



Missouri Department of Natural Resources

CLEAN WATER ACT SECTION 401 WATER QUALITY CERTIFICATION 2020 GENERAL AND SPECIFIC CONDITIONS

Water Protection Program

12/2020

Division of Environmental Quality

PUB2947

Consistent with Section 401 of the Clean Water Act, these precertified conditions are designed to ensure activities carried out under Nationwide Permits (NWP) authorized by the U.S. Army Corps of Engineers (USACE) will comply with Missouri water quality requirements. Where applicable, these conditions are in addition to, not a replacement for, any federal requirements or conditions.

The conditions outlined in this document apply to those authorized projects where the project proponent has chosen to accept these conditions instead of pursuing an individual Clean Water Act Section 401 Water Quality Certification (WQC) for the following NWPs:

- Only General Conditions apply to projects authorized by NWPs 5, 15, 18, 22, 23, 25, 27, 29, 30, 31, 36, 39, 40, 42, 43, 45, 46, and E.
- Both General and Specific Conditions apply to projects authorized by NWPs 3, 4, 6, 7, 12, C, D, 13, 14, 16, 19, 20, 33, 41, 53, and 54.

Alternatively, a project proponent may apply for individual WQC if they do not wish to accept the conditions outlined in this document.

Projects authorized by NWPs 17, 21, 32, 34, 37, 38, 44, 48, 49, 50, 51, 52, A, and B require individual WQC by the Department of Natural Resources.

NWPs 1, 2, 8, 9, 10, 11, 28 and 35 authorize projects under Section 10 of the Rivers and Harbors Act of 1899 only. An activity needing only a Section 10 permit may require a WQC if that activity can reasonably be expected to result in any discharge either during construction or operation of the facility. Thus, if the USACE determines the activity is likely to result in a discharge during construction or operation, the Department of Natural Resources has the discretion to require a WQC for a Section 10 activity. The USACE will advise a Section 10 permit project proponent that they may need a WQC if there is a reasonable expectation that a discharge will occur either during the construction or operation of the project.

Pursuant to Chapter 644.037, RSMo, the Department of Natural Resources shall certify without conditions NWPs as they apply to impacts on wetlands in Missouri.

Pursuant to Chapter 644.038, RSMo, the Department of Natural Resources certifies all NWPs for impacts in all waters of the state without the above-stated or any other conditions for the construction of highways and bridges approved by the Missouri Highway and Transportation Commission. The Memorandum of Understanding of 2016 and any subsequent modifications between the two agencies outline the requirements by which the Missouri Department of Transportation will design and construct projects in order to protect the water quality of waters of the state.

GENERAL CONDITIONS

1. A stream's pattern, profile, and dimension, including but not limited to sinuosity, slope, and channel width, shall be maintained as much as practicable. Streambed gradient shall not be adversely impacted during project construction. No project shall accelerate bed or bank erosion. This will ensure compliance with the Missouri Water Quality

Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].

