

Environmental Assessment Guidelines*

To enable faster agency review, environmental documents must follow these guidelines when DWR is the lead agency. Please feel free to contact [Jackie Roddy](#) ((919) 807-6442) with any questions about document content and formatting. The following provides the outline for submissions, with a description of issues that should be covered in each section:

A. Project Description – This section should describe all aspects of the project, including planning, phasing, construction and operations, and project location(s).

1. Existing systems and conditions - Discuss the functions, locations, and operating status of all existing systems and conditions on the project site(s). What is the current average daily flow and maximum capacities in the collection, treatment, and disposal systems that are proposed for amendment and what are the system's permit limits? If current system or operational problems exist, outline the existing problem(s) and discuss the steps currently being taken to remedy them. Describe the existing sewer network to which the proposed project will connect, including pipe sizes and locations and types of lines (i.e., gravity, force main, etc.).

2. Proposed WWTP/Sewer Line Changes - Discuss and explain all structural and operational changes and improvements proposed in the project, including any phasing proposed, relative to existing systems. Discuss and show how and where the proposed lines will connect to existing and future systems. Discuss the system to which the proposed line will be connected. How many feet, what diameter, what ultimate design flow, and what types of lines are proposed? Are any pump stations proposed and what are their design flows? Will the proposed additional flow cause the receiving WWTP to require an expansion or rerating? Indicate acreage of site disturbance proposed for each project component and indicate what proposed changes will be temporary and which will be permanent in nature.

3. Project Service Area - Discuss the service area for the proposed project, the population and land uses the proposed project will serve, and provide an explanation of how these figures and geographic areas were derived. Describe what jurisdiction(s) the project, including its service area, are within. Discuss the site's and project service area's current zoning and/or land use designations (if applicable). State the total number of acres that will be disturbed.

B. Need – The following items should be provided, as applicable:

1. Quantitative justification for the requested improvements, including any requested flow increases, based on local growth trends and future plans of the municipality or county (including population projections, existing and proposed land use changes, possible industrial plant additions, and any water conservation measures proposed). The need for the specific amount and location of the proposed sewer service in the project area, including failing existing systems or other reasons for the project must be discussed in this section.

2. If there is an Infiltration and Inflow (I&I) problem currently with the system, a full discussion of I&I management should be presented, along with an outline of steps currently being taken to remedy the problem (e.g., smoke testing for storm drain connections, manhole inserts, etc.).

C. Alternatives Analysis – Discuss all reasonable alternatives to the proposed project, including the alternative of doing nothing (i.e., the "no action" alternative). If more than one site was considered, discuss the site selection process and the factors considered in selecting the proposed site. Factors considered could include real estate considerations, space, utilities, transportation, environmental consequences, etc.

This section of the document should explain clearly why other reasonable alternatives were disregarded and the preferred alternative chosen. The EA should focus primarily on environmental consequences for determining alternatives, but it is also reasonable to disclose the fiscal differences between alternatives. If an alternative is being disregarded based on an environmental impact, or due to fiscal reasons, that impact should be fully discussed in this section.

Wastewater treatment related – DWQ's guidance for preparing the Engineering Alternatives Analysis is accessible [here](#). A full review of alternatives to discharge is required. Describe the state of the existing system, need for expansion, and justification for the increase in flow. Flow justification should cover a 20-year period and correspond with the plant's master plan. If the proposed plant's expansion is to be phased over a number of years, justify the corresponding flow for each phase.

D. Existing Environmental Characteristics of Project Area – The existing or affected environment should be discussed in terms of what currently exists on the site and in the surrounding area. If no site resource information exists for a given topic, make a statement to that effect and provide a reference to a study or document that supports your statement. For example, if there are no wetlands on the site, reference a wetlands delineation that was done in the past or, at a minimum, a field survey that was conducted.

For some topics, such as land use, wetlands, water supplies, shellfish or fish and their habitats, and wildlife and their habitats, discussion should also include the surrounding area if there is any possibility that the proposed project could have any impact on it. For example, if the site itself does not contain any wetlands, but there are wetlands downstream that could be affected by the increased surface water runoff from the site, they should be identified.

(1) Topography – Briefly describe the topography of the project area including landforms, slopes, and elevations. A brief description of the geology of the site can be added, if available. Is the site within the 100-year flood plain? National Flood Insurance Program (NFIP) maps should be used to determine whether the project will encroach on the base (100-year) flood plain.

(2) Soils – Describe the dominant soil(s) in the project area as well as any soil types that might prove to be a constraint to the proposed project. This would include any fill, wetland soil types, etc. ([NRCS' North Carolina Online Soil Survey Manuscripts](#))

(3) Land Use – Describe the current use of the land at the site and the surrounding acreage. Additionally, discuss how the current land use fits into the land use of the entire area in terms of conservation, development, and ecological function. If applicable, identify the current zoning classification of the project site and surrounding area.

