MN 520.01 Minimizing erosion and pollution during construction

(a) Construction activity that disturbs one or more acres of land must have coverage under a Construction Stormwater Permit from the Minnesota Pollution Control Agency. Construction of conservation practices associated with agricultural or silvicultural activities are exempt from this permit requirement. Examples of exempt conservation practices include:

- Grassed Waterways
- Terraces
- Water and Sediment Control Basins
- Diversions
- Grade Stabilization Structures

Although exempt from permitting requirements, construction activities associated with conservation practices must still be performed with appropriate erosion and sediment control measures to minimize the chance of a water quality standard violation.

The provisions listed in form MN-ENG-142, included here as an exhibit, shall be the minimum erosion and sediment control provisions included on all conservation practice projects which involve earth moving activities. This form may be included in the plans or equivalent provisions provided as notes on drawings or details in the specifications.

(1) Projects not included under the agricultural and silvicultural exemption include:

(i) Feedlot projects will include erosion and sediment control requirements in the feedlot permit. Plans prepared for the feedlot must include provisions to meet these permit requirements.

(ii) Buildings and roofs may have stormwater permit requirements which could include runoff detention in some cases.

(iii) Projects located in or adjacent to a stream, river or lake, which would have a high potential to violate state water quality standards, usually require a permit even if they support an agricultural or silvicultural conservation practice. MPCA should be consulted if there is a question on permit applicability for these projects.

(2) MPCA policy on the agricultural and silvicultural exemption for conservation practices is spelled out in the MPCA Fact Sheet entitled “Agricultural Conservation Practice Projects, Guidance Regarding Construction Stormwater Permit Requirements”.

MN 520.01 Exhibit – Construction Site Erosion and Sediment Control Form

USDA-NRCS MN-ENG-142
4/08

Construction Site Erosion and Sediment Control

Job Name _____ Date: _____

Practice Standard (name & number) _____

By: _____

County _____ Township, Range, Section _____

Conservation projects with more than one acre of soil disturbance are operating under an exclusion from the National Pollution Discharge Elimination System (NPDES) permitting requirements for construction site storm water discharges. See the MPCA Fact Sheet regarding Conservation Prctices for more details. The following provisions will be implemented to provide construction site erosion and sediment control for these projects regardless of size:

1. Locate topsoil or other temporary stockpiles of soil in locations where they will not be subject to erosion from concentrated flow.

2. When permanent vegetation must be disturbed, limit the area of disturbance to the minimum required for the project.

3. Seed, or otherwise stabilize, disturbed areas in accordance with the planting and erosion control specifications for the project. Stabilization must be done within 14 days in that portion of the site where the construction activity has temporarily or permanently ceased, unless work is completed after the fall seeding cutoff date:

4. If a grassed waterway or diversion will be completed after the fall seeding cutoff date, do not leave a loosened soil surface over winter. Track the finished grade to compact the soil surface for temporary erosion protection. Implement seeding and stabilization as soon as feasible in the spring.

5. Project Specific Requirements (describe or show N/A for not applicable).

   a) Mulching:
   b) Fabric barriers:
   c) Silt Fence:
   d) Other

Note: Excessive sediment discharges from any project that impact water quality may result in enforcement action under state water quality protection rules.

Minnesota Pollution Control Agency

Municipal Division

Stormwater Program

Agricultural Conservation Practice Projects

Guidance Regarding Construction Stormwater Permit Requirements

For the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) General Stormwater Permit for Construction Activity in Minnesota

wq-strm2-16 • June 2007

Use this guidance to determine whether a NPDES/SDS construction stormwater permit is needed for your agricultural conservation practice project.

Background

Construction activity that disturbs one or more acres of land, along with smaller sites that are part of a larger development disturbing one or more acres of land, requires coverage under a NPDES/SDS construction stormwater permit. Construction activity includes practices such as clearing, grading, and excavation.

This fact sheet clarifies the use of the federal exclusion for agricultural activities outlined in the Clean Water Act at 40 CFR Part 122.3(e). The Clean Water Act states that pollutants from non-point source agricultural and silvicultural activities, including stormwater runoff from orchards, cultivated crops, pastures, range lands, and forest lands, are excluded from stormwater regulations.

Types of projects excluded

Construction activities that are associated with the installation of certain conservation practices associated with non-point source agricultural activities, that are for the purpose of soil erosion prevention and sedimentation reduction, are not required to obtain NPDES/SDS construction stormwater permit coverage. Examples of these practices may include:

- Grassed waterways
- Diversions
- Water and sediment control basins
- Terraces
- Grade stabilization structures
- Lined waterways

Landowners and contractors who work on these types of projects conducted under state and federal conservation programs must follow the applicable construction standards and specifications required by those programs for erosion prevention and sediment control Best Management Practices (BMPs) during construction.

Feedlot construction sites at non-concentrated animal feeding operations (CAFOs) with less than 1,000 animal units are required to follow applicable erosion prevention and sediment control BMPs defined in guidance at: www.pca.state.mn.us/publications/wq-f6-75.pdf, in order to avoid the requirement to have a construction stormwater permit.