2. Channelization of streams is not allowed under this precertification. Channelization includes but is not limited to reducing the length of the channel, widening the channel for increased water storage or flow, and/or construction of hard structures which concentrate flow. Unless necessary for a stream crossing associated with infrastructure projects and contained within an associated right-of-way, construction easement, or permanent easement, bank stabilization activities only along one bank of a stream are permitted, including but not limited to bank sloping and riprapping. The redirection of flow by excavation of the opposite bank or a streambed is considered a channel modification and is not authorized by this WQC. This will ensure compliance with the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].
3. No new or expanded wet stormwater retention basins or similar impoundment structures may be constructed unless they are located off-channel. In-channel dry stormwater detention basins are allowable if the stream channel is either temporarily or not adversely affected by the basin. This will ensure compliance with the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].
4. Only clean, nonpolluting fill shall be used. The following materials are not suitable where contact with water is expected and shall not be used due to their potential to cause violations of the general criteria of Missouri's Water Quality Standards [10 CSR 20-7.031(4)(A)-(H)]:
 - a. Earthen fill, gravel and broken concrete where the material does not meet the Suitable Material specifications stated in the "Missouri Nationwide Permit Regional Conditions" (<https://usace.contentdm.oclc.org/digital/collection/p16021coll11/id/2662/>) in locations where erosive flows are expected to occur on a regular basis, such as streambanks and/or lake shorelines.
 - b. Asphalt.
 - c. Concrete with exposed rebar.
 - d. Tires, vehicles or vehicle bodies, and construction or demolition debris are solid waste and are excluded from placement in the waters of the state. Properly sized, broken concrete without exposed rebar is allowed.
 - e. Liquid concrete, including grouted riprap, if not placed in forms as part of an engineered structure.
 - f. Any material containing chemicals that would result in violation of Missouri Water Quality Standards general criteria [10 CSR 20-7.031(4)] or specific criteria [10 CSR 20-7.031(5)].
5. Waste concrete or concrete rinsate shall be disposed of in a manner that does not result in discharge to any jurisdictional water ways. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from unsightly bottom deposits [10 CSR 20-7.031(4)(A)]; substances resulting in toxicity [10 CSR 20-7.031(4)(D)]; and physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].
6. Missouri Water Quality Standards antidegradation requirements dictate all appropriate and reasonable Best Management Practices related to erosion and sediment control, project stabilization and prevention of water quality degradation are applied and maintained; for example, preserving vegetation, streambank stability and basic drainage [10 CSR 20-7.031(3)(B)]. Best Management Practices shall be properly installed prior to conducting authorized activities and maintained, repaired and/or replaced as needed during all phases of the project to limit the amount of discharge of water contaminants to waters of the state. The project shall not involve more than normal stormwater or incidental loading of sediment caused by project activities so as to comply with Missouri's general water quality criteria [10 CSR 20-7.031(4)(A)-(H)]; <https://www.sos.mo.gov/cmsimages/adrules/csr/current/10csr/10c20-7a.pdf>
7. Clearing of vegetation and trees shall be the minimum necessary to accomplish the activity except for the removal of invasive or noxious species and placement of ecologically beneficial practices. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B)].

8. Care shall be taken to keep machinery out of the water way as much as possible. If work in the water way is unavoidable, it shall be performed in a way that minimizes the duration and amount of any disturbance to banks, substrate and vegetation to prevent increases in turbidity. Fuel, oil and other petroleum products, equipment, construction materials and any solid waste shall not be stored below the ordinary high water mark at any time or in the adjacent flood-prone areas beyond normal working hours. All precautions shall be taken to avoid the release of wastes or fuel to streams and other adjacent waters as a result of this operation. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B)] and Missouri Water Quality Standards general criteria requiring waters be free from substances preventing beneficial uses [10 CSR 20-7.031(3)(A)]; substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)]; and physical, chemical or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].
9. Petroleum products spilled into any water or on the banks where the material may enter waters of the state shall be immediately cleaned up and disposed of properly. Any such spills of petroleum shall be reported as soon as possible, but no later than 24 hours after discovery to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436 or website at <http://dnr.mo.gov/env/esp/esp-eer.htm>. This will ensure compliance with Missouri Environmental Improvement Authority to provide for the conservation of state water resources by the prevention of pollution and proper methods of disposal [Chapter 260.015, RSMo] and Missouri Water Quality Standards general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly bottom deposits, color, turbidity or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(B)-(G)].
10. All efforts shall be made to minimize exposure of unprotected soils. To the best of the project proponent's ability, project activity shall be conducted at times of little or no rainfall to limit the amount of overland flow and sediment disturbance caused by heavy equipment. This will ensure compliance with Missouri antidegradation requirements for Best Management Practices [10 CSR 20-7.031(3)(B)].
11. Programmatic WQC is denied for any NWP issued on a water that is listed for a sediment-related impairment, aquatic habitat alteration, channelization or unknown impairment as listed in the most current Water Quality Report (Section 305(b) Report) at <http://dnr.mo.gov/env/wpp/waterquality/303d/303d.htm>. Although intended to result in minimal impacts, NWP authorizations in these waters may contribute to impairments and result in non-compliance with Missouri water quality standards general criteria requiring waters be free from physical, chemical and hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(B)] or exceedance of Missouri Water Quality Standards specific criteria [10 CSR 20-7.031(5)]. Since WQC General or Specific Conditions cannot be established to address all concerns from the variety of impairments and activities authorized by NWPs, individual review for WQC will be required. Requirements for individual WQC will be determined on a case-by-case basis based on the specific impairments, and additional testing, design, disposal or BMP considerations may be required.

