SOP Chapter 1: Editing Practices

Introduction
This document outlines standard operating procedures for editing stormwater features.

Target Audience
The target audience for this document includes GIS editors.
- Desktop Editors
- Field Mappers
- GIS Analysts

General Editing Considerations
Current Status—Delete vs. Retire
Most users should not delete features. Deleting features can remove the link between an active work order in an asset management system (e.g. Roads’ Cityworks), or some other dependency. Features should only be deleted when there is a data entry error. Deletions should only be made by designated editors in the office.

Instead of deleting features, editors should change the CurrentStatus field from “Active” to “Retire” or “Delete.” “Retire” is appropriate for a feature that no longer exists or a Link point that no longer meets the definition of any of the Link types. “Retire” will remove the asset from display in mapping applications, but keep the asset in the database. As mentioned above, a deletion is made only when there are data entry errors. Changing the CurrentStatus to “Delete” will trigger a response from the automated QA/QC process and remove the record from the database.

Current Status Attribute Detail Table

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
<th>Visible to Users</th>
<th>Deletes Row</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>The asset exists and is considered to be a functioning MS4 asset</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Retired</td>
<td>The asset does no longer exists and it is not able to be determined if it was removed</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Removed</td>
<td>Is used when the asset was known to exist and the removal was verified.</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Data Entry Error</td>
<td>The asset entered was a data entry error and the asset has not yet had an AssetID value assigned. Used only when the editor makes a mistake.</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Bond</td>
<td>The asset is still currently under maintenance defect bond.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Abandoned</td>
<td>The asset still exists but is no longer functioning and has been abandoned in place</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>Pending</td>
<td>This would only be used for assets mapped using design plans that have not yet been accepted and verified.</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Retiring vs. Moving
Some features previously mapped do not line up with the 2012 Natural Color Orthophotos (aerial images). Whenever you observe a feature mapped in a location inconsistent with the Orthophotos, consider the following:

- Mapped assets should be shown on the correct side of the street.
- King County owned mapped assets should be within the King County property boundary or drainage easement.
- Links and the associated stormwater asset they are snapped to should be within a meter of their real-world position.
- Data must be useful for functional operations. Field personnel should be able to locate the feature for inspection and maintenance.

Given these business requirements, it is recommended to move all features that are mapped farther than 10 feet from their position on the 2012 aerial image. Link features and their associated conveyances that are more than 3 feet off should be moved as well. Drainage features showing a clear, consistent shift of the data from their location on the 2012 aerial image should also be moved.

**Snapping**
When water flows from one stormwater infrastructure feature to another, the data representing these real-world features should also form a connection. Snapping helps achieve a connected network. A snapping tolerance of 10 feet is recommended for ArcMap and 5 feet is appropriate for ArcGis for Windows Mobile.

**Flow Direction**
When drawing line features like pipes and ditches, draw by adding the upstream vertex first, then the downstream vertex. This method ensures that the network flows properly.

**Required Attribution**
The following fields should be filled out, when present.

- Component
- ComponentType (where applicable)
- Material
- Cover Size
- Cover Style
- Diameter OR WidthA/WidthB OR Height/Width
- Intent
- Owner Entity
- XYSource
- DataSource
- LoadDate
- FieldDate
- LoadedBy
- FieldVisitedBy
- Verified

All possible information will not always be available for a given feature. In fact, most of the time we will only have basic information from the office work. Data can be gleaned from the plans themselves, Structure Notes, Drainage Profiles, and Drainage Details. It is a good practice to enter all available attribute data for each feature when mapping in the office.
Splitting pipes, ditches and other line features

Sometimes a single line feature needs to be broken into two line features. For example, it may be apparent that a single pipe feature is actually two pipes of different material or size that are connected by a fitting underground. Or, perhaps a catch basin was not mapped and the pipe needs to be broken into two.

Do not split line features.

Instead, drag a node of the existing line to the location you would split.

Draw in a new line that snaps to the node you moved.

Alert the Roads Services Division GIS group (rdsgisgrp@kingcounty.gov) when you split features so that work orders can be attached to the new asset.

Merging pipes, ditches and other line features

Do not merge line features. Please pass off the AssetIDs of the two features that need to be merged to the Roads Services Division GIS group (rdsgisgrp@kingcounty.gov).

Reclassifying Features—Moving Features From One Feature Class To Another
Sometimes features are mapped in one feature class, but actually belong in another. For example a No Sump feature is actually a Catch Basin and belongs in the Sump feature class. Retire the existing feature and map a new feature in the appropriate feature class.

**Pipes/Culverts With Different Material On Each End**

Sometimes a single pipe/culvert will have different material types on each end. While you may not know exactly where the junction between the two segments occurs, the pipe/culvert should be mapped as two features so the different materials are recorded. Draw in a pipe/culvert feature across the full extent of the pipe/culvert that snaps to the Connect features at either end. Next, use the Split tool to split the pipe/culvert. Enter the material attributes for each segment.

**Pipes/Culverts With Different Sizes On Each End**

Sometimes a single pipe/culvert will be different size at each end. While you may not know exactly where the junction between the two segments occurs, the pipe/culvert should be mapped as two features so the different sizes are recorded. Draw in a pipe/culvert feature across the full extent of the pipe/culvert that snaps to the Connect features at either end. Next, use the Split tool to split the pipe/culvert. Enter the diameter attributes for each segment.

**Use the 2012 Natural Color Orthophotos**

Although the county purchased 2013 aerial photos, map editors should use the 2012 aerials when editing features. The 2012 aerials line up with county control points, while the 2013 imagery was not intended for mapping purposes and does not meet control standards. The 2013s may provide a more current, and sometimes better, view of features, but they should be used for comparative reference only.

**Stormwater Office Editor Map.mxd**

Office editors should use the Stormwater Office Editor Map.mxd when editing. The mxd contains all of the Editing Layers (MS4 features), Supporting Layers (Permit Deadlines, Service Levels for Roads, Hydrology Layers, Parcels, etc.), KC Generic Base Map, and Imagery (2012 & 2013). The Stormwater Office Editor, Map.mxd, already has the GenerateID and DynamicValue tables loaded, which helps ensure data quality.

Within the Editing Layers, all of the feature classes that represent MS4 features are included. Feature classes typically have symbology broken out by Component Type. See the example below:

Most of the Stormwater Office Editor Map’s feature classes have definition queries applied to them, which only show records with a CurrentStatus of “Active.” Retired points can be shown by modifying the definition query.

**Attribute Assistant in ArcMap**

Office staff editing with ArcGIS Desktop should install and use the Attribute Assistant in order to automatically populate certain fields when editing records. The majority of the editing should be performed in the Stormwater Office Editor Map.mxd, which already has the GenerateID and
DynamicValue tables loaded. However, it is important to note that the Attribute Assistant will work only with the StormEdit.STORMWATERMOBILEDBO.GenerateId and StormEdit.STORMWATERMOBILEDBO.DynamicValue tables loaded into the .mxd document. To install the Attribute Assistant, go here:

1. Click on AttributeAssistant.esriAddIn to install.
2. After install open the toolbar in ArcMap.
3. Copy the stormwater config file to:
   C:\Users\[YourUsername]\AppData\Roaming\ArcGISSolutions\ConfigFiles
4. Use the settings button on the toolbar in ArcMap.
5. Change the config to the “Stormwater” config.
6. The Attribute Assistant is working when the first icon in the toolbar has a green plus.

Conflicts Resolution
Sometimes conflicts arise when two different editors edit the same feature. The Conflicts dialogue box will appear. Leave the dialogue open and have an experienced editor resolve the conflict.