Types of projects that require a permit

The federal exclusion does not apply to CAFOs or the construction of buildings. The Minnesota NPDES/SDS General Permit for Livestock Production includes construction stormwater permit requirements and coverage.

Agricultural conservation practices that: a) disturb one or more acres of land and do not meet the exclusion criteria above, or b) are located in or adjacent to a stream, river or lake and would have a high potential to violate state water quality standards during construction, are required to obtain NPDES/SDS construction stormwater permit coverage. For more information, contact the MPCA office located near you.

MPCA Offices

Brainerd
(218) 828-2492

Detroit Lakes
(218) 847-1519

Duluth
(218) 723-4660

Mankato
(507) 389-5235

Marshall
(507) 537-7146

Rochester
(507) 285-7343

St. Paul
(651) 296-6300
Toll-free/TTY
(800) 657-3864

Willmar
(320) 214-3786

Minnesota Pollution Control Agency • 520 Lafayette Rd. N., St. Paul, MN 55155-4194 • www.pca.state.mn.us
651-296-6300 • 800-657-3864 • TTY 651-282-5332 or 800-657-3864 • Available in alternative formats

More information

General information:

MPCA Customer Assistance Center, 651-297-2274 or 800-646-6247 (in Minnesota)

For more information:

- Visit the MPCA construction stormwater Web site: http://www.pca.state.mn.us/water/stormwater/stormwater-c.html.
- For drainage ditch projects, see applicable guidance: http://www.pca.state.mn.us/publications/wq-strm2-17.pdf.

Technical information:

Natural Resources Conservation Service and Soil and Water Conservation District offices can also answer questions about construction site erosion and sediment control practices. For further information, consult:

- Stormwater Compliance Assistance Tool Kit for Small Construction Operators, MPCA, www.pca.state.mn.us/publications/wq-strm2-09.pdf
- Protecting Water Quality in Urban Areas Manual, MPCA, www.pca.state.mn.us/water/pubs/sw-bmpmanual.html
- Stormwater Management for Construction Activities, U.S. EPA, http://cfpub1.epa.gov/npdes/stormwater/const.cfm (Go to *Publications*, then to *Policy and Guidance Documents*)
- Summary Guidance, U.S. EPA, www.epa.gov/npdes/pubs/owm0307.pdf

MN520.21 Definition and Classes.

(f) NRCS policy in Minnesota for maintaining an inventory of dams is those which meet any of the following criteria:

(1) All class (b) and (c) dams.

(2) All class (a) dams having more than six feet of overall height between the top of the settled dam and the lowest elevation at the downstream toe and a storage capacity of 50 acre/feet or more. Storage capacity is the capacity at the crest of the emergency spillway or the elevation of the top of dam if there is no emergency spillway.

(3) All class (a) dams with an overall height of 25 feet or more and a storage capacity of more than 15 acre/feet (height and storage capacity definitions are in (2) above).

(4) All dams with an overall height of 35 feet or more (height as in (2) above).

(g) Inventory size dams will be included in the NRCS inventory if they meet all of the following:

(1) Dam was built with NRCS technical and/or financial assistance.

(2) The dam was built according to NRCS standards and specifications in effect at the time of construction.

(3) Alterations to the dam since the time of construction have been made in accordance with NRCS standards and specifications.

(h) All information requested on Form MN-ENG-129 is to be included in the NRCS inventory. A copy of the form and instructions for completing the form are shown in Section MN520-43 Subpart E, Exhibits.

(i) Inventory of new dams. As new dams are constructed, the required data is to be added to the NRCS inventory on the basis of design and construction records. The individual approving the design shall, to the extent possible, complete form MN-ENG-129. The individual making the final construction check will check form MN-ENG-129, make any needed as-built corrections, and verify that all items are complete. One copy of MN-ENG-129 is to be forwarded through the Area Office to the State Conservation Engineer (SCE) and one copy retained in the case file.

(j) MN Department of Natural Resources (MN-DNR) dam inventory. State inventory information will be sent to the MN-DNR at least annually, by the state office. All needed information will be available from form MN-ENG-129. The MN-DNR will assign national dam inventory ID numbers.

(k) Entry, storage, and retrieval of data.

(1) Automatic data processing procedures will be used to maintain the inventory. Data will be entered at the state office.

(2) Inventory data will be retrieved as needed by the state office and copies of the inventory furnished to respective area and field offices.

(l) Keeping the inventory current. Data on new dams, updated or corrected data on previously submitted dams can be submitted at any time. Data on all dams completed during a calendar year must be forwarded through the Area Office to the SCE by January 15 of the following year. This data will then be entered into the dam inventory database.

(m) Responsibility.

(1) The SCE provides overall coordination for the inventory of dams.

(2) Each ASTC(FO) insures the inventory policy is carried out by the field offices.

(3) Each area office will review the MN-ENG-129 forms received from the field, for completeness and accuracy, before transmitting them to the state office.

MN520.23 Classification.

(b) Hazard classification of a dam shall be done early in the planning stage so that unnecessary delays and duplication of work can be avoided. The following procedure shall be followed when determining hazard class:

(1) Visually inspect the site and upstream and downstream conditions. If the hazard class is obvious, this will be documented and no further analysis is required.

(2) If the hazard class is not obvious from the visual inspection, a breach analysis may be required.