To determine the location of the waters noted above, Department of Natural Resources' geospatial data is available upon request, and all published data is available on the Missouri Spatial Data Information Services website at msdis.missouri.edu/. Additional information to identify the project location, including stream reaches with listed impairments or special water designations, may be obtained from the Department of Natural Resources' Water Protection Program at 573-522-4502.

12. Stream losses greater than 1/10 acre shall be mitigated at a minimum one-for-one ratio based on type and extent of impacts to ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and Missouri Clean Water Law, which provides the Department authority to adopt remedial measures to prevent, control, or abate pollution [Chapter 644.026.1(9), RSMo] and approval authority for compensatory mitigation used in connection with any WQC [Chapter 644.026.1(26), RSMo]. Mitigation for loss of aquatic resources should be in conformance with the compensatory mitigation guidance currently approved for use in Missouri, including guidance provided by the Missouri Stream Mitigation Method. Compensatory mitigation shall be within the state of Missouri. Mitigation guidance documents can be located online at www.nwk.usace.army.mil/Missions/RegulatoryBranch/StateofMissouri.

SPECIFIC CONDITIONS

13. Nationwide Permit 3 *Maintenance*

Silt, sediment, and debris removal shall be limited to a maximum of 200 LF upstream and 200 LF downstream of structures. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)].

14. Nationwide Permit 4 *Fish and Wildlife Harvesting, Enhancement, and Attraction Devices and Activities*

Any inorganic or extraneous debris, such as may be found on Christmas trees shall be removed to qualify as clean, nonpolluting fill. This will ensure compliance with the Missouri's Water Quality Standards general criteria that waters shall be free from unsightly bottom deposits [10 CSR 20-7.031(4)(A)] and solid waste [10 CSR 20-7.031(4)(H)].

15. Nationwide Permit 12 *Oil and Natural Gas Pipeline Activities,*

Nationwide Permit C *Electric Utility Line and Telecommunications Activities,* and

Nationwide Permit D *Utility Line Activities for Water and Other Substances*

- a. For project crossings that must disturb a water body, work shall be conducted in such a manner as to seal off the work area from flow and minimize sediment transport. Material resulting from the activity shall not be sidecast into waters of the state for more than one month. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B) and general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly color, turbidity, or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(B)-(G)].
- b. If Horizontal Directional Drilling is used, drilling mud and/or other materials shall not be discharged into waters of the state. Best Management Practices shall be implemented to prevent possible discharges from reaching waters of the state. In the event materials are inadvertently discharged to waters of the state, notification to the Department of Natural Resources is required within 24 hours by calling 573-522-4502. This will ensure compliance with Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B)] and Missouri Environmental Improvement Authority [Chapter 260.015, RSMo] to provide for the conservation of state air, land and water resources by the prevention of pollution and proper methods of disposal.
- c. Project crossings shall be placed as close to perpendicular as possible and shall be limited to a maximum crossing length of no more than one and one-half times the width of the stream. This will ensure compliance with the Missouri antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and Best Management Practices [10 CSR 20-7.031(3)(B)].

16. Nationwide Permit 14 *Linear Transportation Projects*

- a. The permittee shall propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)]. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
- b. Where this NWP is used to authorize bridge and culvert structures, stream channel work shall be limited to a maximum of 200 feet upstream and a maximum of 200 feet downstream of the bridge or culvert. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way. This will ensure compliance with the Missouri antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and the Missouri Water Quality Standards general criterion requiring waters be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].

