

MNDNR Culvert Inventory Application Suite – Fact Sheet



Purpose

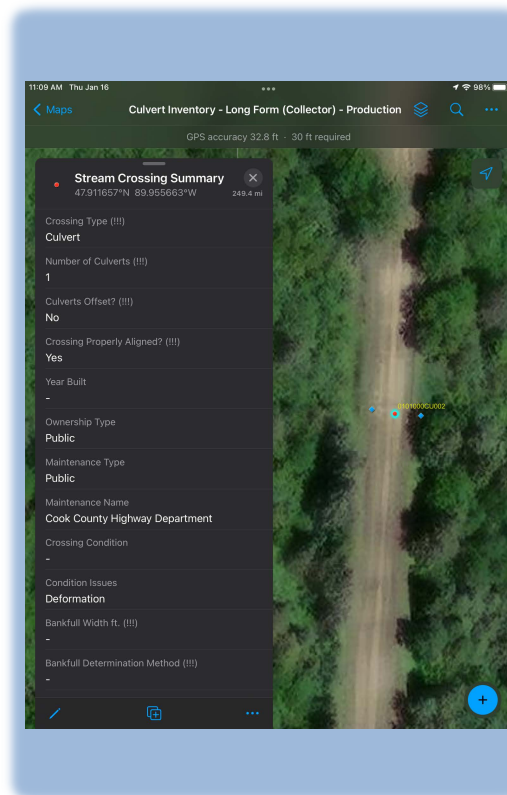
- To allow simultaneous collection of culvert locations and attributes in a standardized manner by professional staff across Minnesota
- To build a statewide database of culvert features which can be used for a variety of purposes, including:
 - *Fish/species passage*
 - *Hydrologic connectivity of the landscape*
 - *Water quality/sediment transport*
 - *Flood control and hydrologic modeling*
 - *Habitat restoration (bank stabilization, etc.)*
 - *Culvert/bridge evaluation and maintenance*
 - *Hydro-modification of LiDAR-derived DEMs*

The **MNDNR Culvert Inventory Application Suite** consists of the following related components:

- (1) **ArcGIS FieldMaps Mobile Application** – for field data collection
- (2) **ArcSDE Centralized Database** – for multi-user editing/storage
- (3) **MNDNR Custom Web Application** – for data review and approval
- (4) **Statewide GIS layers** – for GIS applications

(1) ArcGIS FieldMaps Mobile Application

- The ArcGIS FieldMaps mobile application allows for field-scale collection of data about stream crossings, culvert openings, bridges and breach lines.
- There are two alternate user forms for data collection:
 - **LONG FORM** – based on the [MNDNR Stream Crossing Full Assessment Form](#) (a standard form used by MNDNR staff and many external partners) -- Appendix D, p. 27-28
 - **SHORT FORM** – based on the [Interim Guidance on Acquisition of Culvert Geospatial Data \(pdf\)](#) authored by the MN Digital Elevation Committee - R&E Subcommittee -- Table 1 (Attribution Template) p. 5



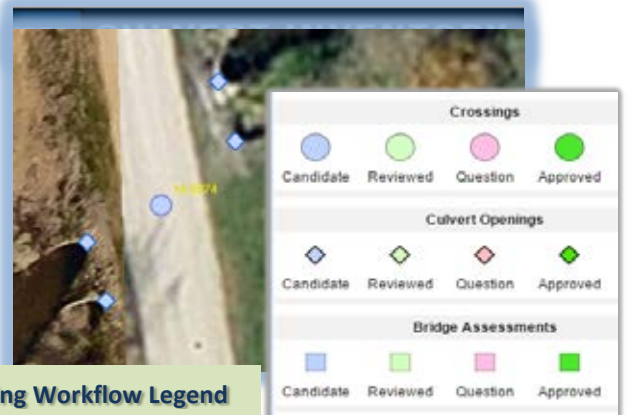


(2) ArcSDE Centralized Database

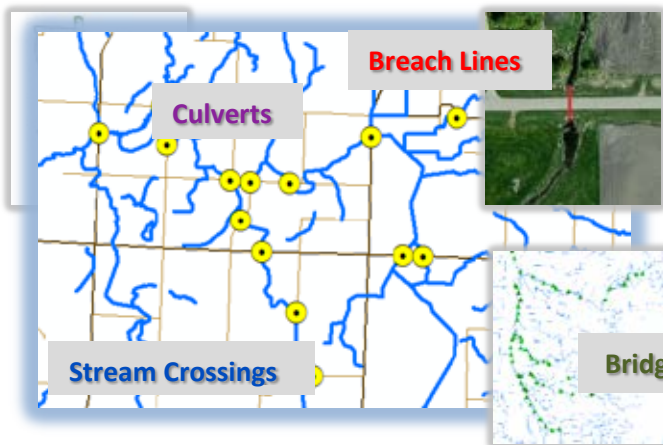
- The centralized database allows the following:
 - Simultaneous editing by multiple users
 - Standard data domains and values
 - Secure centralized data storage
 - Regular data backup and maintenance

(3) DNR Custom Web Application

- The custom web application allows the following:
 - Display and review of collected data
 - Auto-population of attributes and data validation
 - Controlled editing depending on 'user level' rights
 - Approval workflow for business data stewards



Editing Workflow Legend



(4) Statewide GIS Layers

- Standardized GIS layers available to all users:
 - Only 'approved' features are added to GIS layers
 - Multiple layers and symbolizations are possible
 - Statewide layers auto-generated weekly
 - GIS layers available via *MNGeoSpatial Commons*

How to get started

- (1) Contact MNDNR* for a **Culvert Inventory Application Suite** logon.
- (2) Obtain an Android or iOS device for data collection.
- (3) Follow instructions from MNDNR on how to download and operate the application suite.
- (4) Submit existing culvert inventory, bridge inventory or breach line data to **Andy*** (below)

DNR Culvert Inventory Resources: http://www.dnr.state.mn.us/watersheds/culvert_inventory/index.html

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