(i) A breach analysis, when warranted, shall be evaluated with nonstorm conditions downstream of the dam and the reservoir water surface at the emergency spillway elevation, the principal spillway hydrograph peak elevation, or the emergency spillway hydrograph peak elevation, whichever is highest.

(ii) SCS Simplified Dam Breach Routing Procedure, TR-66, may be used for classification. This assumes an instantaneous breach and will give a conservative hazard classification. For more detailed breach analysis, the National Weather Service Dam Break or Simplified Dam Break Flood Forecasting Models will normally be used.

(iii) When the National Weather Service breach analysis procedures are used, an embankment decay time during breaching is deemed appropriate and should be based upon the actual embankment and foundation materials placed. The decay time will normally vary from an instantaneous breach up to about 3 hours, depending on the ability of the embankment and abutment materials to resist erosion.

(3) Hazard classification shall be documented on form MN-ENG-027. See Exhibit MN520.40.

(4) Guidelines used by NRCS in Minnesota to evaluate the hazard classification of a dam are based upon the potential losses that could result if a dam failure should occur. These guidelines are given in Exhibit MN520.41.

MN520.28 Potential impact area—class (a) dams of inventory size and all class (b) dams.

(b) Requirements.

(1) Use breach routing procedures for all class (b) dams.

(i) For class (a) dams, the individual exercising design approval authority will determine the need for a breach routing. A conservative estimate may be made in place of breach routing. A conservative estimate of the potential impacted area could be as follows: The area flooded from the dam downstream to a major receiving stream. Depth of the flood wave is to be two-thirds of the dam height at the upper end and decreasing uniformly to a depth which covers the flood plain at the lower end.

(2) A map such as the USGS topographic map will be used to show the impact area determined by breach routing.

(i) When a conservative estimate is made to determine the impact area, a written narrative (see Exhibit MN520.42) and/or a map will be used to describe the impact area.

(ii) Documentation of the method or thought process used to develop the potential impact area shall be included in the design file.

(iii) The engineer with design approval will prepare a narrative and/or a map indicating precautions to further development.

(c) Distribution.

(1) For class (a) dams that are designed and approved by field engineers, the District Conservationist is responsible for transmitting information on potential impact areas (see Exhibit MN 520.42). For all other dams, the State Conservationist will transmit the information.

“Reserved”

MN520.40 Documentation for Hazard Classification

See Form MN-ENG-027, Documentation for Hazard Classification

MN520.41 Guidelines for evaluating potential hazards for dam classification.

	HAZARD CLASSIFICATION		
DAMAGE TO:	(a)	(b)	(c)
LOCATION Area in which the dam will be installed	Rural or agricultural – Areas of mostly farming or ranching. Urban housing developments do not exist and none expected during structure design life. Agricultural land – used for agricultural production.	Predominantly rural or agricultural.	Developing or urban.
ROADS Township and county – All rural area rounds without concrete or bituminous surfacing	May damage – Damage may occur when road surface acts as weir and d>2 ft.		
Main highways – U.S., interstate, and turnpike highways, and any concrete or bituminous surfaced township, county or state road that serves as the only access to a community	No significant damage. No overflow of the road or overflow at d < 1 ft. for only a short time (less than 1 hour).	May damage – damage may occur when road surface acts as weir and d > 2 ft.	Serious damage – Interruption of service for more than 1 day.
RAILROADS Minor – Interstate railroads used as frequently as one time per day. Materials carried are relatively nonperishable, agricultural products, or products if disrupted would not adversely affect local economy, safety, or general well-being of the area.	No significant damage. Overflow of the bed for short periods at depths of less than 1 ft.	May damage – Damage may occur when road surface acts as weir and d >2 ft.	
Main – Intrastate or interstate railroads used more frequently than one time per day. Disruption would adversely affect economy, safety, and general well-being of the area.	No overflow of bed and no significant damage to embankment or culvert system.	May damage – No interruption of services. Minor damages may occur (overflow of less than 1 ft. for very short periods.).	Serious damage – Interruption of service for more than 1 day.
BUILDINGS Farm – Farm buildings – On farm buildings not occupied by people or having potential for occupany.	May damage Damage may occur when D>3' and depth x velocity is greater than 15.		
Homes – Single family residences, apartments, nursing homes, motels, hotels, and hospitals.	May damage – Damages limited to flooding basements used primarily for storage and heating units.	May damage – Any flooding above ground floor level.	Serious damage – damage may occur when D> 3' and depth x velocity is greater than 15.
Isolated – Single family dwellings on farms and ranches. Does not include homes in developing areas.	Same as above.	Same as above.	Same as above.

