

**Chapter 16.15 MTMC
Critical Areas Ordinance
Appendices**

**APPENDIX 1
WETLAND STUDY & REPORTING REQUIREMENTS**

1. Prior to the issuance of a SEPA threshold determination for a proposal within 200 feet of a wetland, as defined in MTMC 16.15.020, a wetland report must be submitted to the City for review. The purpose of the report is to determine the extent, characteristics and functions of any wetlands located on or potentially affected by activities on a site where regulated activities are proposed. The report will also be used by the City to determine the appropriate wetland rating and to establish appropriate buffer requirements. The information required by this report should be coordinated with the study and reporting requirements for any other sensitive areas located on the site.

2. Wetland boundaries must be staked and flagged in the field by a qualified consultant employing the Federal Methodology. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a wetland delineation report.

3. A wetland delineation report shall include the following information:

a. Vicinity map;
b. Site designated on a National Wetland Inventory Map (U.S. Fish and Wildlife Service) and a City of Redmond Wetland Inventory Map;

c. The wetland boundary must be accurately drawn at an appropriate engineering scale such that information shown is not cramped or illegible. Generally, a scale of 1" = 40' or greater (such as 1" = 20') should be used. Existing features must be distinguished from proposed features. The map must show:

i. site boundary property lines and roads;
ii. internal property lines, rights-of-way, easements, etc.;
iii. existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
iv. contours at the smallest readily available intervals, preferably at 5-foot intervals;
v. delineated wetland boundary;
vi. hydrologic mapping showing patterns of water movement into, through, and out of the site area; and
vii. location of all test holes and vegetation sample sites, numbered to correspond with flagging in the field and field data sheets.

viii. for large and/or complex projects, an air photo with overlays displaying the site boundaries and wetland delineation may be required. Generally, an orthophotograph at a scale of 1" = 400' or greater (such as 1" = 200') should be used. If an orthophotograph is not available, the center of a small scale (e.g., 1" = 2,000') aerial photograph enlarged to 1" = 400' may be used.

d. The report must describe:
i. locational information including legal description and address;
ii. all natural and man-made features within 200 feet of the site boundary;
iii. delineation methodology, with special emphasis on whether the approach used was routine, intermediate, or comprehensive, as described in the Federal Manual;
iv. general site conditions including topography, acreage, and surface areas of wetlands and water bodies;
v. specific descriptions of plant communities, soils, and hydrology; and
vi. a summary of existing wetland function and value.

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e. Field data sheets from the Federal Manual, numbered to correspond with sample site locations as staked and flagged in the field.

f. A summary of proposed wetland and buffer alterations, impacts, and the need for the alterations as proposed. Potential impacts may include but are not limited to loss of flood storage potential, loss of wildlife habitat, expected decreases in species diversity or quantity, changes in water quality, increases in human intrusion, and impacts on associated wetland or water resources. If alteration of a Type II or III wetland is proposed, a wetland mitigation plan is required according to the standards of MTMC 16.15.120.

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**APPENDIX 2
STREAM RECONNAISSANCE REPORT REQUIREMENTS**

1. Prior to the issuance of a SEPA threshold determination for a proposal, a stream reconnaissance report must be submitted to the City for review. The purpose of the report is to determine the physical and biological characteristics of streams on any site where regulated activities are proposed. The report will also be used by the City to determine the appropriate stream rating designation and buffering requirement for the stream. The information required for this report should be coordinated with the study and reporting requirements established for any other sensitive areas located on the site.

2. Stream banks (or stream centerline) should be flagged in the field by a qualified consultant. Field flagging must be distinguishable from other survey flagging on the site. The field flagging must be accompanied by a stream reconnaissance report. The report shall include the following information:

- a. Vicinity map;
- b. Site designated on a City of Mountlake Terrace stream inventory map;
- c. Streams shall be located approximately on a site map at an appropriate engineering scale such that information shown is not cramped or illegible. Generally, a scale of 1" = 40' or greater (such as 1" = 20') should be used. Existing features must be distinguished from proposed features.

