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| Minnesota Pollution Control Agency (MPCA), 520 Lafayette Road North, St. Paul, MN 55155-4194 | Sanitary Sewer Extension  Design Certification Attachment  NPDES/SDS Program  Doc Type: Permit Application |

|  |  |  |  |
| --- | --- | --- | --- |
| Title of project: |  | | |
| Which existing collection system will the project connect to? | |  | |
| Which Wastewater Treatment Plant (WWTP) is the collection system connected to? | | |  |
| *The information above must be the same as entered on the Project Information screen of the e-Services application.* | | | |

## **Project information**

**Project information packet must include the following:**

This completed form must be attached to a sanitary sewer extension permit application that is submitted through the e-Services portal. The design engineer listed in the certification below must be the same person as the design engineer identified on the contacts screen of the e-Services application.

If any of the questions below are answered “No,” provide written justification in the space provided at the bottom of this form.

All attachments for e-Services submittal must be saved in PDF format.

**Clean Water Revolving Fund Projects**

If the project is pursuing Clean Water Revolving Fund financial assistance, a copy of the plans and specifications must also be attached for Minnesota Pollution Control Agency (MPCA) review if not already submitted to the MPCA engineer assigned to the project.

***Note:*** *No project construction may begin until you are in receipt of the required permit(s) issued by the MPCA and as defined by law under Minn. Stat. § 115.07, subd. 3.*

## **Design criteria**

All sanitary sewer extensions shall be designed according to the latest version of the following recommendations, specifications, and guidelines (specific MPCA guidelines take precedence over other documents):

* *Recommended Standards for Wastewater Facilities*, Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers. (Ten States Standards)
* *Standard Utilities Specification*, City Engineers Association of Minnesota.
* *Design Flow and Loading Determination Guidelines*, Minnesota Pollution Control Agency.