MN520.41

BUILDINGS (con.) Industrial/Commercial --	No damages. Generally no significant loss of property or structural damage (d≤1 ft. and velocity ≤ 3 fps.).	May damage – Kind, construction, and contents of building must be evaluated.	Serious damage -- Kind, construction, and contents of building must be evaluated. General serious damage can occur at a depth of 3 ft or more and at a velocity of 5 ft/second or more.
Public – Schools, churches, libraries, etc.	No damages. Generally no significant loss of property or structural damage (d≤1 ft. and velocity ≤ 3 fps.). Escape routes are out of direct flow and easily negotiated.	May damage – Kind, construction, and contents of building must be evaluated. Evaluate escape routes for handicap and children.	Serious damage – Kind, construction, and contents of building must be evaluated. General serious damage can occur at a depth of 3 ft or more and at a velocity of 5 ft/second or more.
UTILITIES Relatively important --	No damages to public utilities expected.	May damage – Damage may occur when buried lines can be exposed by erosion and when towers, poles, and above ground lines can be damaged by undermining or by debris produced from the flood plain.	Serious Damage – Damage can be expected and interruption of services for 3 to 4 days.
Important – Interstate and intrastate power and communication lines serving towns, communities, and significant military and commercial facilities in which disruption of power and communication would adversely affect the economy, safety, and general well-being of the area.	No damages.	No interruption of services and no damages would threaten interruption of services.	Serious damage – Interruption of service for more than 1 day.
LOSS OF LIFE Potential for loss of life – Flood depths greater than 1 ft. in living quarters; such as residences, apartments, nursing homes, motels, hotels, and hospitals, and on escape routes from such living quarters. Potential of loss of life should be considered for schools and recreational areas where adequate warning systems are not available.	No.	No.	Yes.

United States Department of Agriculture

NRCS
Natural Resources Conservation Service
600 First St, NE
Central, MN 55540 Phone: 651-202-7900 Fax: 651-202-7914

Date

Mr. O. J. Olson
Rural Route 1
Lake Wobegon, Minnesota

Dear Mr. Olson:

The USDA-Natural Resources Conservation Service (NRCS) is designing a livestock dam for you in the SE ¼ sec. 37, T115N, R39W on Lonely Creek, a tributary of the Minnesota River. Due to the dam's height (28 ft.) and storage capacity (51 ac/ft) it falls within the size category in which potential downstream damage should be considered in the event the dam should fail.

An evaluation was made of the area below your dam that could be flooded if a sudden failure should occur. The estimated flooded or impact area is 250 ft wide and 1 mile long. The evaluation indicated that the flooded area would affect only fences, trails, a county road and the valley crops. For this reason, the dam has been assigned a class (a) or low hazard rating. The design of the dam and emergency spillway will be based on this classification. If future development should occur downstream of the dam or should another dam be built upstream, hazard classification could change abruptly. You need to be aware of this so that you might alert future developers to the hazards that could occur. This is your responsibility.

This information is being provided to you so that you are aware of your responsibilities in connection with the proposed dam. You will need to provide this information to the Minnesota Department of Natural Resources and the county zoning officer when you apply for a permit for the dam.

Please let me know as soon as possible if you want NRCS to complete the final design of your dam. We will wait for your reply before we proceed. If you have any questions please do not hesitate to contact me.

Sincerely,

John J. Johnson
District Conservationist

cc:
Central County Soil and Water Conservation District, Central, MN

INSTRUCTIONS FOR COMPLETING THE MINNESOTA DAM INVENTORY

The data base field information is given as follows:

( ) official field name (field name used in database) (units, where applicable) (field type, field size) -- field description and/or entry options.

The first series of fields (#1 - #52) comprise the National Inventory of Dams (NID) data fields that are standardized by the U. S. Army Corps of Engineers (USACE) and are reported by all National Inventory of Dams participating agencies.

(1) DAM NAME (DAM_NAME) (alphanumeric, 65 var) -- Enter the official name of the dam. Do not abbreviate unless part of the official name. For dams that do not have an official name, use the popular name of dam. Do not insert meaningless information such as “Noname” or “Unknown” which only serve to increase the size of the file.

(2) OTHER DAM NAMES (OTHER_NAMES) (alphanumeric, 65 var) -- If there are names other than the official name (i.e., reservoir name) of the dam in common use, enter the names in this space. Separate names using a semi-colon. Leave blank if none.

(3) DAM FORMER NAMES (FORMER_NAMES) (alphanumeric, 65 var) -- Enter any previous reservoir or dam name(s), if changed. Separate the names using a semi-colon. Leave blank if none.

(4) STATE OR FEDERAL AGENCY ID (FED_ID) (alphanumeric, 15 var) -- Enter the Official State or Agency identification number for the dam. The first 2 characters contain the State code. Characters 3 through 10 are assigned by the NRCS State office and must uniquely identify that dam within the State. This field was initially used in the 1983-1984 version of the SCS main frame inventory as the unique identifier. This need for a unique identifier has been replaced by the NID ID (Field #5) which has been assigned to every dam in the National Inventory of Dams (NID). This field may be the same as Field #5 or left blank.

(5) NID ID (NID_ID) (alphanumeric, 7) -- Enter the official NID identification number for the dam. This is a required field and must have an entry to be included in the National Inventory of Dams. This field is used as the unique identifier for each dam in the Nation. This identifier is used to link the NID and NRCS databases with other databases for queries about NRCS dams. It is the same as the Corps of Engineers Identification Number assigned in the original 1981 USACE National Inventory of Dams. Once assigned, this NID ID will never be reused. If a dam is removed or decommissioned, the NID ID number for that dam is retired.

