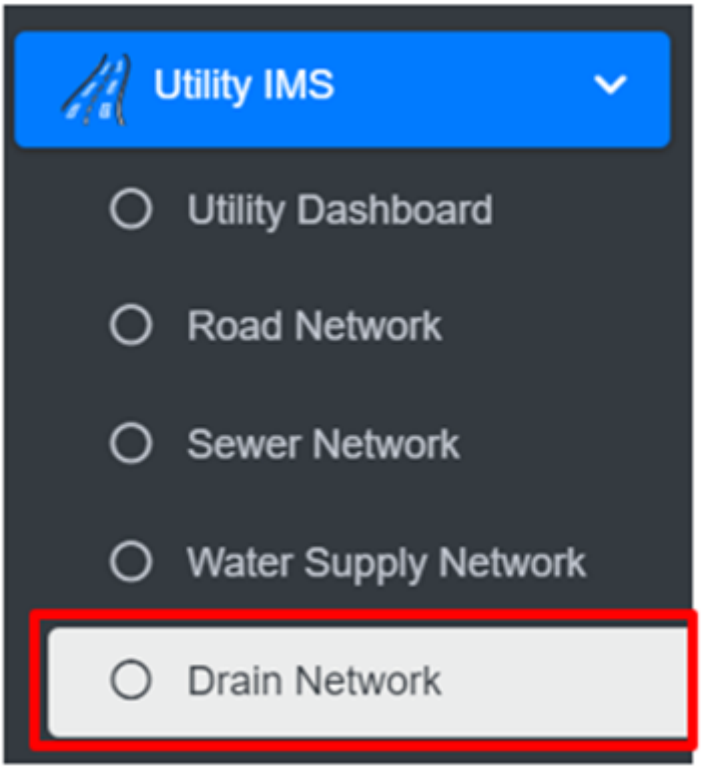
- Deletion of water supply data is not permitted when it is associated with building data.

14.5 Drain Network

The **Drain Network** Sub-Module maintains the information regarding the Drain networks of the city.

14.5.1 Navigate to Drain Network

- Open the sidebar and click on '***Utility IMS'*** to expand.
- Select the ***Drain Network***



- This redirect to ***Drain Network***

Overview:

The Drain Network Page lists all the records stored in the module and provides different Filters, Actions and Tools that can be used according to the requirements. For more details (refer to section 5 Filters, section 6 Actions and section 8 Tools).

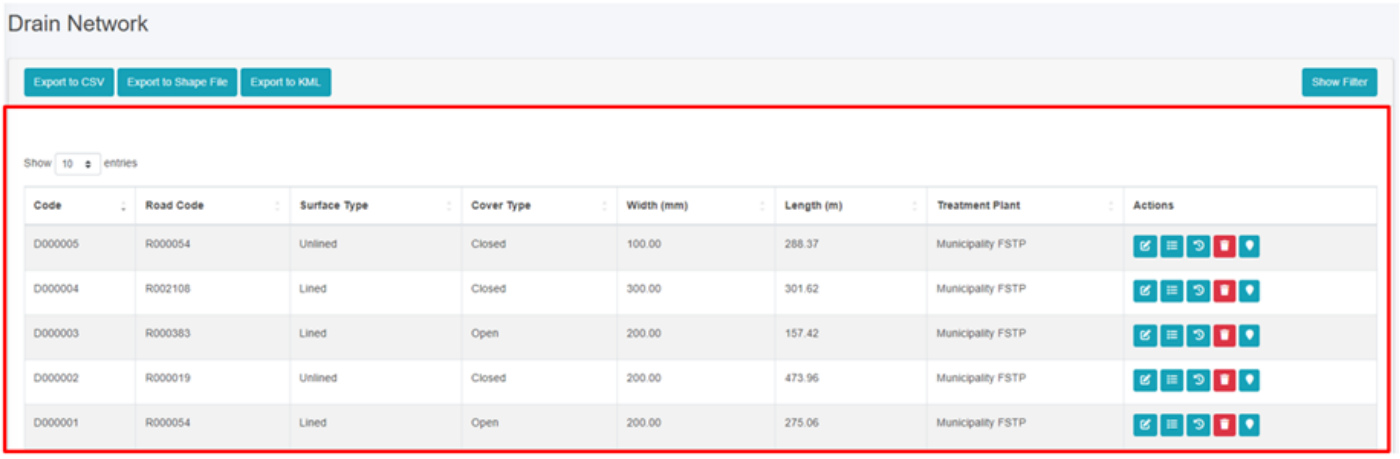


Figure 14- 12 List of Drain Network

Note:

- Deletion of drain data is not permitted when it is associated with building data.