



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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October 6, 2014

In Reply Refer To:
TAILS: 06E14000-2014-F-0037

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South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501-6174

Subject: Programmatic Biological Opinion for the Issuance of Selected Nationwide Permits
Impacting the Topeka shiner in South Dakota

Dear Mr. Naylor:

This document transmits the U.S. Fish and Wildlife Service's (Service) Programmatic Biological Opinion (BO) regarding potential impacts of the issuance of select Nationwide Permits (NWP) on the federally endangered Topeka shiner (*Notropis topeka*) in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. § 1531 et seq.). The NWPs included in this action are NWP # 3 – Maintenance, NWP # 12 - Utility Line Activities, NWP # 14 - Linear Transportation Projects, NWP # 33 - Temporary Construction, Access, and Dewatering.

This BO is based on information provided in the April 4, 2014, "Programmatic Section 7 Biological Assessment for Selected Nationwide Permits Impacting the Topeka shiner (*Notropis topeka*) in South Dakota" (BA); an August 11, 2008 "Programmatic Biological Opinion – Stream-Crossing Projects Administered/Funded by the South Dakota Department of Transportation and the Federal Highway Administration"; and other sources of information available in our files. Complete administrative records for the current consultation are available in our office.

Consultation History

In South Dakota formal Section 7 consultations initiated by the Corps of Engineers South Dakota Regulatory Office (Corps) have generally been limited to road crossing and minor bank stabilization projects being conducted by county highway departments. These projects are

typically permitted under a Corps NWP. Formal Section 7 consultations for these types of actions are generally limited to evaluating impacts to the federally endangered Topeka shiner. The Corps has recently observed an increase in the number of permit requests for the repair and upgrade of rural transportation infrastructure where the Corps acts a lead federal agency. Recent coordination with several county highway departments has indicated that demand for bridge and culvert repair exceeds available federal funding indicating the lack of federal funds means the Federal Highway Administration is unlikely to be the lead federal agency. Therefore, the Corps may become the lead federal agency as counties replace/repair existing road crossings on Topeka shiner streams.

Currently, formal consultations between the Corps and Service occur on an individual basis and usually require 90 to 135 days to complete. Most formal consultations to date have evaluated actions of a similar scope in terms of the type of work and effect on the Topeka shiner. Reasonable and Prudent Measures identified by the Service in individual Biological Opinions (BO) that are similar across actions, can be expedited by a programmatic BO for similar actions that do not rise to the level of jeopardizing a listed species either individually or cumulatively.

Internal Corps performance measures require that 75% of General Permit decisions be issued within 60 days of the receipt of a complete application. General permit actions requiring formal Section 7 consultation generally exceed this 60 day performance standard. The purpose of this consultation is to develop a framework for the evaluation of similar projects that affect the Topeka shiner. The intent of this Programmatic BO is to reduce the workload of all agencies involved, streamline the permitting process, and provide more efficient use of government time and funding while maintaining a high level of resource protection and compliance with the Endangered Species Act.

An April 4, 2014, request by your office for formal consultation on the BA was received by our office on April 4, 2014. We responded on May 2, 2014, indicating that we had received a complete initiation package and outlined the time frames for this consultation. Following receipt of the BA additional discussions between the Corps and the Service resulted in NWP #13 – Bank Stabilization being excluded from the action as originally proposed. Further discussion and analysis may occur in the future to amend this BO to include NWP #13.

Programmatic Consultation Approach

In accordance with section 7(a)(2) of the ESA, each federal agency must ensure that any proposed action authorized, funded or carried out by their agency does not jeopardize the continued existence of any federally listed species or result in the adverse modification of any designated critical habitat. To efficiently address section 7(a)(2) and to expedite the process for project approval, we are conducting a section 7 programmatic consultation with the Corps for streamlining specific NWP consultations that might occur in Topeka shiner streams.

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BIOLOGICAL OPINION

Description of the Proposed Action

The proposed action is the issuance of selected NWP by the Corps as detailed in Table 1 and the following descriptions. These permits are also subject to the conditions contained in [Appendix 1](#) – General Conditions and [Appendix 2](#) – South Dakota Regional Conditions. All projects that may be considered for consultation under this BO must meet the work type description for the applicable NWP and fall below established impact thresholds without waivers.

Table 1. General description and impact threshold for Nationwide Permits included in this BA. Actions which require a waiver from the district engineer are not eligible for consideration under this BA. Impact thresholds discussed in this table are in terms of stream channel impacts. All NWPs listed allow up to 0.5 acres of permanent wetland fill. Permanent wetland fills exceeding 0.1 acres require compensatory mitigation.

Permit	General Description of Typical Work	Impact threshold
NWP 3 - Maintenance	Repair and rehabilitation of existing structures with minor modifications.	Footprint of the existing structure and 100 linear feet upstream and downstream of the existing footprint for the purpose of adding bank stabilization and channel maintenance.
NWP 12 – Utility Line Activities	Trench and backfill installation of utilities and construction of utility infrastructure such as tower footings or utility pads.	Five hundred linear feet of permanent impact to the stream channel. Temporary impacts may not exceed 180 days and locations temporarily impacted shall be restored to pre-disturbance condition.
NWP 14 – Linear Transportation Projects	Stream crossing replacement and minor channel realignment.	Permanent stream channel impacts may not exceed 500 linear feet in length. Culvert length may not exceed 200 linear feet.
NWP 33 – Temporary Construction, Access, and Dewatering	Temporary work pads or stream crossings	Temporary fill placement may not exceed 180 days and the site shall be restored to pre-disturbance condition.

NWP # 3 – Maintenance. a) The repair, rehabilitation, or replacement of any previously authorized, currently serviceable structure, or fill, or of any currently serviceable structure or fill authorized by 33 CFR 330.3, provided that the structure or fill is not to be put to uses differing from those uses specified or contemplated for it in the original permit or the most recently

authorized modification. Minor deviations in the structure's configuration or filled area, including those due to changes in materials, construction techniques, requirements of other regulatory agencies, or current construction codes or safety standards that are necessary to make the repair, rehabilitation, or replacement are authorized. Any stream channel modification is limited to the minimum necessary for the repair, rehabilitation, or replacement of the structure or fill; such modifications, including the removal of material from the stream channel, must be immediately adjacent to the project or within the boundaries of the structure or fill. This NWP also authorizes the repair, rehabilitation, or replacement of those structures or fills destroyed or damaged by storms, floods, fire or other discrete events; provided the repair, rehabilitation, or replacement is commenced, or is under contract to commence, within two years of the date of their destruction or damage. In cases of catastrophic events, such as hurricanes or tornadoes, this two-year limit may be waived by the district engineer, provided the permittee can demonstrate funding, contract, or other similar delays.

(b) This NWP also authorizes the removal of accumulated sediments and debris in the vicinity of existing structures (e.g., bridges, culverted road crossings, water intake structures, etc.) and/or the placement of new or additional riprap to protect the structure. The removal of sediment is limited to the minimum necessary to restore the waterway in the vicinity of the structure to the approximate dimensions that existed when the structure was built, but cannot extend farther than 200 feet in any direction from the structure. This 200 foot limit does not apply to maintenance dredging to remove accumulated sediments blocking or restricting outfall and intake structures or to maintenance dredging to remove accumulated sediments from canals associated with outfall and intake structures. All dredged or excavated materials must be deposited and retained in an area that has no waters of the United States unless otherwise specifically approved by the district engineer under separate authorization. The placement of new or additional riprap must be the minimum necessary to protect the structure or to ensure the safety of the structure. Any bank stabilization measures not directly associated with the structure will require a separate authorization from the district engineer.

(c) This NWP also authorizes temporary structures, fills, and work necessary to conduct the maintenance activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials and be placed in a manner that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

(d) This NWP does not authorize maintenance dredging for the primary purpose of navigation. This NWP does not authorize beach restoration. This NWP does not authorize new stream channelization or stream relocation projects.

Notification: For activities authorized by paragraph (b) of this NWP, the permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. The pre-construction notification must include information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.

Note: This NWP authorizes the repair, rehabilitation, or replacement of any previously authorized structure or fill that does not qualify for the Clean Water Act Section 404(f) exemption for maintenance.

NWP # 12 - Utility Line Activities.

Utility lines: This NWP authorizes the construction, maintenance, or repair of utility lines, including outfall and intake structures, and the associated excavation, backfill, or bedding for the utility lines, in all waters of the United States, provided there is no change in pre-construction contours. A “utility line” is defined as any pipe or pipeline for the transportation of any gaseous, liquid, liquescent, or slurry substance, for any purpose, and any cable, line, or wire for the transmission for any purpose of electrical energy, telephone, and telegraph messages, and radio and television communication. The term “utility line” does not include activities that drain a water of the United States, such as drainage tile or french drains, but it does apply to pipes conveying drainage from another area.

Material resulting from trench excavation may be temporarily sidecast into waters of the United States for no more than three months, provided the material is not placed in such a manner that it is dispersed by currents or other forces. The district engineer may extend the period of temporary side casting for no more than a total of 180 days, where appropriate. In wetlands, the top 6 to 12 inches of the trench should normally be backfilled with topsoil from the trench. The trench cannot be constructed or backfilled in such a manner as to drain waters of the United States (e.g., backfilling with extensive gravel layers, creating a french drain effect). Any exposed slopes and stream banks must be stabilized immediately upon completion of the utility line crossing of each waterbody.