The map must show:

- i. site boundary property lines and roads;
- ii. internal property lines, rights-of-way, easements, etc.;
- iii. existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
- iv. contours at the smallest readily available intervals, preferably at 5-foot intervals;
- v. approximate locations of all streams on the property;
- vi. hydrologic mapping showing patterns of water movement into, through, and out of the site area; and
- vii. for large and/or complex projects, an air photo with overlays displaying the site boundaries and stream locations may be required. Generally, an orthophotograph at a scale of 1" = 400' or greater (such as 1" = 200') should be used. If an orthophotograph is not available, the center of a small scale (e.g., 1" = 2,000') aerial photograph enlarged to 1" = 400' may be used.

- d. The report must describe:
 - i. locational information including legal description and address;
 - ii. all natural and man-made features within 150 feet of the site boundary;
 - iii. general site conditions including topography, acreage, and area hydrology;
 - iv. specific descriptions of streams, including gradient and flow characteristics, stream bed condition, stream bank and slope stability, presence of fish or habitat for fish, presence of obstructions to fish movement, general water quality, and stream bank vegetation; and
 - v. a summary of existing stream value for fisheries habitat.

A summary of proposed stream and buffer alterations, impacts, and the need for the alterations as proposed. Potential impacts may include but are not limited to vegetation removal, stream bed and stream bank alterations, alteration of fisheries habitat, changes in water quality, and increases in human intrusion. If alteration of a stream is proposed, a stream mitigation plan is required according to the standards of Section 12.

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**APPENDIX 3
WILDLIFE STUDY AND REPORTING REQUIREMENTS**

1. Prior to the issuance of a SEPA threshold determination for a proposal, a wildlife habitat report must be submitted to the City for review. The purpose of the report is to determine the extent, function and value of wildlife habitat on any site where regulated activities are proposed. The report will also be used by the City to determine the sensitivity and appropriate classification of the habitat, appropriate buffering requirements, and potential impacts of proposed activities. The information required by this report should be coordinated with the study and reporting requirements for any other sensitive area located on the site.

2. The report shall include the following information:

- a. Vicinity map;
- b. A map showing:
 - i. site boundary property lines and roads;
 - ii. internal property lines, rights-of-way, easements, etc.;
 - iii. existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.;
 - iv. contours at the smallest readily available intervals, preferably at 5-foot intervals;
 - v. for large and/or complex projects, an air photo with overlays displaying the site boundaries and wetland delineation may be required. Generally, an orthophotograph at a scale of 1" = 400' or greater (such as 1" = 200') should be used. If an orthophotograph is not available, the center of a small scale (e.g., 1" = 2,000') aerial photograph enlarged to 1" = 400' may be used;
 - vi. a map of vegetative cover types, reflecting the general boundaries of different plant communities on the site;
 - vii. a description of the species typically associated with the cover types, including an identification of any critical wildlife species that might be expected to be found;
 - viii. the results of searches of DNR's Natural Heritage and Non-Game Data System databases; and
 - viii. the result of searches of the Washington Department of Fish and Wildlife Priority Habitat and Species database.
- c. The report must describe:
 - i. locational information including legal description and address;
 - ii. all natural and man-made features within 150 feet of the site boundary;
 - iii. general site conditions including topography, acreage, and water bodies or wetlands;
 - iv. identification of any areas that have previously been disturbed or degraded by human activity or natural processes;
 - v. the layers, diversity and variety of habitat found on the site;
 - vi. identification of edges between habitat types and any species commonly associated with that habitat;
 - vii. the location of any migration or movement corridors; and
 - viii. a narrative summary of existing habitat functions and values. The analysis shall use a habitat evaluation procedure or methodology approved by the Department.
- d. A summary of proposed habitat and buffer alterations, impacts and mitigation. Potential impacts may include but are not limited to clearing of vegetation, fragmentation of wildlife habitat,

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expected decreases in species diversity or quantity, changes in water quality, increases in human intrusion, and impacts on wetlands or water resources.

e. The level of detail contained in the report shall generally reflect the size and complexity of the proposal and the function and value of the habitat. The Department may require field studies in appropriate cases.