17. Nationwide Permit 20 *Response Operations for Oil and Hazardous Substances*

Oil and hazardous substance releases shall be reported to the Department of Natural Resources' Environmental Emergency Response number at 573-634-2436. Continue to report updates with regard to the containment and cleanup of releases. This will ensure compliance with Missouri Environmental Improvement Authority [Chapter 260.015, RSMo] to provide for the conservation of state water resources by the prevention of pollution and proper methods of disposal.

18. Nationwide Permit 33 *Temporary Construction, Access and Dewatering*

- a. The use of this NWP shall be limited to impacts of six months or less in duration. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirements for maintenance and protection of designated uses [10 CSR 20-7.031(3)]
- b. Any removal of accumulated sediment (e.g., sand, gravel) upstream of a proposed project shall be limited to the quantity necessary to relieve any obstruction or to protect downstream habitat. The permittee must propose and employ measures to mitigate the removal of impounded sediment in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].

19. Nationwide Permit 41 *Reshaping Existing Drainage Ditches*

In-channel disposal of excavated material not used for reshaping activities is prohibited. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for Best Management Practices [10 CSR 20-7.031(3)(B) and general criteria requiring waters be free from substances that prevent maintenance of beneficial uses; cause unsightly color, turbidity or toxicity; and/or impair the natural biological community [10 CSR 20-7.031(4)(B)-(G)].

20. Nationwide Permit 53 *Removal of Low-Head Dams*

- a. The permittee must propose and employ measures to mitigate the removal of impounded sediment (e.g., sand, gravel) in the unstable area upstream of a proposed project to prevent it from being transported downstream and/or construct a notched weir to slow the release of impounded sediment from upstream of the proposed project. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from substances causing unsightly color or turbidity [10 CSR 20-7.031(4)(C)] and physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)]. Accumulated gravel may be allowed to naturally deposit into downstream plunge pool voids. Consultation with a hydrologist or other scientist is recommended if the amount of accumulated unconsolidated gravel exceeds the volume of plunge pool voids.
- b. Stream channel work shall be limited to a maximum of 100 feet upstream and a maximum of 100 feet downstream of the dam. This will ensure compliance with the Missouri Water Quality Standards antidegradation requirement for maintenance and protection of designated uses [10 CSR 20-7.031(3)] and the Missouri Water Quality Standards general criterion requiring waters to be free from physical, chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)].
- c. Restoration of the stream channel to its former, natural state is authorized. Individual WQC is required for non-natural channel modifications. This will ensure compliance with the Missouri Water Quality Standards general criteria requiring waters be free from physical chemical, or hydrologic changes that would impair the natural biological community [10 CSR 20-7.031(4)(G)]. For purposes of this condition, a channel modification is any activity that alters the width, depth, length and/or sinuosity of a water way.

Unless the Department agrees to an alternative, requests for WQC should be sent electronically to wpsc401cert@dnr.mo.gov [Section 644.026.26, RSMo and 10 CSR 20-6.060(5)]. A request for Water Quality Certification shall (1) identify the project proponent and point of contact; (2) identify the proposed project; (3) identify the applicable USACE permit; (4) identify the location of any potential discharge that may result from the project and location of receiving waters; (5) include a description of any methods and means proposed to monitor the discharge and the equipment or measures planned to treat, control, or manage the discharge; (6) include all other federal, interstate, state, or local agency authorizations required for the proposed project, including all approvals or denials already received.

Although not required to apply for WQC, the Department may request additional information prior to providing a WQC decision to ensure Missouri water quality requirements are met, such as a response to comments from the Department, other resource agencies, and/or the public; planned compensatory mitigation; and/or an analysis of practicable alternatives.

An issued WQC, whether programmatically or individually issued, becomes part of and expires with the Section 404 and/or Section 10 permit unless explicitly stated in the WQC.