Utility line substations: This NWP authorizes the construction, maintenance, or expansion of substation facilities associated with a power line or utility line in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not result in the loss of greater than 1/2-acre of waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters of the United States to construct, maintain, or expand substation facilities.

Foundations for overhead utility line towers, poles, and anchors: This NWP authorizes the construction or maintenance of foundations for overhead utility line towers, poles, and anchors in all waters of the United States, provided the foundations are the minimum size necessary and separate footings for each tower leg (rather than a larger single pad) are used where feasible.

Access roads: This NWP authorizes the construction of access roads for the construction and maintenance of utility lines, including overhead power lines and utility line substations, in non-tidal waters of the United States, provided the activity, in combination with all other activities included in one single and complete project, does not cause the loss of greater than 1/2-acre of non-tidal waters of the United States. This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters for access roads. Access roads must be the minimum width necessary (see Note 2, below). Access roads must be constructed so that the length of the road minimizes any adverse effects on waters of the United States and must be as near as possible to

pre-construction contours and elevations (e.g., at grade corduroy roads or geotextile/gravel roads). Access roads constructed above pre-construction contours and elevations in waters of the United States must be properly bridged or culverted to maintain surface flows.

This NWP may authorize utility lines in or affecting navigable waters of the United States even if there is no associated discharge of dredged or fill material (See 33 CFR Part 322). Overhead utility lines constructed over section 10 waters and utility lines that are routed in or under Section 10 waters without a discharge of dredged or fill material require a Section 10 permit.

This NWP also authorizes temporary structures, fills, and work necessary to conduct the utility line activity. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials and be placed in a manner that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate. (Sections 10 and 404)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if any of the following criteria are met: (1) the activity involves mechanized land clearing in a forested wetland for the utility line right-of-way; (2) a Section 10 permit is required; (3) the utility line in waters of the United States, excluding overhead lines, exceeds 500 feet; (4) the utility line is placed within a jurisdictional area (i.e., water of the United States), and it runs parallel to or along a stream bed that is within that jurisdictional area; (5) discharges that result in the loss of greater than 1/10-acre of waters of the United States; (6) permanent access roads are constructed above grade in waters of the United States for a distance of more than 500 feet; or (7) permanent access roads are constructed in waters of the United States with impervious materials.

Note 1: Where the proposed utility line is constructed or installed in navigable waters of the United States (i.e., Section 10 waters) within the coastal United States, the Great Lakes, and United States territories, copies of the pre-construction notification and NWP verification will be sent by the Corps to the National Oceanic and Atmospheric Administration (NOAA), National Ocean Service (NOS), for charting the utility line to protect navigation.

Note 2: Access roads used for both construction and maintenance may be authorized, provided they meet the terms and conditions of this NWP. Access roads used solely for construction of the utility line must be removed upon completion of the work in accordance with the requirements for temporary fills.

Note 3: Pipes or pipelines used to transport gaseous, liquid, liquescent, or slurry substances over navigable waters of the United States are considered to be bridges, not utility lines, and may require a permit from the U.S. Coast Guard pursuant to Section 9 of the Rivers and Harbors Act of 1899. However, any discharges of dredged or fill material into waters of the United States associated with such pipelines will require a Section 404 permit (see NWP 15).

Note 4: For overhead utility lines authorized by this NWP, a copy of the PCN and NWP verification will be provided to the Department of Defense Siting Clearinghouse, which will evaluate potential effects on military activities.

NWP # 14. Linear Transportation Projects. Activities required for the construction, expansion, modification, or improvement of linear transportation projects (e.g., roads, highways, railways, trails, airport runways, and taxiways) in waters of the United States. For linear transportation projects in non-tidal waters, the discharge cannot cause the loss of greater than 1/2-acre of waters of the United States. For linear transportation projects in tidal waters, the discharge cannot cause the loss of greater than 1/3-acre of waters of the United States. Any stream channel modification, including bank stabilization, is limited to the minimum necessary to construct or protect the linear transportation project; such modifications must be in the immediate vicinity of the project.

This NWP also authorizes temporary structures, fills, and work necessary to construct the linear transportation project. Appropriate measures must be taken to maintain normal downstream flows and minimize flooding to the maximum extent practicable, when temporary structures, work, and discharges, including cofferdams, are necessary for construction activities, access fills, or dewatering of construction sites. Temporary fills must consist of materials and be placed in a manner that will not be eroded by expected high flows. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The areas affected by temporary fills must be revegetated, as appropriate.

This NWP cannot be used to authorize non-linear features commonly associated with transportation projects, such as vehicle maintenance or storage buildings, parking lots, train stations, or aircraft hangars.

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if: (1) the loss of waters of the United States exceeds 1/10-acre; or (2) there is a discharge in a special aquatic site, including wetlands.

Note: Some discharges for the construction of farm roads or forest roads, or temporary roads for moving mining equipment, may qualify for an exemption under Section 404(f) of the Clean Water Act (see 33 CFR 323.4).

NWP # 33. Temporary Construction, Access, and Dewatering. Temporary structures, work, and discharges, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard. This NWP also authorizes temporary structures, work, and discharges, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must consist of materials and be placed in a manner that will not be eroded by expected high flows. The use of dredged material may be allowed if the district engineer determines that it will not cause more than minimal adverse effects on aquatic resources. Following completion of

construction, temporary fill must be entirely removed to an area that has no waters of the United States, dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations. The affected areas must also be revegetated, as appropriate. This permit does not authorize the use of cofferdams to dewater wetlands or other aquatic areas to change their use. Structures left in place after construction is completed require a separate Section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322.)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity. The pre-construction notification must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.

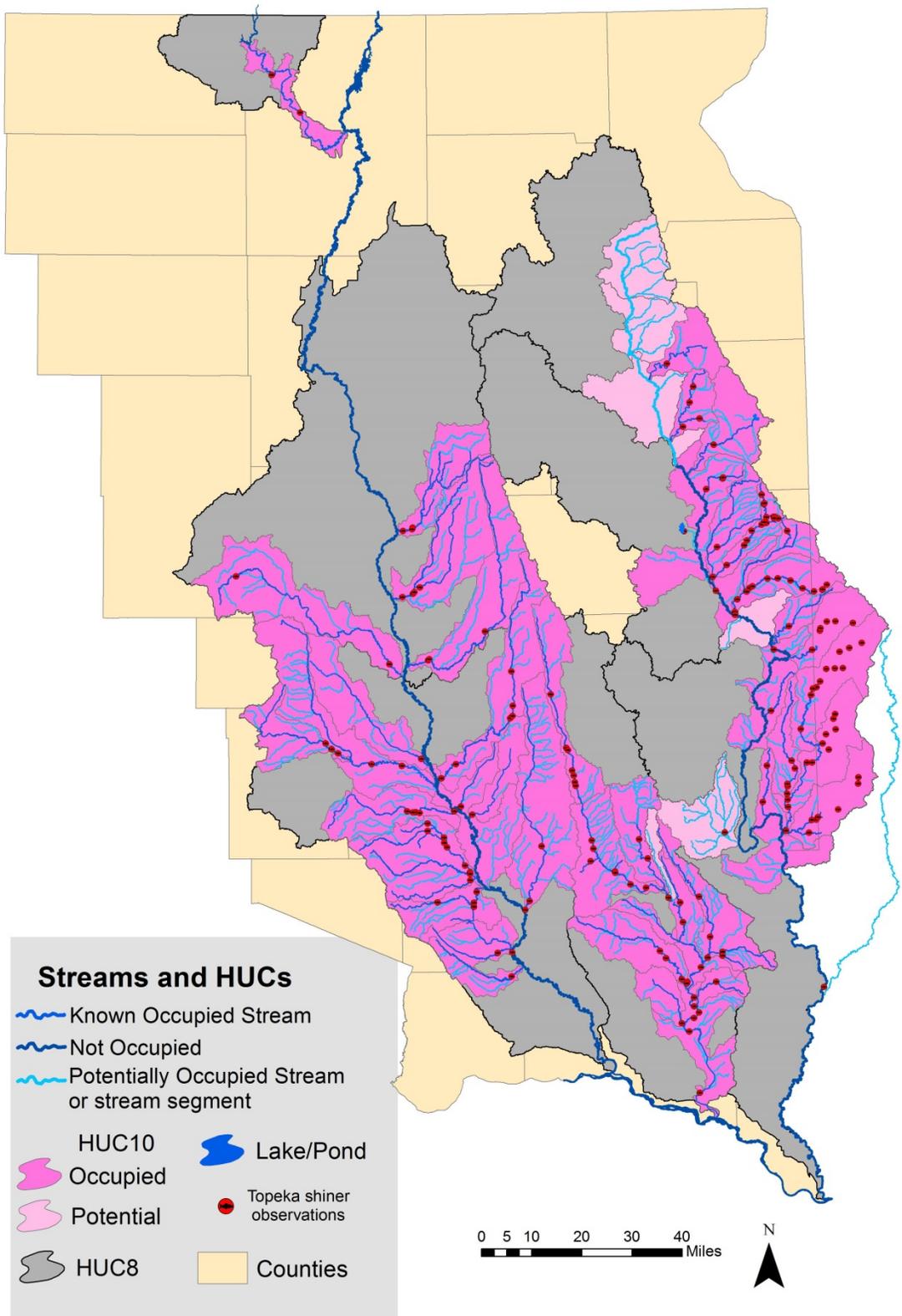
Action Area

<p><u>Action Area</u> - All areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR § 402.02).</p>

The BA defines the action area as the entire James River, Vermillion River, and Big Sioux River basins within the state boundaries. However the Topeka shiner is not presently known to exist throughout the entirety of the James and Big Sioux River systems. Therefore in order to better quantify the effects of the action we found it necessary to clearly define the action area. Our approach was to define the action area by using the multi-level Hydrologic Units (HU) contained in the U. S. Geological Survey's Watershed Boundary Dataset together with known Topeka shiner observations and the Wall et al (2001) model for probability of presence.