## **Sewer pipe**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Yes** | **No** | **N/A** |  | | | | |
|  |  |  | **If the project includes construction of sanitary sewer or force main, please complete questions 1-23.** | | | | |
|  |  |  | 1. | Are all sewers designed without an overflow or bypass point? | | | |
|  |  |  | 2. | Are all gravity sewers at least eight inches in diameter? *(Answer N/A* ***only*** *if there are no gravity sewers.)* | | | |
|  |  |  | 3. | Are all sewers sufficiently deep to receive wastewater from basements and to prevent freezing, or is insulation provided for sewers that are not placed at a depth to prevent freezing? | | | |
|  |  |  | 4. | Is all nonconductive sewer pipe designed to be installed with a locate wire or equally effective means of marking the location in accordance with Minn. R. 7560.0150? <https://www.revisor.mn.gov/rules/7560.0150/> | | | |
|  |  |  | 5. | If there are sewers that cross or enter any water body, has the Minnesota Department of Natural Resources (DNR) been contacted to determine if the project will require a permit for construction? *(Answer N/A* ***only*** *if there are no sewers located in a water body.)* | | | |
|  |  |  | 6. | If the project has the potential to adversely impact wetlands, has a permit or approval from another official statewide program (U.S. Army Corps of Engineers, DNR, or Minnesota Wetlands Conservation Act) been issued to specifically address the project? *(Answer N/A* ***only*** *if there are no impacts to wetlands.)* | | | |
|  |  |  | 7. | Do the design plans and specification contain specific size and location requirements for reaction blocking or pipe restraint to withstand water hammer and other cyclic reversal of stresses associated with pump station operation? *(Answer N/A* ***only*** *if there are no pressure sewers.)* | | | |
|  |  |  | 8. | Is there an air relief or vacuum relief valve provided at all high points in force mains? *(Answer N/A* ***only*** *if there are no pressure sewers.)* | | | |
|  |  |  | 9. | Are grinder pumps or other solids removal equipment included for any force main that is less than four (4) inches in diameter? *(Answer N/A* ***only*** *if there is no pressure sewer or force main less than four (4) inches.)* | | | |
|  |  |  | 10. | Are all sewers designed with mean velocities when flowing full, of at least two (2) feet per second (fps), based on Manning’s formula using an “n” value of 0.013? | | | |
|  |  |  | 11. | Does the slope of the gravity sewer pipe meet minimum requirements for the pipe sizes listed below, or will those sewers that do not meet minimum requirements be cleaned or inspected at least once per year to ensure problems do not develop and a site specific maintenance schedule established?  The pipe diameter and slope shall be selected to obtain the greatest practical velocities to minimize settling problems. Oversizing sewers to achieve flatter slopes should be avoided.  *(Answer N/A* ***only*** *if there is no gravity sewers)* | | | |
|  | | | |
|  | | | | Nominal Pipe Size | Minimum Slope (feet per 100 feet) | Nominal Pipe Size | Minimum Slope (feet per 100 feet) |
| 8 inch | 0.40 | 27 inch | 0.067 |
| 10 inch | 0.28 | 30 inch | 0.058 |
| 12 inch | 0.22 | 33 inch | 0.052 |
| 15 inch | 0.15 | 36 inch | 0.046 |
| 18 inch | 0.12 | 39 inch | 0.041 |
| 21 inch | 0.10 | 42 inch | 0.037 |
|  | | | | 24 inch | 0.08 | 48 inch or larger | Slope for mean velocity of 3 fps when full |
|  |  |  | 12. | Are individual service connections to the sewer designed to be water tight and not protrude into the sewer? | | | |
|  |  |  | 13. | Are all gravity and pressure sewer pipes and water supply pipe separated horizontally by at least 10 feet and vertically by at least 1.5 feet when crossing? Or, if these separation distances cannot be obtained, has approval from the Minnesota Department of Health (MDH) and/or the Department of Labor and Industry (DLI) been granted? | | | |
|  |  |  | 14. | Has an application for water supply and/or building sewer construction been submitted to the MDH or DLI? *(Answer N/A* ***only*** *if there is no water supply piping included with this project.)*  Any project that involves the construction of water supply pipes may also require a permit from the MDH or the DLI. For additional information refer to the MDH website at <https://www.health.state.mn.us/communities/environment/water/planreview/watermains.html>  or, the DLI website at <https://www.dli.mn.gov/business/get-licenses-and-permits/plumbing-plan-review>. | | | |
| **Sewer pipe (cont.)** | | | | | | | |
| **Yes** | **No** | **N/A** |  | | | | |
|  |  |  | 15. | Has an inventory of **all** wells on **all** properties in the project area been completed, and will all wells be at least 50 feet from buried sewers, lift stations and grinder stations, as required by Minn. R. ch. 4725 (Minnesota Wells and Borings)?  For more information on well setbacks and exceptions to the 50-foot requirement, refer to the MDH website at: <https://www.health.state.mn.us/communities/environment/water/wells/construction/isolate.html>  Contact information for the MDH is available here: <https://www.health.state.mn.us/communities/environment/water/wells/contactus.html> | | | |
|  |  |  | 16. | Are all manholes at least 48 inches in diameter? *(Answer N/A* ***only*** *if there are no manholes.)* | | | |
|  |  |  | 17. | Are all manholes constructed to prevent surface water runoff from entering through the cover? *(Answer N/A* ***only*** *if there are no manholes.)* | | | |
|  |  |  | 18. | Are drop manholes used at locations where the sewer pipe enters the manhole at an elevation of 24 inches or more above the manhole invert? *(Answer N/A* ***only*** *if sewer pipes enter at an elevation less than 24 inches.)* | | | |
|  |  |  | 19. | Is the spacing between manholes 400 feet or less, or if the spacing is greater than 400 feet, do operation and maintenance personnel have access to adequate cleaning equipment that can accommodate the spacing? *(Answer N/A* ***only*** *if all pressure sewer.)* | | | |
|  |  |  | 20. | Will a leakage test be performed to demonstrate watertightness of the sewer pipes? | | | |
|  |  |  | 21. | Will a deflection test be performed on all plastic gravity sewer after the pipe has been in place for at least 30 days? *(Answer N/A* ***only*** *if televising or other method is used instead.)* | | | |
|  |  |  | 22. | Will sewer line televising be performed? | | | |
|  |  |  | 23. | Have questions 1 through 22 been answered as Yes or N/A? | | | |
| **Lift stations** | | | | | | | |
| **Yes** | **No** | **N/A** |  | | | | |
|  |  |  | **If the project includes lift station construction, please complete questions 24-46.** | | | | |
|  |  |  | 24. | Will the lift station be fully operational and accessible during a 25-year flood? | | | |
|  |  |  | 25. | Will the lift station structural, electrical, and mechanical equipment be protected from physical damage during a 100-year flood? | | | |
|  |  |  | 26. | Where high ground water conditions are anticipated, has the buoyancy of the lift station structure been considered and adequate provisions made to protect the structures? *(Answer N/A* ***only*** *if high ground water conditions are not anticipated.)* | | | |
|  |  |  | 27. | Are wet wells and dry wells completely separated and common walls are gas tight? *(Answer N/A* ***only*** *if no dry well is included)* | | | |
|  |  |  | 28. | Are multiple pumps provided such that with any unit out of service, the remaining units have capacity to handle the design peak hourly wet weather flow? | | | |
|  |  |  | 29. | Are all pumps capable of passing spheres of at three (3) inches in diameter? | | | |
|  |  |  | 30. | Are all pump suction and discharge openings at least four (4) inches in diameter? | | | |
|  |  |  | 31. | Are all electrical components in raw wastewater wet wells in compliance with National Electrical Code requirements for Class I, Division 1, Group D locations? | | | |
|  |  |  | 32. | Is the lift station designed so that there are no bypass or overflow pipes from the wet well? | | | |
|  |  |  | 33. | Are suitable shutoff and check valves placed on the discharge line of each pump? | | | |
|  |  |  | 34. | Are check valves located between the shutoff valve and the pump? | | | |
|  |  |  | 35. | Are check valves placed in the horizontal position, except ball valves which may be placed vertically? | | | |