Acquisition of NWPs and the attendant WQCs shall not be construed or interpreted to imply the requirements for other permits are replaced or superseded, including Clean Water Act Section 402 National Pollutant Discharge Elimination System Permits required under Missouri Clean Water Law [Chapter 644.026.1, RSMo] for land disturbance or return water from material deposition. Permits or any other requirements shall remain in effect. Project proponents with questions are encouraged to contact the Department of Natural Resources' regional office in the project area. A regional office map with contact information is located at www.dnr.mo.gov/regions/.

The Department of Natural Resources encourages, but does not require the permittee to consider environmentally-friendly design techniques to include stormwater management strategies that maintain or restore the original site hydrology through infiltration, evaporation, or reuse of stormwater. Designs might include using porous pavement or creating vegetated swales and/or rain gardens. More information can be found at these websites: www.epa.gov/owow/NPS/lid/ and www.lid-stormwater.net/lid_techniques.htm.

The Department of Natural Resources encourages the use of native vegetation to protect impacted areas from future water quality concerns. Native vegetation has evolved with Missouri's geology, climate and wildlife to occur within a region as a result of natural processes rather than human intervention. For areas where direct impacts to streams are to be avoided, the Department of Natural Resources recommends a minimum riparian buffer strip width of 50 feet as measured from top of bank.

The Department of Natural Resources encourages the use of Horizontal Directional Drilling for stream and wetland crossings when practicable. If properly utilized, Horizontal Directional Drilling is an alternative to more traditional, open-trench methods and can result in significant minimization and/or complete avoidance of aquatic resource impacts.

The following publication provides guidance on how to protect water quality through Best Management Practices on project sites. For more information, please read: "Protecting Water Quality: A field guide to erosion, sediment and stormwater best management practices for development sites in Missouri and Kansas" dated January 2011 and located online at <http://dnr.mo.gov/env/wpp/wpcp-guide.htm>.