First we eliminated any 8-digit HU without a known Topeka shiner presence and then selected the 10-digit HU within those 8-digit HU which contained at least one Topeka shiner observation. Finally, we added six potentially occupied 10-digit HU, three found in the Upper Big Sioux Basin that included the headwaters of the Big Sioux River, one in the Middle Big Sioux Basin encompassing the Big Sioux River with Topeka shiner observations immediately upstream and downstream in the Big Sioux mainstem, one with a historical record (after 1999), and one within the Vermillion 8-digit HU in close proximity to other observations. Using this approach we defined the action area to consist of 49 10-digit HU, including the six without a portion of a known occupied stream. This area includes approximately 2,250 miles of known occupied stream segments. Our analysis is based upon the potential impacts to listed species for the reasons that will be explained and discussed in the "Effects of the Action" section of this consultation.

Topeka shiner Action Area



STATUS OF THE SPECIES

Status of the Species - An analysis of appropriate information on the species' life history, habitat, distribution, and other data on factors related to its survival and recovery. This analysis considers the effects of past human and natural activities or events that have led to the current condition of the species. This information is usually presented in listing documents and refined in recovery plans (Endangered Species Consultation Handbook 1998).

The Topeka shiner is a small pool-dwelling minnow that is found in low order prairie streams of the middle and lower Missouri River Basin and upper Mississippi River Basin. The range of this fish covers portions of South Dakota, Minnesota, Nebraska, Iowa, Kansas, and Missouri (Bailey and Allum 1962; USFWS 1998; Blausey 2001).

Effective January 14, 1999, the Service listed the Topeka shiner as an endangered species pursuant to the ESA of 1973 (USFWS 1998). Critical habitat for the Topeka shiner was listed on July 27, 2004, but no critical habitat was designated in South Dakota (USFWS 2004). On December 8, 2004, the Service published a Notice of Review in the Federal Register (69 FR 71071) initiating a five-year review which was completed in December 2009.

Among the six states within the Topeka shiner's range, South Dakota contains the greatest number of known occupied streams and stream miles (USFWS 2009). The Topeka shiner is known to occupy all three watersheds in South Dakota where it had historically been documented: the James River, Vermillion River, and the Big Sioux River watersheds. The number of known occupied waterways has increased significantly since the Topeka shiner was listed, due primarily to an increase in surveys and sampling. The number of known and presumed occupied streams in South Dakota has changed from 11 in 1998 (USFWS 1998) to 65 in 2014 as a result of efforts to document the species.

Conservation needs of the species in South Dakota include sustaining/restoring the natural hydrology, morphology, chemical characteristics, and native biological components typical of prairie streams. Further information on Topeka shiner biology and life history can be found in the "Literature Cited" section at the end of this BO.

ENVIRONMENTAL BASELINE

Environmental Baseline - The past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early Section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50 CFR § 402.02).

Wetland drainage and grassland conversion in the Prairie Pothole Region of South Dakota began in the 1860's as lands began to be converted to agricultural production, primarily to grow wheat. The advent of modern mechanized farm equipment in the early to mid-1900s increased the pace of wetland drainage. Significant wetland loss occurred during the first half of the twentieth century in South Dakota. Wetland drainage intensified and continued into the late 1900s largely encouraged by United States Government incentives such as cost sharing and engineering assistance. Wetland drainage slowed in the 1980's with the passing of the Clean Water Act and

introduction of wetland conservation provisions in the Food Security Act (Johnson and Higgins 1997; Dahl 2011). Modern wetland and grassland losses are largely tied to the expansion of row crop agriculture. High present day commodity prices and new agricultural technologies are increasing the rate at which grassland is converted to corn and soybean acreage (Wright and Wimberly 2013). The current annual rate of wetland loss in the eastern Dakotas is estimated to be 0.3 percent/year (Johnston 2013). The estimated annual rate of native grassland conversion is estimated to be 0.4 percent/year (Stephens et al. 2008). Local rates of grassland to crop land conversion may be as high as 5.4 percent/year (Wright and Wimberly 2013). It is likely that grassland and wetland loss will continue into the future in association with agricultural actions which are not subject to federal regulation (i.e., Section 404 of the CWA). It is also reasonably certain that continued loss of grassland and Prairie Pothole Wetlands will have an indirect and negative effect on the Topeka shiner; however, the magnitude of affect is uncertain.

Stream channel modifications such as channelization and dam construction have likely caused a decline in the Topeka shiners distribution in South Dakota. Historic stream channelization is not as wide spread in South Dakota as it is in neighboring states. The highest densities of channelized stream reaches occur in the central James River Lowland and Big Sioux River Valley (Johnson and Higgins 1997). The majority of these channelized reaches occur in headwater linear and wetland systems which do not represent Topeka shiner habitat; however, it is likely that regions of intensive headwater drainage negatively affect the structure and function of downstream reaches occupied by the Topeka shiner. Channelization of large well defined creeks is less common; however, several large historic drainage projects have channelized extensive reaches of intermittent stream channel. Clay Creek is a prominent example of an intermittent channel that has been extensively channelized. The Topeka shiner is not known to occur in Clay Creek despite the species being collected from watersheds in close proximity to Clay Creek.

Most stream channelization activities in South Dakota occurred before the passage of the CWA. A review of recent Section 404 permit actions suggests that stream channelization projects in streams occupied by the Topeka shiner are relatively rare. In the past five years the Corps has undergone one formal and one informal consultation for minor channelization projects that were “Likely to Adversely Affect” the Topeka shiner.

Dams and reservoirs within the Topeka shiners range have likely resulted in a decrease in the species historic distribution. A notable example is the absence of the Topeka shiner upstream of Lake Vermillion which is a reservoir located on the East Fork of the Vermillion River (Morey 2007). Although dams and reservoirs have likely influenced the distribution of the Topeka shiner in South Dakota, they are not wide spread. Furthermore, it is unlikely that significant new dam and reservoir construction will occur in the foreseeable future but restoration of breached dams that have failed is likely. No new dam construction projects affecting the Topeka shiner have been permitted under Section 404 recently (e.g., five years). A dam restoration project on Sand Creek was permitted by the Corps in 2014; however, this project did not involve the construction of a new dam structure and did not expand habitat impacts beyond levels which existed prior to the dam failure and the project underwent formal Section 7 consultation. Any future dam construction proposals would be subject to regulation under Section 404 of the CWA and impacts to the Topeka shiner would be reviewed at the time of permit review. We

understand the programmatic BA and subsequent BO is not intended to cover new dams or restoration of breached dams on Topeka shiner streams.

It is likely that the development of transportation infrastructure within the Topeka shiners range has had some negative effect on the species. An extensive rural road network exists throughout most of the Topeka shiners range. This network of roads largely corresponds to delineated section lines and exists for the purpose of human movement and farm to market transportation. High road densities can increase surface drainage into streams by capturing and transferring runoff to streams through road ditches. Road ditches are also commonly used as an outlet for both agricultural and urban storm water drainage. Section 404 permit actions associated with transportation infrastructure in South Dakota deal nearly exclusively with the maintenance and improvement of existing infrastructure. Very few Section 404 permit requests include the construction of new roadways.

A large number of road crossings are present over streams occupied by the Topeka shiner. Stream crossings can negatively impact the Topeka shiner if natural stream processes are disrupted to the extent that physical habitat or fish movement are negatively influenced (Bouska et al 2010; Morey 2008). Wall and Berry (2002) inventoried potential barriers to fish movement on streams inhabited by the Topeka shiner and found that severe barriers are present but not widespread. Several barriers identified in this culvert inventory have been replaced with fish passable structures in recent years. It is reasonable to assume that the Topeka shiner has historically been negatively impacted by culvert barriers; however, it is not likely that culvert barriers have resulted in a significant decline in occupied range of the Topeka shiner in South Dakota. Further, we believe newer transportation projects consider fish passage on road crossings and design projects to accommodate Topeka shiner movement on most or many of the federal aid roads.

EFFECTS OF THE ACTION

As previously noted, the Topeka shiner is not found throughout the action area as defined in the BA but in certain streams. Therefore, we determined the action area should only include those 10-digit HU where effects from habitat fragmentation, habitat modification, mortality, and disturbance are likely to occur. Based upon Wall et al. (2001) and Warren and Pardew (1998), we determined that the effects of the stream hydrology modifications permitted by the Corps and therefore effects to the Topeka shiner should be insignificant outside the 10-digit HU. We also note that with very few exceptions the entire area we excluded from the action area and our analysis has been highly modified through land and drainage modifications resulting in major changes in hydrology and potentially lack of Topeka shiner presence since surveys have yet to document the species in those areas.

Transportation and utility projects may impact the Topeka shiner by causing: 1) habitat fragmentation; 2) habitat modification; 3) mortality of individual fish, larvae or eggs; and 4) disturbance to normal behavior of fish (Spellerberg 1998; Trombulak and Frissell 2000; Bekker

and Leull 2003). The following is an analysis of the potential impacts of this programmatic action on the Topeka shiner.