(4) Wetlands – Describe the existence of any wetlands on-site or near the site. Indicate any wetlands on the map in Section G. Include a list of the type, quality, and delineation. Describe the primary function of the wetland (e.g., flood control, wildlife habitat, groundwater recharge), and other factors that indicate the relative importance of the function to the total wetland resources of the area.

(5) Prime or Unique Agricultural Lands – Is any of the proposed site classified as prime or unique agricultural land? Reference some authority. Local soil and water conservation districts can be of assistance in classification of these areas.

(6) Public Lands and Scenic, Recreational, and State Natural Areas – Discuss the existence of any formally designated park land, scenic or recreational areas, or state natural areas on or adjacent to the site.

(7) Areas of Archaeological or Historical Value – Reference any studies that have been done on this site. If no studies are available discuss if and how the site has been previously disturbed. List any buildings on the site and their approximate age. Determine whether any sites on [The National Register of Historic Places in North Carolina](#) are within or near the project's impact area.

(8) Air Quality – Identify the area's air quality classification, acknowledging if it is in transition and why. Discuss the current sources of emissions for the site. Discuss any previous odor problems or complaints due to any existing facilities.

(9) Noise Levels – Discuss the current noise levels on the site with a measurable benchmark, if possible.

(10) Water Resources (Surface Water and Groundwater) - Identify surface waters and groundwater (aquifers) in the project area. For surface waters, identify the name, location (include on the enclosed map in Section G), classification ([BIMS](#)), and use support ratings. Identify the river basin where the project is located. If there are unnamed streams, estimate the average flow. Discuss groundwater in terms of use, quality, quantity, depth, and recharge.

(11) Forest Resources – List type (for example, hardwoods/pines) at or near the site.

(12) Shellfish or Fish and Their Habitats – Are there categories of shellfish beds/fish habitats at or near the site? Are these closed beds, highly productive areas, or spawning areas?

(13) Wildlife and Natural Vegetation – Identify any wildlife habitat that exists on or near the project area. List specific species of dominant plants and animals that are indicative of the kind of habitat that exists, as well as any threatened or endangered species. ([UWFWS' Threatened and Endangered Species in North Carolina](#)).

E. Predicted Environmental Effects of Projects – In this section the discussion should center on the direct, secondary, and cumulative impacts that the project will have on the same topics covered in the previous section with the addition of “(14) Introduction of Toxic Substances.” Identify both the construction and operational impacts. If there will be no impact in any specific topic area (#1-13 above), that should be stated. If the impact

is small and deemed to be insignificant, describe the impact and then make a statement to that effect at the end of the discussion for each topic. In all categories, quantify impacts where feasible (i.e., in terms of acres, linear feet, etc.).

If, in Section D, “Existing Environmental Characteristics of Project Area,” it was shown that a resource did not exist on or near the site, then indicate “Not Applicable (N/A)” in the appropriate section. For example, if there are no wetlands on the site or near the site that could be impacted by the project, then there cannot be any environmental consequences to wetlands from the project and there need not be any mitigative measures. Therefore, the topic of wetlands does not need to be addressed in this or the next section and “N/A” should be indicated under #4 of this section.

(1) Topography – Will this project change the existing topography? Identify and evaluate any encroachments of the project on flood plains.

(2) Soils – Will this project cause any soil disturbance or contamination? If soil is to be moved, how many square yards/feet will be moved and to what location? If soil is expected to be contaminated, discuss the contaminant.

(3) Land Use – How will the land use change due to the project and how will the new use(s) fit into the intended land use of the entire area in terms of conservation, development, ecological function, and quality of life? Will local zoning or land use plans need to be changed?

(4) Wetlands – Will there be any direct or indirect impacts on wetlands from the project? If wetland is to be filled, how many acres are involved and what kind of authorization (permit) is required? Will the diversion/addition/withdrawal of surface water impact existing wetlands? Construction activity as well as long-term operational activity should be considered.

(5) Prime or Unique Agricultural Lands – How will the project affect the identified prime or unique agricultural land? How much acreage will be lost and how much retained in that use? What will be the impact of the loss?

(6) Public Lands, Scenic and Recreational Areas – How will the project impact any formally designated park land, scenic, recreational or state natural areas on or adjacent to the site? Again, quantify the amount of loss. Also, discuss the loss of any informal scenic or recreational site functions.

(7) Areas of Archaeological or Historical Value – How will the project affect any areas of archaeological or historical value? Will any building be demolished or renovated? If yes, include photographs of buildings on the site. Determine whether any sites on [The National Register of Historic Places in North Carolina](#) are likely to be impacted by the project.

(8) Air Quality – How will the ambient air quality be affected by the project? Remember to discuss both the construction and the operation of the project. Consider cumulative impacts as this project is added to the existing development. Will there be any open burning? If parking is involved and there will be more than 750 spaces, a Complex Air Source permit will be required. Confirm if the project will increase odor levels or increase the possibility for odor complaints.

(9) Noise Levels – Will the project increase noise levels? If so, when (days of the week and hours of day)? At what distance will increased noise levels be heard? Will surrounding properties be affected by noise level? Please be sure to address both installation of the project and its subsequent operation.

