

## 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:

ArcGIS Collector

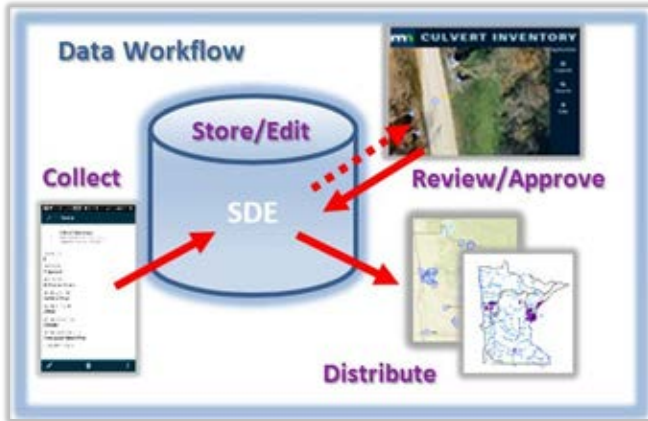
- (1) **ArcGIS Collector Mobile Application** – for field data collection
- (2) **ArcSDE Centralized Database** – for multi-user editing/storage
- (3) **MNDNR Custom Web Application** – for data review and approval
- (4) **Statewide GIS layers** – for GIS applications

### (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:
  - **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



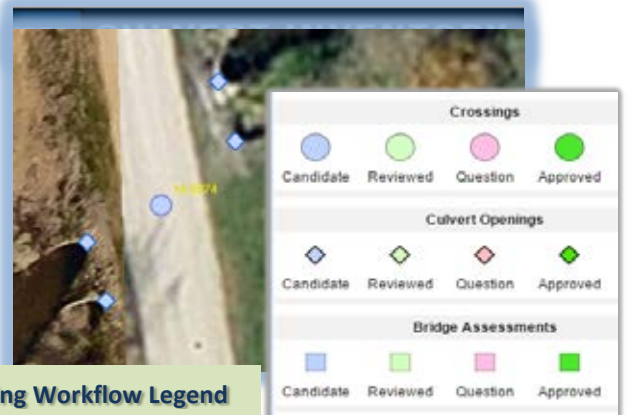


## (2) ArcSDE Centralized Database

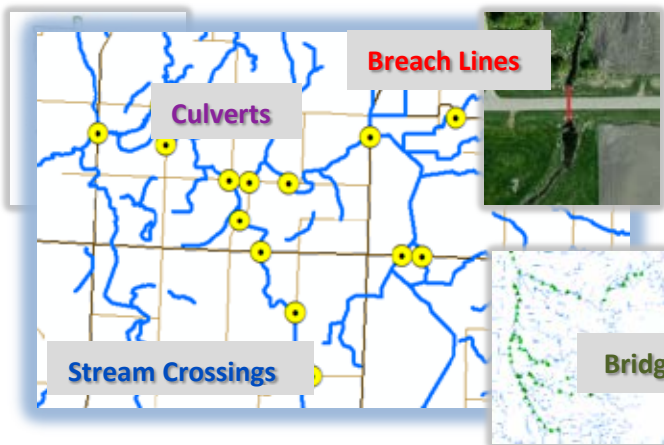
- The centralized database allows the following:
  - Simultaneous editing by multiple users
  - Standard data domains and values
  - Secure centralized data storage
  - Regular data backup and maintenance

## (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, 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)

### CONTACTS (MN.IT@MNDNR)

**Lyn Bergquist**, Fisheries IT Supervisor 651-259-5189 (St. Paul)  
**Sean Vaughn**, Hydro\LiDAR Coord 763-389-7100 x226 (Cambridge)

email format: [firstname.lastname@state.mn.us](mailto:firstname.lastname@state.mn.us)

\***Andy Williquett**, GIS Specialist 651-259-5244 (St. Paul)  
**Rick Moore**, LiDAR Data Steward 507-389-8810 (Mankato)