A) HABITAT FRAGMENTATION

Impacts from habitat fragmentation could include decreased connectivity of important habitat types or decreased habitat patch size. Biological impacts of habitat fragmentation could include decreased movement, reproductive success, and genetic viability. Habitat fragmentation is widely recognized as the most significant potential impact that culvert stream crossings may have on ecosystems (Spellerberg 1998; Trombulak and Frissell 2000; Bekker and Leull 2003). Recent research indicates that Topeka shiner movement through road crossings is related to culvert slope, culvert length, perching, and culvert width (Bouska and Paukert 2009; Blank et al. 2011). It is anticipated that culvert designs that do not alter normal stream geomorphic functions (i.e., span the bankfull channel and are countersunk) will have minimal impact on Topeka shiner movements (Blank et al. 2011).

It is not anticipated that actions permitted under the above mentioned NWP's will fragment Topeka shiner habitat. General Condition #2 of the NWP's prohibits the authorization of activities that "substantially disrupt the necessary life cycle movements of those species that normally migrate through the area unless the activity's purpose is to impound water." Projects with the purpose of impounding water are not considered under this BO. The South Dakota Regional Conditions for NWP's require that culvert crossings be sized (i.e., culvert width and height) and countersunk in a manner that minimizes the culverts effect on normal stream function. Recent research suggests that properly designed culverts, particularly box culverts, have minimal impact on Topeka shiner movements (Bouska et al. 2010; Blank et al. 2011). It is anticipated that if normal geomorphic processes are maintained within permitted culverts the Topeka shiner would not be adversely impacted due to habitat fragmentation.

B) HABITAT MODIFICATION

Transportation and utility line projects can impact the Topeka shiner through the direct loss of habitat within the construction footprint, by discharging sediment or other pollutants that could impact downstream habitats, or by altering normal geomorphic processes that could cause habitat modifications upstream or downstream of the project footprint. Stream crossings that restrict stream flow can result in sediment deposition upstream of the crossing (Bouska et al. 2010). Sediment deposition upstream of poorly designed culverts can be severe enough to degrade habitat quality and decrease species richness (South Dakota Department of Transportation, Unpublished Data).

South Dakota Regional General Conditions relating to culvert invert depth and culvert width are likely to ensure normal geomorphic processes such as sediment transport and channel formation to occur within permitted culverts. Impacts to Topeka shiner habitat resulting from actions included in this BO are expected to be limited to direct impacts associated with the construction of new culverts or bank stabilization sites. It is anticipated that direct habitat impacts will be on a small scale. Individual projects may impact up to up to 200 linear feet for new culvert installations. It is not anticipated that significant cumulative effects would result from actions

considered under this BO. Individual actions will have a small direct footprint and multiple projects are not expected to be concentrated in a small geographic area. In the case of transportation projects, most of the stream crossings already exist in the Topeka shiner streams and as structures are replaced through use of this BO, fish passage should be ensured through project design, implementation and monitoring. Actions causing temporary habitat impacts, such as construction access crossings and work pads are not expected to have a significant long-term impact to Topeka shiner habitat.

It is not anticipated that actions evaluated under this BO will adversely impact stream habitat due to the discharge of suspended sediments from active construction sites. General condition #12 of the NWP requires that “soil erosion and sediment controls must be used and maintained” during construction and that disturbed area be stabilized at the “earliest practicable date”. The BA states that “most projects considered under this BA would be constructed under periods of low or zero discharge”.

C) DIRECT MORTALITY

Some mortality of Topeka shiners may occur within the work limits of actions which require stream dewatering as part of the construction process. Isolating and dewatering a section of stream is often required for the construction of culverts, bridge abutments, trench and backfill utility crossings, and other similar projects. It is anticipated that Topeka shiners would avoid many dewatering sites especially dewatering operations which are located in shallow water either along the stream margin or in stream riffles. Topeka shiners would most likely be trapped within dewatering areas which include pool habitat. Topeka shiners are frequently found in scour holes located underneath bridge stream crossings. Projects replacing old bridges with culvert structures can result in Topeka shiner mortality since the construction of the new culvert may require dewatering, moving fish, and filling of the old scour pool. High densities of fish, including Topeka shiners, can be found in bridge scour pools and that is one reason efforts are to be made to move fish trapped in these pools and place in the adjacent stream prior to construction (SDDOT 2005; SDDOT 2006). However, few actual fish mortalities and no Topeka shiner mortalities at road crossing projects monitored by the South Dakota Department of Transportation have been reported but they also move fish out of construction sites when working on Topeka shiner streams.

Adult and juvenile Topeka shiner mortality resulting from dewatering at construction sites is expected to vary greatly between sites and is expected to be controlled by ambient fish density and habitat type impacted and efforts made to move fish. Wall and Berry (2001) report Topeka shiner catch per Unit Area ([CPUA] fish per 100 m²) range from 0.2 to 58.6 individuals. The South Dakota Department of Transportation (2005 and 2006) reported adult and juvenile Topeka shiner densities at dewatering sites which range from 0 to several hundred individuals. Therefore, direct mortality of adult and juvenile Topeka shiners could range between zero fish to several hundred at individual project sites if no efforts are undertaken to move fish from construction sites. Mortality of Topeka shiner eggs and larval fish may occur at some construction sites where active work is occurring during the summer months; however, efforts to move fish prior to construction and excluding fish during construction should minimize the number of adult and juvenile fish that may experience mortality at construction sites. Due to the

inability to effectively sample fish larva and eggs an estimate of mortality cannot be made with any accuracy.

It is not expected that mortality of Topeka shiners would occur outside of the work area since all physical alterations to the stream channel will be limited to the enclosed work area. It is expected that the potential for the discharge of suspended sediments would be limited to the installation and removal of the temporary water barriers which enclose the work area during active construction. It is expected that this barrier can be installed in a short period (i.e., several hours) with minimal disturbance of the stream bank. Turbidity readings taken during the installation and removal of temporary water barriers at SDDOT stream crossing projects range from 0 to 300 Nephelometric Turbidity Units (NTU) and are dependent on stream size and substrate composition (SDDOT, unpublished data). The duration and intensity of sediment discharges observed at SDDOT stream crossing projects is well below levels that may cause mortality in fishes. Stream fishes are very resilient to short term sediment discharges. Newcombe and Jensen (1996) predicted that suspended sediment levels would need to exceed 2981 mg/l for at least a 24 hour period to cause mortality of adult warm water stream fishes. Any sediment discharges that may occur during the installation and removal of the temporary water barrier during the construction of this stream crossing are expected to be well below levels of intensity and duration that could result in fish mortality (Newcombe and Jensen 1996).

D) DISTURBANCE

It is expected that some disturbance to normal Topeka shiner behavior will occur in close proximity to the project work area during the installation of this stream crossing. It is expected that fishes will avoid habitat immediately adjacent to the area of active construction during periods of construction activity causing physical disturbance to the stream channel or activity that generate noise or vibrations. The impacts of disturbance are not expected to have any quantifiable impact on the Topeka shiner populations at any meaningful biological scale (i.e., reduced body condition).

The characteristics of the streams, the size and frequency of future storm events in the action area, and the inability to measure effects until after projects are complete requires that we make some assumptions about the ultimate degree of impact

CUMULATIVE EFFECTS

Cumulative Effects - Those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation (50 CFR § 402.02). This definition applies only to Section 7 analyses and should not be confused with the broader use of this term in the National Environmental Policy Act or other environmental laws. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to Section 7 of the ESA (USFWS and NMFS 1998).

For the purpose of analyzing the potential cumulative effects of the proposed BA the Corps evaluated all formal consultations completed in the 2009 through 2013. Twelve formal consultations with the Service were completed in this time. Eleven of the consultations were for

NWP 14 (Linear Transportation Projects) actions and one consultation was for a NWP 40 (Agricultural Activities) action (Table 2). The average stream length impacted by these actions was 160 linear ft. (range = 40 to 350 linear ft.).

It is expected that NWP actions “adversely affecting” the Topeka shiner will increase in the future largely due to an increase of county funded bridge and culvert replacement projects. The volume of anticipated NWP actions “adversely affecting” the Topeka shiner is not known; however, conversations with several county highway departments by the Corps suggest that five to fifteen actions could be expected on an annual basis. The cumulative effect of actions considered under this BO is not expected to have significant impacts on the Topeka shiner if the established measures to ensure fish passage and other permit conditions are followed.

Assuming the average action considered under this BO will impact 160 linear ft. of stream channel between 800 linear ft. and 2,400 linear ft. of stream channel would be impacted on an annual basis. This represents a small portion of the approximately 2,250 miles (or 11.8 million linear feet) of known occupied stream segments. Furthermore, it is expected these actions will not result in a significant decrease in Topeka shiner population size and distribution because measures to ensure continued fish passage after construction are incorporated into the design.

The BA contained a review of past formal Section 7 consultations between the Corps and the Service for NWP actions between 2009 and present and suggest that the projects may have little individual or cumulative effect on the Topeka shiner. However, the expected increase in new stream crossing structures and replacements of existing structures, as indicated in the BA, could lead to an increase in the cumulative effects per stream. Past impacts to the Topeka shiner are limited to the possible mortality of individual fish during the construction phase of the project and the potential loss of some stream habitat associated with the new construction footprint which in the case of culvert replacement may be similar to that being replaced.

