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 Collector 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 Collector Mobile Application**

• The ArcGIS Collector 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:

  o **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

  o **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

(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 nightly
  - GIS layers available via MNGeoSpatial Commons

How to get started

1. Contact MNDNR* for a Culvert Inventory Application Suite logon.
2. Obtain an Android, iOS or Windows 10 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](http://www.dnr.state.mn.us/watersheds/culvert_inventory/index.html)

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