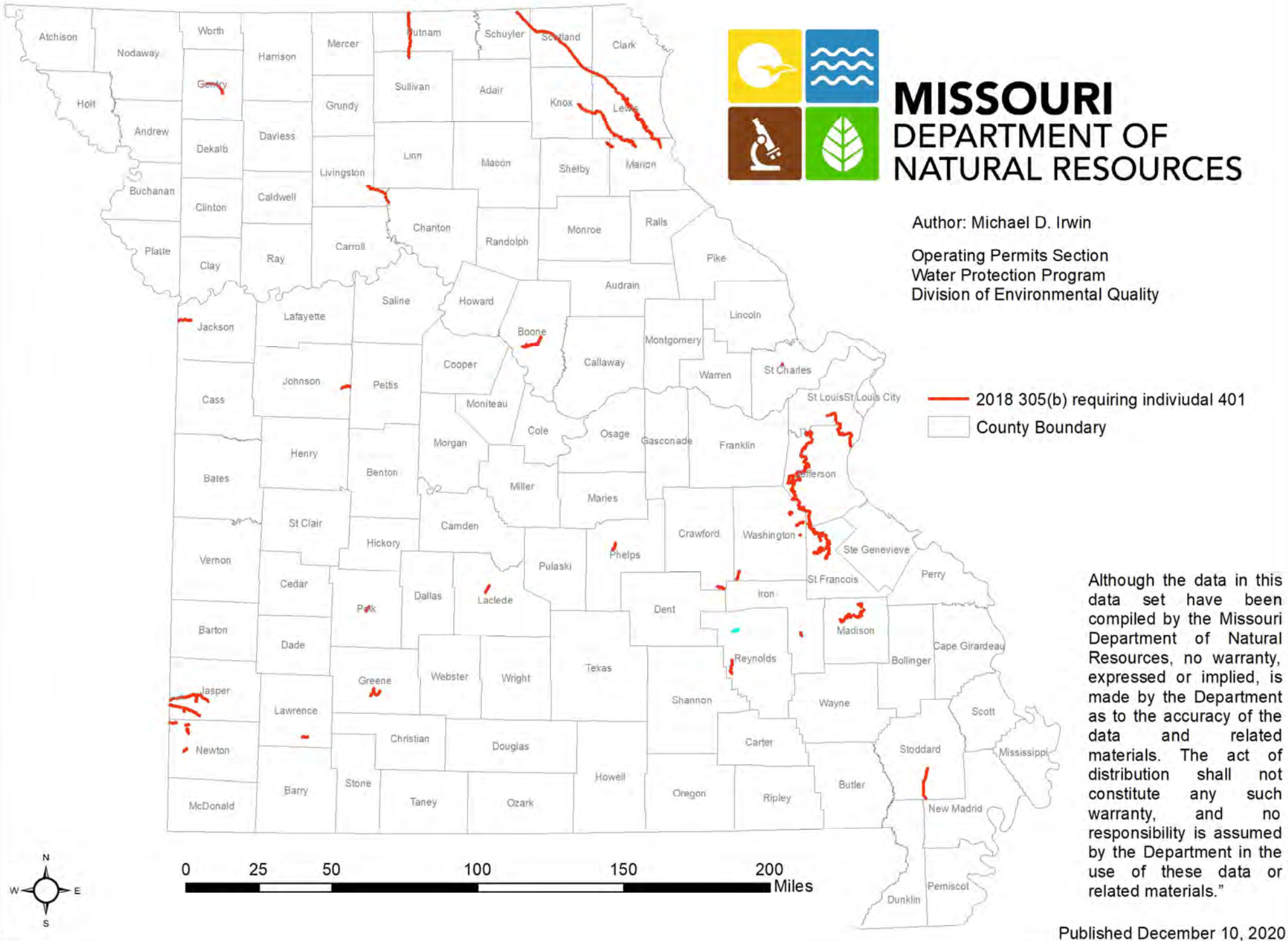
To help determine if a proposed activity could encounter species or sites of conservation concern within or near a project, including those that have not been recorded, the project proponent is encouraged to visit:

- Missouri Department of Conservation's "Natural Heritage Review" website at <https://naturalheritagereview.mdc.mo.gov/>.
- U.S. Fish and Wildlife Service's "Information, Planning and Conservation" website at <http://ecos.fws.gov/ipac/>.

If the proposed project encounters and will potentially affect a species of concern, please report it to the Missouri Department of Conservation and the U.S. Fish and Wildlife Service.

For more information
Missouri Department of Natural Resources
Water Protection Program
P.O. Box 176
Jefferson City, MO 65102-0176
wpsc401cert@dnr.mo.gov
800-361-4827 or 573-522-4502
<http://www.dnr.mo.gov/env/wpp>

2020 MISSOURI 305(b) WATERS REQUIRING INDIVIDUAL 401 WQC



MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

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Operating Permits Section
Water Protection Program
Division of Environmental Quality