It is reasonable to anticipate that continued effects of the present agricultural activities within the uplands surrounding the action area will likely be detrimental to the water quality. Wetland drainage through subsurface tiling and surface drains has become more prevalent in recent years in eastern South Dakota and potentially could be installed in areas surrounding the action area with drainage water discharged into the streams in the action area. Additionally, subsurface tiling can add contaminants to the streams, such as neonicotinoids which have been found in tile outlets and selenium which occurs naturally in the soil but is mobilized by tile. Tile also affects the amount and timing of stream flows, potentially modifying base flows, perhaps leading to incision and loss of pool habitats (Blann et al. 2009, Hubbard 2011). Other agricultural activities that could affect the Topeka shiner may include continued grassland conversion to cropland, grazing practices that reduce or eliminate riparian buffers, livestock dugout construction in or adjacent to the action area, effluent from feedlots adjacent to the action area, application of pesticides or herbicides, increased sedimentation as a result of agricultural activities, and unpermitted low water crossings.

CONCLUSION REGARDING JEOPARDY

<p>Jeopardize the <u>Continued Existence of</u> - To engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and <u>recovery</u> of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species (50 CFR § 402.02).</p>

Recovery - Improvement in the status of listed species to the point at which listing is no longer appropriate under the criteria set out in section 4(a) (1) of the ESA (50 CFR § 402.02).

After reviewing the current status of the Topeka shiner, the environmental baseline for the action area, the potential effects of modifying the hydrology of the streams, and the anticipated cumulative effects, it is our biological opinion that the action, as proposed, is not likely to jeopardize the continued existence of the Topeka shiner.

This conclusion was reached primarily because any reduction in the Topeka shiner populations in the action area as a result of the proposed actions are anticipated to be only temporary and small scale and are not expected to push the species toward extinction. Also, the recent past indicates that perhaps 5-15 of these projects might be constructed annually on Topeka shiner streams. Since the scale of projects are small and diffuse across the range of the species in South Dakota the impacts to Topeka shiners in the action area are anticipated to be minor even when considered cumulatively. We believe the permit conditions included in the issuance of these NWP's and identified in appendix 2 will minimize changes to widespread stream hydrology and morphology and the design of stream crossing structures are anticipated to allow continued Topeka shiner passage. Further, when new road crossings structures are installed that enable fish passage are used to replace existing perched road crossing culverts that impeded fish passage there could be benefits to stream fishes from replacement of the structure.

No critical habitat has been designated for this species in South Dakota; therefore, none will be affected.

INCIDENTAL TAKE STATEMENT

Incidental Take - A taking that results from, but is not the purpose of, carrying out an otherwise lawful activity conducted by the Federal agency or applicant (50 CFR § 402.02).

Take - To harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (16 U.S.C. § 1531 et seq.).

Introduction

Section 9 of the ESA and Federal regulation pursuant to section 4(d) of the ESA prohibits the take of endangered and threatened species, respectively, without special exemption. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the ESA, provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below as reasonable and prudent measures (RPM) and associated terms and conditions are non-discretionary and must be undertaken by the Corps so that they become binding conditions of the permit issued regarding the proposed project for the exemption in

Section 7(o)(2) to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Corps (1) fails to assume and implement the terms and conditions or (2) fails to require the applicant to adhere to the terms and conditions of the Incidental Take Statement through enforceable terms that are added to the permit document, the protective coverage of Section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the Corps must report the progress of the action and its impact on the species to the Service as specified in the Incidental Take Statement (50 CFR § 402.14(i)(3)).

Amount or Extent of Take Anticipated

We anticipate that incidental take of the Topeka shiner will be difficult to detect because the Topeka shiner is an aquatic species, and finding dead or impaired specimens is unlikely. We anticipate that the number of individuals incidentally taken under this BO will vary by location and type of activity. Incidental take monitoring of Topeka shiners at other road crossing structure replacement projects conducted by the South Dakota Department of Transportation over the last ten years indicates that fish are rarely reported killed during construction and to date no Topeka shiners mortalities have been reported. Further, some of the proposed actions may result in incidental take mostly when fish are moved out of the construction zone, while other projects may result in no take. Take is likely to be in the form of capture, harm and harassment, and result in both temporary and permanent effects, and possibly some mortality of adults, juveniles, larvae and/or eggs. Therefore, it is difficult to predict an exact number of individuals likely to be taken per individual project or in totality under this consultation. However, we do not anticipate exceeding 25 Topeka shiner mortalities per project, depending upon presence or absence of individuals within the construction zones.

It is not possible to estimate with accuracy the number of eggs and/or larval Topeka shiners that may occur within project areas but given the small footprint of the construction zone relative to the existing stream length we do not believe the loss of eggs or larval fish at a construction site will be large. As noted previously, seasonal egg production from individual Topeka shiners is known (documented under controlled conditions) to range from 140 to 1,712 (Kerns 1983 in Hatch 2001), with averages documented at 261-284 in the northern part of its range (Minnesota) (Hatch 2001). Determining the number of eggs spawned at locations in the field would be extremely difficult. Despite the inability to quantify this level of take, however, the Topeka shiner's r-selected life history strategy likely renders the effects of occasional construction-induced mortality insignificant at any meaningful ecological scale. Construction activities causing disturbance are expected to be short term (i.e., weeks to several months) and impart minimal or no effects on Topeka shiner distribution/abundance.

Similarly, the true number of Topeka shiners that may be impacted by disturbance and sedimentation outside the project construction zone cannot be determined with accuracy. Disturbances causing individual fish to avoid the area would be very difficult to ascertain, but any effects would likely be insignificant and temporary as fish merely avoid the project area during construction. Sedimentation affecting downstream habitat and individuals of the species would also be difficult to ascertain, but by implementation of comprehensive and effective sediment and erosion control measures, the Corps strives to uphold water quality standards necessary to be protective of the Topeka shiner. Major weather events that might breach these

measures and exceed state water quality standards are anticipated to be short-lived and are to be quickly remedied so as to avoid chronic long-term conditions that are more likely to adversely affect downstream populations.

It is anticipated that Topeka shiner habitat previously undisturbed by stream crossing presence will be directly impacted by the replacement of bridges with culverts and by culvert extensions or placement of longer culverts at a rate of 600 – 900 ft./yr. In 2004 and 2005, such stream crossing projects impacted 686 ft. and 787 ft. of Topeka shiner habitat. In addition to habitat modified by culvert presence, an unspecified but believed small amount of habitat will be impacted by altered geomorphic processes and sediment loading at some structure replacement sites. Sediment loading during culvert construction may degrade stream habitat; however, impacts to fish community structure may not be quantifiable (Wellman et al. 2000) or at a scale that impacts populations in an occupied stream.

An estimated 1,144 stream crossing structures presently impact about 19.46 stream miles (approximately 1.1%) of Topeka shiner habitat in South Dakota. Of these structures 750 are eligible for federal bridge replacement funds, while the remaining 394 structures do not meet size requirements to qualify for federal replacement funds and could be permitted under this programmatic BO, if those structures need replacement. Approximately, 4,092 linear feet of Topeka shiner habitat is anticipated to be directly impacted if 10% of bridges are replaced with culverts over the next 10 years. Based on a 25% bridge to culvert conversion ratio, an estimated 10,320 linear ft. of Topeka shiner habitat could be affected. The total impact would be between 4,092 and 10,320 linear ft. of stream channel resulting from the replacement of between 66 and 168 bridges with culverts. This additional impact represents between 0.04 % and 0.1 % of the stream miles inhabited by the Topeka shiner.

Effect of the Take

The immediate effect of take in the form of mortality that may occur during the construction phase is a reduction in the number of individual Topeka shiners present in the action area and disruption of spawning activities if the project occurs in the spawning period and spawning occurs in this area. However, the number of impacted individuals is expected to be relatively small, and any mortality would likely be negligible in terms of impacts to the population in the action area. We do not anticipate take in the form of habitat fragmentation as a result of impacts to fish passage because design, implementation, and monitoring are intended to ensure fish passage after project completion. The effects of this level of take is expected to be relatively low, due to the small size of the impacted area for each project, and will have minor impacts to the overall population in the action area. In the accompanying BO, we determined that this level of anticipated take is not likely to jeopardize the continued existence of the species. Critical habitat has not been designated for the species in the action area.

REASONABLE AND PRUDENT MEASURES

RPMs have been developed based on information in the Corps' BA, the Topeka shiner's life

history information, and anticipated effects of the issuance of NWP. RPMs are non-discretionary and must be implemented so that they become binding conditions of the permit in order for the exemption in Section 7(o)(2) of the ESA to apply. The Corps has a continuing duty to regulate the activity covered by this Incidental Take Statement. If the Corps fails to ensure compliance with the following RPMs and their associated terms and conditions, the protective coverage of Section 7(o)(2) may lapse:

1. Projects permitted under this BO will minimize impacts to stream connectivity or fish movement, and diversion channels installed will be designed to allow for fish passage during construction.
2. Topeka shiner mortality will be minimized by relocating fish from isolated work zones and applying measures to avoid entrainment/impingement of fish at pump intakes and ensuring the volume of water withdrawn outside of isolated work zones does not lower instream flows to a level that may negatively impact fish.
3. Comprehensive and effective sediment/erosion control plans will be implemented, monitored, and maintained until the site is permanently stabilized. Construction practices will minimally impact stream habitat and adjoining riparian and grassland habitat.
4. Long-term monitoring will be required to ensure that all projects permitted under this BO continue to provide fish passage.
5. Annual reports will be provided to this office regarding activities conducted under this BO.