The first two characters are the appropriate two letter State abbreviation, based on the location of the dam. The last five characters will be a unique number for that State. Ranges of numbers have been assigned to each Agency participating in the National Inventory of Dams effort so that assigning Agency can be determined.

For the NRCS compiled inventory, this number likely has already been assigned by the State Dam Safety Agency or another Federal Agency, and NRCS should obtain the NID ID from their State Dam Safety Agency. Only in very rare cases, such as non-participating States, will NRCS need to assign a NID ID. In this situation, please contact NRCS NHQ for the range of assigned numbers.

It is anticipated that different Agencies have assigned NID ID numbers to dams already added to the database by another Agency. Thus some existing dams may be counted twice in the National Inventory. As such cases are identified, NRCS will be notified and asked to correct the NID ID number in its database.

(6) LONGITUDE (LONG_DEG) (number, 12 var) -- Longitude at the dam centerline as a single value in decimal degrees (Degrees + Minutes/60 + Seconds/3600). NOTE: Change in format from separate degrees, minutes and seconds used in previous NID. This is the X-coordinate for geocoding.

(7) LATITUDE (LAT_DEG) (number, 12 var) -- Latitude at the dam centerline as a single value in decimal degrees (Degrees + Minutes/60 + Seconds/3600). NOTE: Change in format from separate degrees, minutes and seconds used in previous NID. This is the Y-coordinate for geocoding.

(8) SECTION, TOWNSHIP, RANGE LOCATION (GEODETIC_LOC) (alphanumeric, 30 var) -- This is an optional field. States that track Section, Township and Range are requested to enter any information that is understandable and that clearly designates the individual values. For example, S.21, T.3N, R.69W. If the meridian location is needed to locate the dam, include it in the field. For example, S21 T3N R68W of 6PM (Sixth Principal Meridian).

(9) COUNTY (COUNTY) (alphanumeric, 30 var) -- Name of county (or parish) where dam is located.

(10) RIVER OR STREAM (STREAM) (alphanumeric, 30 var) -- Name of river or stream on which dam is built. If the stream is unnamed, identify it as a tributary to a named river, e.g., TR-Snake. If the dam is located offstream, enter the name of the river or stream and identify as offstream, e.g., Snake-OS.

MN520.43 MN Dam Inventory Report, MN-ENG-129 Instructions

(11) NEAREST CITY/TOWN (NEAREST_TOWN) (alphanumeric, 30 var) -- Name of nearest downstream city, town, or village that is most likely to be affected by floods resulting from failure of the dam.

(12) DISTANCE TO NEAREST CITY/TOWN (DIST_TOWN) (miles) (number, 3 var) -- Distance to nearest downstream city, town, or village, to the nearest mile (and tenth if appropriate).

(13) OWNER NAME (OWNER_NAME) (alphanumeric, 50 var) -- Name of owner of dam.

(14) OWNER TYPE (OWNER_TYPE) (alphanumeric, 1) -- Use the following codes to indicate the type of owner:

F for Federal	U for Public Utility
P for Private owner	S for State
L for Local Government	

Typically for NRCS, this Field would be L if Field #53 = WS, PT, RC, or FP.

(15) DAM DESIGNER (DAM_DSGNR) (alphanumeric, 65 var) -- Enter the name of the principal firm(s) or agency accomplishing design of the dam and major appurtenances operating features, and major modifications. List original designer, then modification designers (if applicable). Separate the names using a semi-colon. Typically for NRCS, if the design was prepared by an A&E and NRCS approved the plans, this Field would show the name of the A&E, and Field #46 would show NRCS involvement.

(16) NON_FEDERAL DAM ON FEDERAL PROPERTY (NFDFP) (alphanumeric, 1) -- Indication whether the dam is a non-Federal dam on Federal property, such as in National Forests.

Y for Yes	N for No

(17) DAM TYPE (DAM_TYPE) (alphanumeric, 6 var) -- Codes to indicate the type of dam. List in order of importance. Codes are concatenated if the dam is a combination of several types. For example, an entry of CNCB would indicate a concrete buttress dam type.

RE for Earth	VA for Arch	ER for Rockfill
MV for Multi-Arch	ST for Stone	PG for Gravity
CN for Concrete	TC for Timber Crib	CB for Buttress
MS for Masonry	OT for Other	

(18) CORE (CORE) (alphanumeric, 3) -- Enter code to indicate position, type of watertight member, and certainty. Typically for NRCS, most dams would be HEK.

Position:	F for upstream facing; H for homogenous dam; I for core; X for unlisted/unknown.
Type:	A for bituminous concrete; C for concrete; E for earth; M for metal; P for plastic; X for unlisted/unknown.
Certainty:	K for known; Z for estimated.

(19) FOUNDATION (FNDN) (alphanumeric, 3) -- Code for the material upon which dam is founded followed by the certainty; do not separate with a comma.

Material:	R for rock; RS for rock and soil; S for soil; U for unlisted/unknown.
Certainty:	K for known; Z for estimated.

(20) PURPOSES (PURPOSES) (alphanumeric, 8 var) -- Codes to indicate the purposes for which the reservoir is used: Can use up to four purposes, list in order of importance. Codes are concatenated when multiple codes are used, e.g. ICF for irrigation, flood control, and fish and wildlife.