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| **Lift stations (cont.)** | | | | | |
| **Yes** | **No** | **N/A** |  | | |
|  |  |  | 36. | Are shutoff and check valves for submersible pump lift stations located in a separate valve pit? If a separate valve pit is not provided, are all valves easily accessible for maintenance? | |
|  |  |  | 37. | If a drain line is provided between a valve pit or dry well and a wet well, is the drain line equipped with a gas and water tight valve or extended below the low water level in the wet well to prevent entry of hazardous gases to the valve pit? *(Answer N/A* ***only*** *if a drain line is not included.)* | |
|  |  |  | 38. | If continuous wet well ventilation is provided, are at least 12 complete air changes per hour provided? *(Answer N/A* ***only*** *if submersible pump lift station.)* | |
|  |  |  | 39. | If intermittent wet well ventilation is provided, are at least 30 complete air changes per hour provided? *(Answer N/A* ***only*** *if submersible pump lift station.)* | |
|  |  |  | 40. | If continuous dry well ventilation is provided, are at least six (6) complete air changes per hour provided? *(Answer N/A* ***only*** *if submersible pump lift station.)* | |
|  |  |  | 41. | If intermittent dry well ventilation is provided, are at least 30 complete air changes per hour for 10 minutes and six (6) complete air changes per hour thereafter provided? *(Answer N/A* ***only*** *if submersible pump lift station.)* | |
|  |  |  | 42. | Are provisions for flow measurement provided? Type: |  |
|  |  |  | 43. | Are a sufficient number of running time meters provided to record when each pump is running and when multiple pumps are running at the same time? | |
|  |  |  | 44. | Is an appropriate alarm system provided to indicate power failure, pump failure, unauthorized entry, or other malfunction? | |
|  |  |  |  | Type of alarm: |  |
|  |  |  | 45. | Are provisions included for emergency operation to prevent the bypassing or backup of sewage? Emergency pumping capability may be accomplished by connection to at least two independent utility substations, or by provision of portable or in-place electrical generation, or by portable pumping equipment. | |
|  |  |  | 46. | Have questions 24 through 45 been answered as Yes or N/A? | |

**Justification for questions answered “No.”**

Provide written justification for any questions answered as “No.” Individual plan sheets or engineering specifications may be attached if necessary to provide justification.

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| **Section number** | **Justification for variation** |
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## **Design Certification Statement**

*“I certify under penalty of law that I am a licensed professional engineer in the state of Minnesota and that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”*

*By typing my name in the following box I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name (print): | |  | | Title: |  | |
| Signature: |  | | | *Check if document has been electronically signed.* | | |
| Date (mm/dd/yyyy): | | |  | PE Registration No.: | |  |