TERMS AND CONDITIONS

In order to be exempt from the prohibitions of Section 9 of the ESA, the Corps must comply with the following terms and conditions which implement the RPMs described above and outline required reporting/monitoring requirements. The following terms and conditions are non-discretionary:

Terms and Conditions Related to RPM 1 (Fish Passage):

- A. All structures shall be designed to maintain natural channel forming processes including, but not limited to, bankfull (Q2) channel size, streambed slope, and channel complexity.
- B. Any installed diversion channels must be at grade with the streambed with no obstructions to fish passage and lined to ensure sediments are not mobilized and water quality is not reduced.
- C. No activities that involve construction or maintenance of structures that constitute a permanent barrier to fish passage may be permitted under this programmatic BO.

Terms and Conditions Related to RPM 2 (Minimize Topeka Shiner Mortality):

- A. Fish screens shall be attached to all pump intakes that withdraw water from the construction zone. Fish screens shall be sufficient to prevent fish entrainment and impingement at pump intakes and should be utilized in conjunction with other methods (e.g., avoiding pool habitats, placing screened intakes within larger screened containers to reduce vacuum effect) if determined to be necessary to minimize impacts to individuals.
- B. Fish trapped within a project work area will be captured and relocated into an adjacent stream section unless site conditions prohibit fish seining. Oversight for final water enclosures, de-watering, fish seining and any fish transfer or movement shall be conducted by a Service-approved biologist.

Terms and Conditions Related to RPM 3 (Sediment/Erosion Control Plan):

- A. Manual revegetation of all disturbed areas shall be initiated immediately post-construction or at the first opportunity if the project occurs outside the growing season, utilizing appropriate native mesic species, upland grasses, and/or shrubs. If the project occurs outside the growing season, sediment/erosion control measures shall be left in place, closely monitored, and maintained in good working condition until the site is permanently stabilized.
- B. Revegetation efforts shall be closely monitored and any failures addressed immediately to prevent erosion/sedimentation. Monitoring and manual vegetative restoration efforts shall continue until the site is permanently stabilized.
- C. Upon completion of construction, livestock and machinery shall be excluded from the stream and streambank in the construction area until permanently stabilized.
- D. Riparian and grassland habitats will be avoided, with the exception of activities critical to the construction process and which are specified in the project plans.

Terms and Conditions Related to RPM 4 (Monitoring)

- A. Long-term monitoring shall occur for the life of any permanent structure constructed under this BO to ensure that fish passage is maintained. Issues that may arise include but are not limited to; “perching” at the culvert outlet, sedimentation build up above the culvert inlets, and rip-rap in the stream channel for “scour” protection occurring above the culvert invert.
- B. Monitoring shall occur at least semi-annually during safety inspections and after any major flood event (exceeding 25-year events) in the watershed.
- C. Whenever barriers to fish passage are discovered during the monitoring specified in (A) a report will be made to the Corps and the Service and remedial measures will be

implemented as soon as possible to restore fish passage for Topeka shiners.

Terms and Conditions Related to RPM 5 (Reporting):

- A. Instances resulting in noncompliance with any of the RPMs and terms and conditions herein shall be immediately reported to the Service's Ecological Services Field Office in Pierre, South Dakota.
- B. On project completion the Corps will ensure the applicant submits to the Service a report which shall include, but not be limited to:
 - 1. Assessments of finished culverts which included detailed photographs.
 - 2. Project timing and duration of the project
 - 3. A list of fish species collected when fishes are moved from project work areas.
 - 4. Length of stream banks and stream beds (linear feet) impacted by the project
 - 5. Estimate upland or riparian area (acres) disturbed during construction.
 - 6. A description of any water extraction activities used.
 - 7. Effectiveness of measures utilized to preclude entrainment/impingement.
 - 8. A qualitative description of any temporary water diversions used to route water around project work areas and success in allowing fish passage during construction.
 - 9. A description of conservation recommendations implemented.
- C. The Corps shall submit to the Service by March 1 of each year, a report of the previous year's actions conducted under this biological opinion to document implementation of the above mentioned terms and conditions, to evaluate the effectiveness of those terms and conditions, and to quantify project impacts.
- D. Relevant reported information in the annual report shall include, but not be limited to:
 - 1. Total number of all sites where Topeka shiners were collected, number or estimate of the number of individuals occurring onsite, and mortality estimates, if any.
 - 2. Any pertinent information regarding the impact of the project(s) on federally listed species which were determined by the Corps to fall under either the "no effect" or "not likely to adversely affect" categories of impacts.
 - 3. Total amount of impacted stream channel.
 - 4. Number and types of NWP used.

We believe that no more than 25 mortalities of adult and juvenile Topeka shiners per project will be incidentally taken as a result of the proposed projects. The amount of incidental take through other forms of take as defined in (16 U.S.C. § 1531 et seq.) will be reduced through the implementation of the RPMs but is unquantifiable due to the aquatic nature of the Topeka shiner. The RPMs, with their implementing terms and conditions, are designed to minimize the impact of incidental take that might otherwise result from the proposed actions. If, during the course of the actions, this level of incidental take is exceeded, such incidental take represents new information requiring reinitiation of consultation and review of the RPMs provided. The Corps

must immediately provide an explanation of the causes of the taking and review with this office the need for possible modification of the RPMs.

APPENDING PROJECTS TO THIS BIOLOGICAL OPINION

A template biological assessment will be submitted for each project proposed by the Corps for inclusion under this biological opinion. The format of this template biological assessment will be formulated jointly by the Corps and the Service and may be modified in the future as deemed necessary by all parties without reinitiation of formal consultation.

In order to streamline the consultation process, the template biological assessments will contain sufficient information to indicate the eligibility of the proposed project to be appended to this biological opinion. If the Service concurs we will respond in writing stating that the proposed project will be appended to this biological opinion. A copy will be retained in Service files and the original returned to the Corps. If the Service does not concur, or the Corps submits a proposal that falls outside the parameters outlined in this biological opinion, individual consultation procedures may be utilized. If new populations of Topeka shiners are found outside the 10-digit HU defined in the action area but within the 8-digit HU defined in the action area, these areas will be included in this programmatic BO as the changes in cumulative effects should be biological insignificant. If new populations are found outside the 8-digit HU defined in the action area this programmatic BO will need to be amended to include those areas.

Project proposals submitted for consideration under this biological opinion will be in the form of this template biological assessment which should include, but not be limited to:

- A. Location of the proposed project.
- B. The eligibility of the proposed project to be covered under this biological opinion.
- C. Additional listed species that may occur at the project site with and effects determination made by the Corps for each additional listed species with a request for Service concurrence, and any additional pertinent information.
- D. Reference to the General Conditions and South Dakota Regional Conditions to be complied with as directed by the relevant NWP(s) and are relevant to this biological opinion. It is anticipated that general and regional conditions may change, thus it is important to reference the most current version.
- E. A description of project design criteria and project footprint.
- F. A list of any conservation recommendations to be applied at the project.

CONSERVATION RECOMMENDATIONS

<p><u>Conservation Recommendations</u> - Suggestions of the Service regarding discretionary measures to minimize or avoid adverse effects of a proposed action on listed species or critical habitat or regarding the development of information (50 CFR § 402.02).</p>

Section 7(a)(1) of the ESA directs Federal agencies to use their existing authorities to further the purposes of the ESA by carrying out programs or activities to conserve endangered or threatened species. Conservation recommendations are discretionary activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop biological information. We suggest the following Conservation Recommendations:

- Promote habitat enhancement projects within or adjacent to (e.g. cut off oxbow restorations) Topeka shiner streams that will improve water quality, create refugia, restore/enhance groundwater connections, create pool/spawning habitats (cross vanes, for example) and/or restore pool-riffle-run sequences, and protect riparian habitat (e.g., exclude livestock).
- Promote the use of bridges in place of culvert stream crossings.
- Promote the use of bioengineering methods when bank stabilization is required for a project.
- Encourage applicants to complete projects during dry conditions when possible.
- Utility stream crossings shall be directionally bored beneath Topeka shiner streams to preclude instream work, minimizing bank disturbances

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, we request notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the action outlined in your April 4, 2014, request for consultation. As provided in 50 CFR § 402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may impact listed species or critical habitat in a manner or extent not considered in this BO; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this BO; or (4) a new species is listed or critical habitat is designated that may be affected by the action.

If you have any questions regarding this BO, please contact Terry Quesinberry of this office at (605) 224-8693, Extension 234.