I for Irrigation	N for Navigation	S for Water Supply
R for Recreation	H for Hydroelectric	F for Fish and Wildlife Pond
T for Tailings	D for Debris Control	O for Other
C for Flood Control and Storm Water Management		
P for Fire Protection, Stock, or Small Farm Pond		

(21) YEAR COMPLETED (YR_COMP) (alphanumeric, 5 var) -- Year in which original main dam structure was completed. The NID allows addition of an “E” to indicate an estimated date. Use four digits to be Y2K compliant. Entry date is not to be changed when modifications or rehabilitations are done; use Field #22 below.

MN520.43 MN Dam Inventory Report, MN-ENG-129 Instructions

(22) YEAR MODIFIED (YR_MOD) (alphanumeric, 60 var) -- Year of major modification or rehabilitation of dam or major control structure is completed. Use four digits to be Y2K compliant. Major changes are defined as structural, foundation, or mechanical construction activity which significantly restores the project to original condition; changes the project's operation, capacity or structural characteristics (e.g., spillway or seismic modification); or increases the longevity, stability, or safety of the dam. Use the codes to indicate the type of modification; up to ten may be entered, separated by semi-colons.

S for structuralF for foundation M for mechanical
E for seismic H for hydraulic O for other.

(23) DAM LENGTH (DAM_LEN) (feet) (number, 7 var) -- Length of dam defined as length along top of dam. Also includes spillway, power plant, navigation lock, fish pass, etc., where these form part of the length of the dam. If detached from the dam, these structures should not be included.

(24) DAM HEIGHT (DAM_HT) (feet) (number, 6 var) -- Height of the dam to nearest foot, defined as the vertical distance between the lowest point along the crest of the dam and the lowest point at the downstream toe which usually occurs in the natural bed of the stream or water course.

(25) STRUCTURAL HEIGHT (STR_HT) (feet) (number, 6 var) -- Height of the dam to the nearest foot, defined as the vertical distance from the lowest point of the excavated foundation to the top of the dam

(26) HYDRAULIC HEIGHT (HYDR_HT) (feet) (number, 6 var) -- Height of the dam to the nearest foot, defined as the vertical distance between the maximum design water level (freeboard design flood) and the lowest point at the downstream toe. Typically for NRCS, this is the same as Field #24.

(27) MAXIMUM DISCHARGE (MAX_DISC) (cfs) (number, 7 var) -- The discharge in cubic feet per second (cfs) that the spillway will discharge when the pool is at the maximum designed water surface elevation.

(28) MAXIMUM STORAGE (MAX_STOR) (acre-feet) (number, 10 var) – The total storage space in a reservoir below the maximum attainable water surface elevation. Typically for NRCS, this is the sum of #64, #65, #66, and #67.

(29) NORMAL STORAGE (NORM_STOR) (acre-feet) (number, 10 var) – The total storage space in a reservoir below the normal retention level, excluding any flood or surcharge storage. Typically for NRCS, this is the sum of #64 and #67.

(30) SURFACE AREA (SURF_A) (acres) (number, 8 var) -- Surface area of the impoundment at normal pool level.

(31) DRAINAGE AREA (DA) (square miles) (number, 10 var) -- Drainage area to the nearest hundredth, which is defined as the area that drains to the dam.

(32) DOWNSTREAM HAZARD POTENTIAL (CUR_HAZ) (alphanumeric, 1) -- Code to indicate the most current potential hazard classification as defined in the NEM. Use L for NRCS Class a, S for NRCS Class b, and H for NRCS Class c. Use best and latest available information. Qualify currentness in Field #63. Do not use any other Codes since this Field is a critical filter for inclusion in the NID. Leave blank if unknown.

L for low S for significant H for high

(33) EMERGENCY ACTION PLAN (EAP) (alphanumeric, 2) -- Code indicating whether or not the dam has an Emergency Action Plan developed by the dam owner.

Y for Yes N for No
NR for Not Required by submitting agency

Typically for NRCS, if Field #32 is L or S, this Field is NR.

(34) INSPECTION DATE (LAST_INSP_D) (date, 10 var) -- Date of the most recent inspection of the dam prior to submission of data. Typically for NRCS, this means formal inspection led by a qualified engineer (can be NRCS or non-NRCS) as defined in NRCS National Operation & Maintenance Manual (NO&MM). To be Y2K compliant, the date should be entered as mm/dd/yyyy (06/30/1982).

(35) INSPECTION FREQUENCY (INSP_FREQ) (number, 1) -- Scheduled frequency interval for periodic inspections, in years. Typically for NRCS, this is the frequency of formal inspections required by the State dam regulatory authority.

(36) STATE REGULATED DAM (STATE_REG) (alphanumeric, 1) -- Code to indicate whether the dam is considered “State Regulated” by the National Dam Safety Program Act. A “State Regulated Dam” is defined in the Act as a dam for which the State executes one or more of the following general responsibilities: (a) Inspection; (b) Enforcement; (c) Permitting.

Y for Yes, N for No

(37) STATE REGULATORY AGENCY (STATE_REG_AGENCY) (alphanumeric, 30 var) -- Name of the primary state agency with regulatory or approval authority over the dam.