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Waterbody	Impact Size	Units	Pollutant	Source Description	County(ies)
	2.5 Mi.		Cadmium in sediment	Mill Tailings	Newton
Beef Br.	2.5 Mi.		Lead in sediment	Mill Tailings	Newton
	2.5 Mi.		Zinc in sediment	Mill Tailings	Newton
	5.8 Mi.		Cadmium in sediment	Oronogo/Duenweg Mining Belt	Jasper
Bens Branch	5.8 Mi.		Lead in sediment	Oronogo/Duenweg Mining Belt	Jasper
	5.8 Mi.		Zinc in sediment	Oronogo/Duenweg Mining Belt	Jasper
Big Cr.	1.8 Mi.		Cadmium in sediment	Glover smelter	Iron
Big R.	55.6 Mi.		Lead in sediment	Old Lead Belt tailings	Jefferson
	52.7 Mi.		Sedimentation/Siltation	Old Lead Belt tailings	St. Francois/Jefferson
	52.8 Mi.		Cadmium in sediment	Old Lead Belt tailings	St. Francois/Jefferson
Big R.	52.3 Mi.		Lead in sediment	Mill Tailings	St. Francois/Jefferson
	81.3 Mi.		Zinc in sediment	Old Lead Belt tailings	St. Francois/Jefferson
Brush Creek	5.4 Mi.		Polycyclic Aromatic Hydrocarbons-PAHs in sediment	Nonpoint Source	Jackson
	19 Mi.		Cadmium in sediment	Tri-State Mining District	Jasper
Center Cr.	19 Mi.		Lead in sediment	Tri-State Mining District	Jasper
	19 Mi.		Zinc in sediment	Tri-State Mining District	Jasper
Courtois Cr.	2.6 Mi.		Lead in sediment	Doe Run Viburnum Division Lead mine	Washington
Crooked Cr.	3.5 Mi.		Cadmium in sediment	Buick Lead Smelter	Crawford
	3.5 Mi.		Lead in sediment	Buick Lead Smelter	Crawford
Douger Br.	2.8 Mi.		Lead in sediment	Aurora Lead Mining District	Lawrence
	2.8 Mi.		Zinc in sediment	Aurora Lead Mining District	Lawrence
Dry Auglaize Cr.	3 Mi.		Cause Unknown	Source Unknown	Laclede
	1.2 Mi.		Cadmium in sediment	Leadwood tailings pond	St. Francois
Eaton Br.	1.2 Mi.		Lead in sediment	Leadwood tailings pond	St. Francois
	1.2 Mi.		Zinc in sediment	Leadwood tailings pond	St. Francois
Flat River Cr.	4.7 Mi.		Sedimentation/Siltation	Old Lead Belt tailings	St. Francois
	4.7 Mi.		Lead in sediment	Old Lead Belt tailings	St. Francois
Grand R.	8 Mi.		Fishes Bioassessments	Channelization	Gentry
Grand R.	11.5 Mi.		Fishes Bioassessments	Channelization	Livingston/Chariton
Hinkson Cr.	7.6 Mi.		Cause Unknown	Urban Runoff/Storm Sewers	Boone
Hinkson Cr.	6.8 Mi.		Cause Unknown	Urban Runoff/Storm Sewers	Boone
Indian Cr.	1.9 Mi.		Lead in sediment	Doe Run Viburnum Division Lead mine	Washington
	1.9 Mi.		Zinc in sediment	Doe Run Viburnum Division Lead mine	Washington
	1.6 Mi.		Cadmium in sediment	Tri-State Mining District	Newton
Jacobs Br.	1.6 Mi.		Lead in sediment	Tri-State Mining District	Newton