Sincerely,



Scott V. Larson
Field Supervisor
South Dakota Field Office

LITERATURE CITED

- Bailey, R.M. and M.O. Allum. 1962. Fishes of South Dakota. University of Michigan Museum of Natural History, Miscellaneous Publications No. 199, Ann Arbor.
- Bekker, H. and B. Leull. 2003. Habitat fragmentation due to infrastructure. pp. 1-14. In: 2003 Proceedings of the International Conference on Ecology and Transportation. (C.L. Irwin, P. Garrett, and K.P. McDermott, Eds.) Center for Transportation and the Environment. Raleigh, NC: North Carolina State University.
- Blank, M., B. Bramblett, S. Kalinowski, J. Cahoon and K. Nixon. 2011. Impacts of barriers on Topeka shiner populations. South Dakota Department of Transportation, Pierre.
- Blann, K. L., J.L. Anderson, G.R. Sands and B. Vondracek. 2009. 'Effects of Agricultural Drainage on Aquatic Ecosystems: A Review', *Critical Reviews in Environmental Science and Technology*, 39: 11, 909 — 1001
- Blausey, C.M. 2001. The status and distribution of the Topeka shiner, *Notropis topeka*, in eastern South Dakota. M.S. Thesis, South Dakota State University, Brookings.
- Bouska, W.W. and C.P. Paukert. 2009. Road crossing designs and their impacts on fish assemblages of Great Plains streams. *Transactions of the American Fisheries Society* 2009:214-222.
- Bouska, W.W., T. Keane, and C.P. Paukert. 2010. The Effects of road crossings on prairie stream habitat and function. *Journal of Freshwater Ecology* 25:499-506.
- Dahl, T.E. 2011. Status and trends of wetlands in the conterminous United States 2004 to 2009. U.S. Department of the Interior, Fish and Wildlife Service, Washington.
- Hatch, J. T. 2001. What we know about Minnesota's first endangered fish species: the Topeka shiner. *Journal of the Minnesota Academy of Science* 65:39-46.
- Hubbard, D.E. 2011. A review of the effects of pattern tiling on wetlands and receiving waters. Report prepared for the East Dakota Water Development District. South Dakota State University. Department of Natural Resource Management.
- Johnson, R.R. and K.F. Higgins. 1997. Wetland resources of eastern South Dakota. Brookings: South Dakota State University. 102pp.
- Johnston, C.A. 2013. Wetland losses due to row crop expansion in the Dakota Prairie Pothole Region. *Wetlands* 33:175-182.
- Morey, N.M. 2007. A survey of fishes from Snake Creek in the upper James River watershed. South Dakota Department of Transportation, Pierre.

- Morey, N.M. 2008. Low-water crossing affects prairie stream habitat structure and fish assemblage. Presentation, Annual Meeting of the Dakota Chapter of the American Fisheries Society.
- Newcombe, C.P. and J.O.T. Jensen. 1996. Channel suspended sediment and fisheries: A synthesis for quantitative assessment of risk and impact. *North American Journal of Fisheries Management* 16:693-727.
- South Dakota Department of Transportation. 2005. Compliance Report 2004: Biological Opinion for Stream-Crossing Projects Administered/Funded by the South Dakota Department of Transportation and the Federal Highway Administration. South Dakota Department of Transportation, Pierre.
- South Dakota Department of Transportation. 2006. Compliance Report 2005: Biological Opinion for Stream-Crossing Projects Administered/Funded by the South Dakota Department of Transportation and the Federal Highway Administration. South Dakota Department of Transportation, Pierre.
- South Dakota Department of Transportation. 2007. South Dakota Department of Transportation and Federal Highway Administration Section 7 Programmatic Biological Assessment for stream crossing projects. South Dakota Department of Transportation, Pierre.
- Spellerberg, I.F. 1998. Ecological effects of roads and traffic: a literature review. *Global Ecology and Biogeography Letters* 7:317-333.
- Stephans, S.E., J.A. Walker, D.R. Blunck, A. Jayaraman, D.E. Naugle, J.K. Ringelman and A.J. Smith. 2008. Predicting risk of habitat conversion in native temperate grasslands. *Conservation Biology* 22:1320-1330.
- Trombulak, S.C. and C.A. Frissell. 2000. Review of ecological effects of roads on terrestrial and aquatic ecosystems. *Conservation Biology* 14:18-30.
- U.S. Fish and Wildlife Service. 1998. United States Fish and Wildlife Service. Final Rule to list the Topeka shiner as endangered. *Federal Register* 63(240):69008-69021.
- U.S. Fish and Wildlife Service. 2004. Endangered and threatened wildlife and plants: final designation of critical habitat for the Topeka shiner. *Federal Register* 69(143):44736-44770.
- U.S. Fish and Wildlife Service. 2008. Programmatic Biological Opinion – stream-crossing projects administered/funded by the South Dakota Department of Transportation and the Federal Highway Administration. Pierre, South Dakota.
- U.S. Fish and Wildlife Service. 2009. Topeka shiner (*Notropis topeka*). Five-year review: summary and evaluation.

- U.S. Fish and Wildlife Service and National Marine Fisheries Service. 1998. Consultation handbook, procedures for conducting consultation and conference activities under section 7 of the Endangered Species Act.
- Wall, S.S., C.M. Blausey, J.A. Jenks, and C.R. Berry, Jr. 2001. Topeka shiner (*Notropis topeka*) population status and habitat conditions in South Dakota streams. Final Report for Research Work Order # 73. South Dakota State University, Brookings.
- Wall, S.S. and C.R. Berry, Jr. 2002. Inventory and mitigation of culverts crossing streams inhabited by Topeka shiners (*Notropis topeka*) in South Dakota.
- Warren, M.L., Jr. and M.G. Pardew. 1998. Road crossings as barriers to small-stream fish movement. *Transactions of the American Fisheries Society*, 127:4, 637-644.
- Wellman, J. C., D. L. Combs, and S. B. Cook. 2000. Long-term impacts of bridge and culvert construction or replacement on fish communities and sediment characteristics of streams. *Journal of Freshwater Ecology* 15:317-328.
- Wright, C.K. and M.C. Wimberly. 2013. Recent land use change in the Western Corn Belt threatens grasslands and wetlands. *Proceedings of the National Academy of Sciences of the United States of America: Early Edition*.

Table 2. Summary of formal Section 7 consultations associated with NWP authorizations from 2009 until present.

Permit Number	Permit Type	County	HUC 8	Impacted Waterbody	Habitat Area Permanently Impacted	Type of work	Comments
NWO-1993-30024-PIE	NWP 14	Minnehaha	10170203	Split Rock Creek	80 linear ft stream channel and 0.01 wetland acres	Culvert replacement	Project removed a partial barrier to fish movement (incidental to the project purpose)
NWO-2012-2076-PIE	NWP 14	Jerauld	10160011	Firesteel Creek	75 linear ft of stream channel	Culvert replacement	Replace existing culvert with triple arch culvert
NWO-2010-1106-PIE	NWP 14	Douglas	10160011	S.F. Twelve-Mile Creek	126 linear ft stream channel	Replace bridge with culvert	-
NWO-2010-1861-PIE	NWP 40	Hutchinson	10160011	Dry Run Creek	280 linear ft stream channel realignment	Channel modification	No loss in overall channel length.
NWO-2012-0484-PIE	NWP 14	Lincoln	10170102	Blind Creek	100 linear ft stream channel	Culvert replacement	-
NWO-2012-2102-PIE	NWP 14	Turner	10170202	W.F. Vermillion River	100 linear ft stream channel	Replace bridge with culvert	-
NWO-2009-3172-PIE	NWP 14	Brookings	10170202	Deer Creek	40 linear ft stream channel	Replace bridge with culvert	-
NWO-2006-0315-PIE	NWP 14	Codington	10170202	Willow Creek	350 linear ft channel modification	Channel modification	No loss in overall channel length
NWO-2013-0772-PIE	NWP 14	Minnehaha	10170203	Slip-Up Creek	150 linear ft of stream channel	Bridge replacement	-
NWO-2013-0772-PIE	NWP 14	Minnehaha	10170203	Slip-Up Creek	150 linear ft of stream channel	Bridge replacement	-
NWO-2012-1701-PIE	NWP 14	Minnehaha	10170203	Slip-Up Creek	250 linear ft of stream channel	Replace bridge with culvert	-
NWO-2012-1701-PIE	NWP 14	Minnehaha	10170203	Slip-Up Creek	215 linear ft of stream channel	Replace bridge with culvert	-

Appendix 1. General conditions required for projects permitted under the USACE Nationwide Permits.

General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

1. Navigation. (a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements. No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species.

3. Spawning Areas. Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas. Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds. No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material. No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).

7. Water Supply Intakes. No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments. If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains. The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls. Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow.

13. Removal of Temporary Fills. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance. Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project. The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers. No activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status. Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service).

17. Tribal Rights. No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. Endangered Species. (a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the NWP activity, or whether additional ESA consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification the proposed activities will have “no effect” on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific regional endangered species conditions to the NWPs.

(e) Authorization of an activity by a NWP does not authorize the “take” of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an

ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the U.S. FWS or the NMFS, The Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the U.S. FWS and NMFS or their World Wide Web pages at <http://www.fws.gov/> or <http://www.fws.gov/ipac> and <http://www.noaa.gov/fisheries.html> respectively.

19. Migratory Birds and Bald and Golden Eagles. The permittee is responsible for obtaining any “take” permits required under the U.S. Fish and Wildlife Service’s regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the U.S. Fish and Wildlife Service to determine if such “take” permits are required for a particular activity.

20. Historic Properties. (a) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of Section 106 of the National Historic Preservation Act. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address section 106 compliance for the NWP activity, or whether additional section 106 consultation is necessary.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer or Tribal Historic Preservation Officer, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-Federal applicant has identified historic properties on which the

activity may have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(d) The district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA section 106 consultation is required and will occur, the district engineer will notify the non-Federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts. If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters. Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NHPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for

any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, and 38, notification is required in accordance with general condition 31, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation. The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that adverse effects on the aquatic environment are minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the adverse effects to the aquatic environment are minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse effects of the proposed activity are minimal, and provides a project-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in minimal adverse effects on the aquatic environment. Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in minimal adverse effects on the aquatic environment.