(38) SPILLWAY TYPE (SPWY_TYPE) (alphanumeric, 1) -- Letter code that describes the type of spillway:

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C for Controlled U for Uncontrolled N for None

Typically for NRCS; if Field #20 includes I, leave this field blank; if Field #69 is NO, use N for this field; if Field #69 is not NO, use U for this field.

(39) SPILLWAY WIDTH (SPWY_W) (feet) (number, 4) -- The width to the nearest foot, of the spillway that is available for discharge when the reservoir is at its maximum designed water surface elevation. Typically for NRCS, this is the bottom width on an open channel spillway.

(40) OUTLET GATES (OUT_GATES) (alphanumeric, 15 var) -- Use one or more of the following codes to describe the type of spillway and controlled outlet gates, if any.

Use up to five types in decreasing size order, separated by semi-colons, followed by number of gates. Typically for NRCS, if Field #38 is U, this field is U; if Field #38 is N, this field is X.

X for none	U for uncontrolled	T for tainter (radial)
L for vertical lift	R for roller	B for bascule
D for drum	N for needle	F for flap
S for slide	V for valve	O for other controlled

(41) VOLUME OF DAM (VOL_DAM) (cubic yards) (number, 10 var) Total number of cubic yards of materials used in the dam structure. Include portions of the powerhouse, locks, and spillways only if they are an integral part of the dam and are required for structural stability.

(42) NUMBER OF LOCKS (N_LOCKS) (number, 1) -- Number of existing navigation locks for the project. Typically for NRCS, this is 0.

(43) LENGTH OF LOCKS (L_LOCKS) (feet) (number, 4 var) Length of primary navigation lock to the nearest foot. Typically for NRCS, this field is blank.

(44) LOCK WIDTH (LOC_W) (feet) (number, 3 var) -- Width of the primary navigation lock to the nearest foot. Typically for NRCS, this field is blank.

The following eight fields (#45 - #52) comprise additional data fields that are only provided by participating Federal Agencies submitting data to the NID. Typically NRCS should enter data for only other USDA Agencies involved with NRCS assisted dams. Use the following codes as applicable for each field:

USDA NRCS (Natural Resources Conservation Service)
USDA FS (Forest Service)
USDA RHS (Rural Housing Service, formerly part of FmHA)
USDA RUS (Rural Utilities Service, formerly part of FmHA)
USDA FSA (Farm Services Agency, formerly ASCS)
USDA ARS (Agricultural Research Service)

(45) FEDERAL AGENCY INVOLVEMENT IN FUNDING (FED_FUND) (alphanumeric, 20 var) – Federal Agency involved in funding of the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this should be USDA NRCS if Field #53 = WS, PT, RC, FP.

(46) FEDERAL AGENCY INVOLVEMENT IN DESIGN (FED_DESIGN) (alphanumeric, 20 var) -- Federal Agency involved in the design of the dam. Codes are concatenated if several agencies were involved.

(47) FEDERAL AGENCY INVOLVEMENT IN CONSTRUCTION (FED_CONST) (alphanumeric, 20 var) -- Federal Agency involved in construction of the dam. Codes are concatenated if several agencies were involved.

(48) FEDERAL AGENCY INVOLVEMENT IN REGULATORY (FED_REG) (Alphanumeric, 20 var) -- Federal Agency involved in regulating the dam. Codes are concatenated if several agencies are involved. Typically for NRCS, this field should be blank.

(49) FEDERAL AGENCY INVOLVEMENT IN INSPECTION (alphanumeric, 20 var) (FED_INSP) -- Federal Agency involved in inspecting the dam. Codes are concatenated if several agencies are involved. Typically for NRCS, this field should be blank. USDA NRCS involvement means formal inspection by an NRCS engineer as defined in NRCS National Operation & Maintenance Manual (NO&MM).

(50) FEDERAL AGENCY INVOLVEMENT IN OPERATION (FED_OP) (alphanumeric, 20 var) -- Federal Agency involved in operating the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.

(51) FEDERAL AGENCY OWNER (FED_OWN) (alphanumeric, 20 var) -- Federal Agency which partly or wholly owns the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.

(52) FEDERAL AGENCY INVOLVEMENT - OTHER (FED_OTHER) (alphanumeric, 20 var) -- Federal Agency involved in other aspects of the dam. Codes are concatenated if several agencies were involved. Typically for NRCS, this field should be blank.

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The following sixteen fields (#53 - #75) comprise additional data fields that should be provided for NRCS assisted dams.

(53) PROGRAM AUTHORIZATION (AUTH) (alphanumeric, var 2) -- Code for authorization.

CO for CO-01	GP for GPCP	OT for Other
WS for PL-566	RC for RC&D	PT for PILOT
FP for WF-03		

Dams authorized under WS, PT, RC, or FP are considered as “project” dams.

(54) WATERSHED NUMBER (WSHED_NO) (number, 4) -- Contains the 4-digit watershed number for PL-566 dams. Typically the range is 2001 to 2800 for dams included in watershed plans developed within the state or 2801 to 2999 for dams included in plans developed by an adjoining state.

(55) WATERSHED NAME (WSHED_NAME) (alphanumeric, var 40) -- Name of watershed project for PL-566 dams.