	1.6 Mi.	Zinc in sediment	Tri-State Mining District	Newton
Jordan Cr.	3.8 Mi.	Polycyclic Aromatic Hydrocarbons-PAHs in sediment	Urban NPS	Greene
Koen Cr.	1 Mi.	Lead in sediment	Mine Tailings	St. Francois
L. Beaver Cr.	3.5 Mi.	Sedimentation/Siltation	Smith Sand and Gravel	Phelps
L. St. Francis R.	24.2 Mi.	Lead in sediment	Catherine Lead Mine, pos. Mine La Motte	Madison
Lateral #2 Main Ditch	11.5 Mi.	Sedimentation/Siltation	Nonpoint Source	Stoddard
Locust Cr.	19.4 Mi.	Fishes Bioassessments	Channelization	Putnam/Sullivan
Logan Cr.	6.1 Mi.	Lead in sediment	Sweetwater Lead Mine/Mill	Reynolds
Long Br.	6 Mi.	Cause Unknown	Source Unknown	Johnson/Pettis
Meramec R.	22.8 Mi.	Lead in sediment	Old Lead belt tailings	St. Louis
Mississippi R.	0.2 Mi.	Lead in sediment	Herculaneum smelter	Jefferson
	0.2 Mi.	Zinc in sediment	Herculaneum smelter	Jefferson
N. Fabius R.	92 Mi.	Habitat Assessment, Streams	Channelization	Schuyler/Marion
North Branch Wilsons Cr.	3.8 Mi.	Zinc in sediment	Urban NPS	Greene
Peruque Cr.	0.3 Mi.	Cause Unknown	Lake St. Louis Dam	St. Charles
	1 Mi.	Sedimentation/Siltation	Barite tailings pond	Washington
Pond Cr.	1 Mi.	Zinc in sediment	Mill Tailings	Washington
S. Fabius R.	4.2 Mi.	Fishes Bioassessments	Channelization	Shelby/Marion
Salt Pine Cr.	1.2 Mi.	Lead in sediment	Barite tailings pond	Washington
	1.2 Mi.	Zinc in sediment	Barite tailings pond	Washington
Shaw Br.	1.2 Mi.	Lead in sediment	Federal tailings pond	St. Francois
	1 Mi.	Lead in sediment	Mill Tailings	Washington
Shibboleth Br.	1 Mi.	Zinc in sediment	Mill Tailings	Washington
	3 Mi.	Lead in sediment	Barite tailings ponds	Washington
Shibboleth Br.	3 Mi.	Zinc in sediment	Mill Tailings	Washington
Shoal Cr	3.8 Mi.	Zinc in sediment	Mill Tailings	Newton
Silver Cr.	1.9 Mi.	Zinc in sediment	Mill Tailings	Newton
Town Br.	2.5 Mi.	Cause Unknown	Source Unknown	Polk
	1.5 Mi.	Sedimentation/Siltation	Barite tailings pond	Washington
Trib. Old Mines Cr.	1.5 Mi.	Lead in sediment	Barite tailings pond	Washington
	1.5 Mi.	Zinc in sediment	Barite tailings pond	Washington
	2.9 Mi.	Cadmium in sediment	Abandoned Smelter Site	Jasper
Trib. to Turkey Cr.	2.9 Mi.	Lead in sediment	Abandoned Smelter Site	Jasper
	2.9 Mi.	Zinc in sediment	Abandoned Smelter Site	Jasper
Troublesome Cr.	41.3 Mi.	Sedimentation/Siltation	Habitat Mod. - other than Hydromod.	Knox/Marion
	7.7 Mi.	Cadmium in sediment	Tri-State Mining District	Jasper

Turkey Cr.	7.7 Mi.	Lead in sediment	Tri-State Mining District	Jasper
	7.7 Mi.	Zinc in sediment	Tri-State Mining District	Jasper
	6.1 Mi.	Cadmium in sediment	Tri-State Mining District	Jasper
Turkey Cr.	6.1 Mi.	Lead in sediment	Tri-State Mining District	Jasper
	6.1 Mi.	Zinc in sediment	Tri-State Mining District	Jasper
	2.4 Mi.	Cadmium in sediment	Bonne Terre chat pile	St. Francois
Turkey Cr.	2.4 Mi.	Copper in sediment	Bonne Terre chat pile	St. Francois
	2.4 Mi.	Lead in sediment	Bonne Terre chat pile	St. Francois
	2.4 Mi.	Nickel in sediment	Bonne Terre chat pile	St. Francois
Village Cr.	2.4 Mi.	Zinc in sediment	Bonne Terre chat pile	St. Francois
	1.9 Mi.	Sedimentation/Siltation	Mine La Motte tailings area	Madison
	2.1 Mi.	Lead in sediment	West Fork Lead Mine/Mill	Reynolds
W. Fk. Black R.	2.1 Mi.	Nickel in sediment	West Fork Lead Mine/Mill	Reynolds
	2.2 Mi.	Cadmium in sediment	Mill Tailings	Newton
Willow Br.	2.2 Mi.	Zinc in sediment	Mill Tailings	Newton
	3.9 Mi.	Polycyclic Aromatic Hydrocarbons-PAHs in sediment	Nonpoint Source	Greene