(2) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, wetland restoration should be the first compensatory mitigation option considered.

(3) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) – (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(4) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(5) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring

requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation, such as stream rehabilitation, enhancement, or preservation, to ensure that the activity results in minimal adverse effects on the aquatic environment.

(e) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any project resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that a project already meeting the established acreage limits also satisfies the minimal impact requirement associated with the NWPs.

(f) Compensatory mitigation plans for projects in or near streams or other open waters will normally include a requirement for the restoration or establishment, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, riparian areas may be the only compensatory mitigation required. Riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to establish a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or establishing a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(g) Permittees may propose the use of mitigation banks, in-lieu fee programs, or separate permittee-responsible mitigation. For activities resulting in the loss of marine or estuarine resources, permittee-responsible compensatory mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(h) Where certain functions and services of waters of the United States are permanently adversely affected, such as the conversion of a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse effects of the project to the minimal level.

24. Safety of Impoundment Structures. To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been

independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality. Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA Section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management. In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions. The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits. The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications. If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. Compliance Certification. Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

- (a) A statement that the authorized work was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;
- (b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(1)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and
- (c) The signature of the permittee certifying the completion of the work and mitigation.

31. Pre-Construction Notification. (a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

- (1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or
- (2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or in the vicinity of the project, or to notify the Corps pursuant to general condition 20 that the activity may have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or Section 106 of the National Historic Preservation (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be

modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

- (1) Name, address and telephone numbers of the prospective permittee;
 - (2) Location of the proposed project;
 - (3) A description of the proposed project; the project's purpose; direct and indirect adverse environmental effects the project would cause, including the anticipated amount of loss of water of the United States expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. The description should be sufficiently detailed to allow the district engineer to determine that the adverse effects of the project will be minimal and to determine the need for compensatory mitigation. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the project and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);
 - (4) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many waters of the United States. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;
 - (5) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse effects are minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.
 - (6) If any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, for non-Federal applicants the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed work or utilize the designated critical habitat that may be affected by the proposed work. Federal applicants must provide documentation demonstrating compliance with the Endangered Species Act; and
 - (7) For an activity that may affect a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, for non-Federal applicants the PCN must state which historic property may be affected by the proposed work or include a vicinity map indicating the location of the historic property. Federal applicants must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.
- (c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form must clearly indicate

that it is a PCN and must include all of the information required in paragraphs (b)(1) through (7) of this general condition. A letter containing the required information may also be used.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWP and the need for mitigation to reduce the project's adverse environmental effects to a minimal level.

(2) For all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States, for NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed, and for all NWP 48 activities that require pre-construction notification, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (U.S. FWS, state natural resource or water quality agency, EPA, State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Office (THPO), and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to telephone or fax the district engineer notice that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects to the aquatic environment of the proposed activity are minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(3) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by Section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(4) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project.

Appendix 2. South Dakota Regional Conditions required for projects permitted under the USACE Nationwide Permits.

South Dakota Regional Conditions

The following Nationwide Permit (NWP) regional conditions will be used in the State of South Dakota. Regional conditions are placed on NWPs to ensure projects result in less than minimal adverse impacts to the aquatic environment and to address local resources concerns.

Wetlands Classified as Peatlands – Revoked for Use

All NWPs, with the exception of 3, 5, 20, 27, 30, 32, 38, and 45, are revoked for use in peatlands in South Dakota.

“Peatlands” are saturated and inundated wetlands where conditions inhibit organic matter decomposition and allow for the accumulation of peat. Under cool, anaerobic, and acidic conditions, the rate of organic matter accumulation exceeds organic decay. Peatlands can be primarily classified into ombrotrophic bogs and minerotrophic fens; the latter subdivided into poor, moderate-rich, and extreme-rich fens, each with distinctive indicator species, community physiognomy, acidity, alkalinity, and base cation content.

Wetlands Classified as Peatlands – Pre-construction Notification Requirement

For NWPs 3, 5, 20, 27, 30, 32, 38, and 45 permittees must notify the Corps in accordance with General Condition No. 31 (Notification) prior to initiating any regulated activity impacting peatlands in South Dakota.

Waters Adjacent to Natural Springs – Pre-construction Notification Requirement – All Nationwide Permits

For all NWPs, permittees must notify the Corps in accordance with General Condition No. 31 (Notification) for regulated activities located within 100 feet of the water source in natural spring areas in South Dakota. For purposes of this condition, a spring source is defined as any location where there is artesian flow emanating from a distinct point at any time during the growing season. Springs do not include seeps and other groundwater discharge areas where there is no distinct point source.

Borrow Site Identification – All Nationwide Permits

The permittee is responsible for ensuring that the Corps is notified of the location of any borrow site that will be used in conjunction with the construction of the authorized activity so that the Corps may evaluate the site for potential impacts to aquatic resources, historic properties, and endangered species. For projects where there is another lead Federal agency, the permittee shall provide the Corps documentation indicating that the lead Federal agency has complied with the National Historic Preservation Act and Endangered Species Act for the borrow site. The permittee shall not initiate work at the borrow site in conjunction with the authorized activity until approval is received from the Corps.

Minimum Culvert Width – All Nationwide Permits

The permittee shall size culvert stream crossings based on the estimated two-year storm event or the width of the bankfull stream channel. Culverts placed in streams with a discernable bed and bank shall have a maximum width that is at least as wide as the bankfull channel width in the section of stream where the culvert will be placed. In lieu of bankfull width as a reference for minimum culvert size, the permittee may install a culvert that can pass the two-year storm event without causing rise of flood flows upstream of the culvert. Bankfull width shall be defined as the width of the stream at where over-bank flow begins during a flood event. In incised stream channels that do not or infrequently access their floodplains bankfull indicators may include slope changes, vegetation changes, the maximum elevation of deposited bedload, or the top of undercut banks.

Culvert Countersink Depth for Aquatic Organism Passage – All Nationwide Permits

The permittee shall install culverts as so that the culvert invert is set below the natural flowline of the water body according to the below table.

Culvert Type	Drainage Area	Culvert Invert Depression Below Stream Grade Line
All culvert types	≤ 100 acres	Not required
Pipe diameter < 8.0 ft.	100 to 640 acres	0.5 ft.
Pipe diameter < 8.0 ft.	> 640 acres	1.0 ft.
Pipe diameter ≥ 8.0 ft.	All drainage sizes	20 % of pipe diameter
Box culvert	All drainage sizes	1.0 ft.

- **The stream grade line shall be defined as the longitudinal average of the low-flow stream channel.**
- **The slope of the culvert should be parallel to the slope of the stream grade line.**
- **The culvert invert depression depth shall be measured at the culvert inlet for culverts installed at a slope less than the slope of the stream grade line.**

- **Riprap inlet and outlet protection shall be placed to match the height of the culvert invert.**

GENERAL CONDITIONS (REGIONAL ADDITIONS)

General Condition 3 - Spawning Areas

In order to further minimize adverse impacts in certain waters of the United States and to comply with General Condition No. 3, projects authorized under all available Section 404 NWP that would occur in South Dakota's cold water streams must comply with the following regional condition:

In all South Dakota streams classified as cold water streams, when water flow is present, the discharge of dredged or fill material shall not take place without the permittee notifying the Corps in accordance with General Condition No. 31 (Notification) prior to initiating any regulated activity between October 15 and April 1. The Corps of Engineers, the South Dakota Department of Game, Fish and Parks, or the South Dakota Department of Environment and Natural Resources can be contacted for the location of State classified cold water streams. The cold water fisheries rivers and streams in South Dakota may be found at <http://legis.state.sd.us/rules/DisplayRule.aspx?Rule=74:51:03>.

General Condition 6 - Suitable Material

Permittees are reminded that General Condition No. 6 prohibits the use of unsuitable material. In addition, the following materials are not suitable for discharge into waters of the United States in the State of South Dakota:

1. Vehicle bodies, farm machinery and metal junk, including appliances and metal containers, are prohibited.
2. The use of old or used asphalt paving material as a fill material and the use of new or used asphalt for bank stabilization or erosion control is prohibited.
3. The use of organic debris as fill material is prohibited. (Properly anchored trees, treetops, root wads, logs, and hay bales may be allowed on a case-by-case basis.)
4. Any material subject to leaching when in an aquatic environment is prohibited (for example, but not limited to, chemically-treated building material, roofing material, and wood debris).
5. Individual or unanchored tires are prohibited. (Tires may be allowed on a case-by-case basis when placed in the form of a mat or grid with multiple anchoring points to reduce the risk of design failure.)
6. Small aggregate (i.e. less than 6 inches in diameter) may not be placed below the ordinary high water mark (OHWM) of a water body for the purpose of bank stabilization or erosion

control when such aggregate will be unstable or subject to frequent failure. Small aggregate may, however, be placed below the OHWM if its purpose is to fill the interstices of a well-graded rock riprap revetment or channel lining.

7. Slab material, regardless of source, must be broken before placement so that the dimension of the largest slab will not be more than 3.5 times the dimension of the smallest slab (unless justified by a qualified engineer) and must be free of exposed rebar, wire and wire mesh.
8. The use of clean brick, broken concrete and cinder block for erosion control or bank stabilization will be considered on a case-by-case basis. If allowed, the broken concrete must be free of exposed rebar, wire, wire mesh, asphalt paving material, paint, and other erodible materials. Broken concrete must range in size from 6 to 36 inches (unless justified by a qualified engineer).