(56) PLANNED SERVICE LIFE (SERV_LIFE) (alphanumeric, 3 var) – Number of years used to amortize the benefits of a project dam and/or determine the volume of sediment storage provided in the sediment pool.

(57) O&M INSPECTION RESPONSIBILITY (O&M_INSP_RES) (alphanumeric, 5 var) – Code to indicate the party assigned operation and maintenance inspection responsibility by an O&M Agreement or supplemental legal document for a project dam. Leave blank for non-project dams.

OWNER for owner in Field #13	NRCS for NRCS
JOINT for OWNER & NRCS	OTHER for other party

NONE for no existing or non-enforceable O&M Agreement

(58) O&M INSPECTION CURRENT (O&M_IN_CURR) (alphanumeric, 1) – Code to indicate if an O&M Inspection and written report were completed on a project dam during the current or past calendar year. Leave blank for non-project dams.

Y for Yes N for No

(59) O&M COMPLETED (O&M_COMP) (alphanumeric, 1) – Code to indicate if O&M needs reported in prior O&M Inspection Report(s) for project dams have been completed. Leave blank for non-project dams.

Y for Yes N for No

(60) POPULATION AT RISK (POP_RISK) (number, 5 var) -- All those persons that would be exposed to flood waters if they took no action to evacuate. It should be the maximum combination of people reasonably expected in the dam breach inundation zone simultaneously at any time of the day or night, including permanent residents, seasonal transients (campers, recreationists, etc), and daily transients (workers, students, shoppers, commuters, etc). Accuracy of the data should be qualified by Field #61.

(61) POPULATION AT RISK ACCURACY (POP_ACC) (alphanumeric, 1) -- Code indicating if the Population at Risk number in Field #60 is based on a visual estimate or breach inundation map analysis.

E for Estimated visually
A for Analyzed with breach inundation map

(62) HAZARD CLASSIFICATION AS DESIGNED OR MODIFIED (DSGN_HAZ) (alphanumeric, 1) -- Code to indicate the potential hazard to the downstream area at the time the dam was built or modified. Use L for NRCS Class a, S for NRCS Class b, and H for NRCS Class c. If an existing dam was modified to reflect a change in classification, enter the most recent classification for which the dam was designed and modified. Leave blank for unknown.

L for low S for significant H for high

(63) HAZARD POTENTIAL CLASSIFICATION YEAR (HAZ_CLASS_YEAR) (number, 4) -- Year of most recent verification of Hazard Potential Classification in Field #32 by qualified NRCS personnel. Use four digits for year to be Y2K compliant.

(64) SEDIMENT STORAGE (SED_STOR) (acre-feet) (number, 10 var) -- The sediment storage capacity of the reservoir.

(65) FLOOD STORAGE (FLD_STOR) (acre-feet) (number, 10 var) -- The flood storage capacity of the reservoir. Typically, this is the capacity of the reservoir between the elevation of the permanent pool and the crest of the auxiliary (emergency) spillway.

(66) SURCHARGE STORAGE (SUR_STOR) (acre-feet) (number, 10 var) -- The surcharge capacity of the reservoir. Typically, this is the capacity of the reservoir between the elevations of the auxiliary (emergency) spillway crest and the top of dam.

(67) OTHER STORAGE (OTH_STOR) (acre-feet) (number, 10 var) -- The other beneficial capacity of the reservoir.

(68) PRINCIPAL SPILLWAY TYPE (PS_TYPE) (alphanumeric, 2) -- Code identifying the type of principal spillway as follows:

CP for Concrete Pipe	CM for Corrugated Metal
PL for Plastic	WS for Welded Steel
CB for Concrete Box	OT for Other
OC for Open Pipe	NO for None

(69) PRIMARY AUXILIARY SPILLWAY TYPE (AS1_TYPE) (alphanumeric, 2) -- Code identifying the spillway type of the first auxiliary (emergency) spillway.

VE for Vegetated	RK for Rock
ST for Structural	EA for Earth
OT for Other	NO for None
HR for Hard Rock	SR for Soft Rock

(70) SECONDARY AUXILIARY SPILLWAY TYPE (AS2_TYPE) (alphanumeric, 2) -- Code identifying the spillway type of the second auxiliary (emergency) spillway. Use the codes under Field #69 above.

(71) TERTIARY AUXILIARY SPILLWAY TYPE (AS3_TYPE) (alphanumeric, 2) -- Code identifying the spillway type of the third auxiliary (emergency) spillway. Use the codes under Field #69 above.

(72) CONDUIT HEIGHT (COND_HT) (feet) (number, 4 var) -- Height for rectangular or diameter for round conduit for the of the largest conduit through the dam to nearest tenth of a foot.

(73) CONDUIT WIDTH (COND_W) (feet) (number, 4 var) -- Width (size) of the largest conduit through the dam to the nearest tenth of a foot. Leave blank if conduit is round.

(74) NUMBER OF CONDUITS (NO_COND) (number, 2 var) -- Number of conduits through dam.

(75) COOL WATER RELEASE (COOL_WATER) (alphanumeric, 1) -- Code indicating if a cold water release exists.

Y for Yes N for No

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See form MN-ENG-129, MN Dam Inventory Report