(10) Water Resources – How will the project impact the following during construction and operation: surface water quality and quantity, and groundwater quality and quantity? Address any changes in the amount of impervious surface at the project site and stormwater runoff (i.e., nonpoint source pollution). When discussing these impacts, include impacts on erosion rates at the site and downstream, sedimentation changes, changes in downstream water quality (e.g., eutrophication impacts), etc.

(11) Forest Resources – If any forests are destroyed by this activity, describe forestry practices to be used.

(12) Shellfish or Fish and Their Habitats – What kinds of impacts on shellfish, fish, or their habitats will the project have either during construction or operation? Again, consider on-site and nearby aquatic habitats.

(13) Wildlife and Natural Vegetation – How much of the existing natural vegetation will be destroyed or altered by the project? If the wildlife will be displaced, are there surrounding areas that provide similar types of habitat or does the project encompass any possible relocation areas nearby? What is the long-term effect if more development is planned for the area?

(14) Introduction of Toxic Substances – Will any toxic substances be introduced during construction or operation of the project? If so, name them and identify how they will be used. Discuss any measures that will be taken to ensure that toxic substances will be treated in accordance with all appropriate regulations so that there will be no significant environmental impact.

F. Mitigative Measures – The only topics that need to be covered in this section are those that were deemed to be significantly affected by the proposed project in Section E, “Predicted Environmental Effects of Projects.” List all of those topics in the same order as above and discuss for each one what measures are going to be taken to mitigate the effects of the project. For example, wetlands created to offset wetland loss, or if habitat of any kind is going to be created, it should go in this section. If the project will cause an increase in emissions, what steps are being planned to minimize or reduce future emission increases? If stormwater control practices are going to be implemented, what kinds and what level of rainfall events will they accommodate? Provide quantitative data.

Each local government in the PSA must provide mitigation measures if any of the project’s impacts are anticipated to occur within its jurisdiction. Describe all local development regulations and enforceable policies that these jurisdictions will implement/enforce. Such measures will receive the strongest consideration by DWQ as to whether or not a Finding of No Significant Impact (FNSI) is appropriate for the EA.

Provide a description of local stormwater and nonpoint source pollution management programs. Described measures may include, but are not limited to local programs related to: impervious surface reduction, open space protection, riparian buffers, low-impact development, sedimentation and erosion control programs, and ongoing or planned environmental restoration projects. DWQ will be particularly interested in programs to address potential impacts to 303(d) listed waters and those waters identified in the Basinwide Water Quality Plan as having notable concerns. DWQ encourages the implementation of restorative measures to reverse existing negative impacts, particularly in watersheds containing listed streams, streams with notable concerns, and headwater streams. Additionally, local government growth management and planning initiatives should be described.

Applicable local regulation and code sections referenced need to be included in an appendix (full text copies of zoning, subdivision plans, comprehensive plans, etc., should not be included). Describe any construction permits (such as those for erosion and sedimentation control, and stream and/or wetland impacts) or other efforts that will be employed to mitigate for the project’s direct impacts. New and/or innovative local land use regulations may be needed in order for a FNSI to be issued.

G. Maps - Provide the following maps/figures of the entire project area. Each map should show the specific location(s) of the proposed project's direct impact:

1. Site Plan: A reproducible 8 1/2" x 11" or 11" x 17" map(s) at a readable scale that shows the project site and immediately adjacent properties. This map(s) should show all existing and proposed improvements to the project site, as appropriate, with all significant environmental features on-site or immediately adjacent to the project site shown.

2. Vicinity/Location Map: A reproducible 8 1/2" x 11" or 11" x 17" map drawn at a legible scale that shows location of project site(s), including the service area of the project relative to surrounding areas. This map should be separate from the site plan and should show (and label) the location of all proposed activities, including significant environmental or locational features, such as:

- i. proposed and/or existing plant site
- ii. proposed transmission lines, with lengths and diameters labeled
- iii. proposed pump stations, with capacities labeled
- iv. proposed spray irrigation facilities, with acreage labeled
- v. proposed storage tanks, with capacities labeled
- vi. surface waters
- vii. river basin boundaries
- viii. major roads and highways
- ix. project boundaries (site and service areas)
- x. municipal and county jurisdiction lines
- xi. north arrow and scale

3. USGS Quad Map – A reproducible map with the direct project footprint, including each proposed stream and/or wetland crossing labeled by number. Also, provide an accompanying table that lists each crossing, the diameter sewer that will be installed at the locations, the installation method used to install the sewer, and the amount of environmental impact at each crossing. Please total the acreage of impact for the entire project. (Please note that SHPO uses this map in its review of the project's likely impact(s) to archaeological and/or historic resources.)

4. Soil survey map(s)

5. Wetland delineation map(s) – This information can be obtained from the [U.S. Fish & Wildlife Service's National Wetlands Inventory](#).

H. References – List in alphabetical order any documents referenced in the EA.

* This Guidance is based on the Department of Administration's [Guidelines](#) document, with additions of information requests typical of projects where DWQ is the lead agency.