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**APPENDIX 4
GEOLOGIC HAZARD REPORTING REQUIREMENTS**

1. Applicants for activities within geologic hazard areas shall conduct technical studies to: evaluate the actual presence of geologic conditions giving rise to geologic hazards; determine the appropriate class of hazard, according to the classification of potential hazards contained in these regulations; evaluate the safety and appropriateness of proposed activities; and recommend appropriate construction practices, monitoring programs and other mitigation measures required to ensure achievement of the purpose and intent of these regulations. The format of any required reports shall be determined by the City. The information required by this report should be coordinated with the study and reporting requirements for any other sensitive areas located on the site.

2. The approach of the City of Mountlake Terrace critical area regulations is to require a level of study and analysis commensurate with potential risks associated with geologic hazards on particular sites and for particular proposals. Depending on the particular geologic hazard, geologic, hydrologic and/or topographic studies may be required. At a minimum, all applicants shall review the history of the site and conduct a surface reconnaissance. The appropriate report(s) and level of analysis shall be determined using the following guidelines:

- a. Class 2 Landslide Hazard Areas:
 - i. Review site history and available information;
 - ii. Conduct a surface reconnaissance of the site and adjacent areas;
 - iii. Conduct subsurface exploration if indicated by i. and ii. as determined by the applicant's qualified consultant and the City.
- b. Class 3 Landslide Hazard Areas:
 - i. Review site history and available information;
 - ii. Conduct a surface reconnaissance of the site and adjacent areas;
 - iii. Conduct subsurface exploration suitable to the site and proposal to assess geohydrologic conditions;
 - iv. Recommend surface water management controls during construction and operation;and
 - vi. Proposed construction scheduling;
- c. Class 4 Landslide Hazard Areas:
 - i. Review site history and available information;
 - ii. Conduct a surface reconnaissance of the site and adjacent areas;
 - iii. Conduct subsurface exploration suitable to site and proposal to assess geohydrologic conditions;
 - iv. Conduct detailed slope stability analysis;
 - v. Recommend detailed surface water management controls during construction and operation;
 - vi. Proposed construction scheduling;
 - vii. Recommendations for site monitoring and inspection during construction.
- d. Critical Erosion Hazard Areas:
 - i. Review site history and available information;
 - ii. Conduct a surface reconnaissance of the site and adjacent areas; and

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iii. Identify surface water management, erosion and sediment controls appropriate to the site and proposal.

e. Seismic Hazard Areas:

i. For one and two story single-family structures, conduct an evaluation of site response and liquefaction potential based on the performance of similar structures under similar foundation conditions;

ii. For all other proposals, conduct an evaluation of site response and liquefaction potential including sufficient subsurface exploration to provide a site coefficient (S) for use in the static lateral force procedure described in the Uniform Building Code.

f. Aquifer Recharge Areas:

i. A characterization of the affected aquifer system and a description of subsurface soil types (between the surface and the uppermost significant aquifer);

ii. Description of proposed uses and activities;

iii. Identification of the type and quantities of any dangerous or hazardous chemicals or substances that will be used, stored, transported or disposed of on the site;

iv. Proposed methods of storing any of the above substances, including containment methods;

v. An emergency response plan for dealing with any spills; and

vi. Proposed Best Management Practices (BMPs) s for controlling surface water runoff.

g. All Critical Geologic Hazard Areas:

i. Vicinity map;

ii. A map showing:

(a) site boundary property lines and roads;

(b) internal property lines, rights-of-way, easements, etc.;

(c) existing physical features of the site including buildings, fences, and other structures, roads, parking lots, utilities, water bodies, etc.; and

(d) contours at the smallest readily available intervals, preferably at 5-foot intervals.

iii. The report must describe:

(a) locational information including legal description and address;

(b) all natural and man-made features within 150 feet of the site boundary;

(c) general site conditions including topography, acreage, and water bodies or wetlands;

(d) identification of any areas that have previously been disturbed or degraded by human activity or natural processes;

(e) a characterization of soils, geology and drainage; and

(f) a characterization of groundwater conditions including the presence of any public or private wells in the immediate vicinity.

iv. An analysis of proposed clearing, grading and construction activities, including construction scheduling; potential direct and indirect, on-site and off-site impacts from development; and proposed mitigation measures, including any special construction techniques, monitoring or inspection program, erosion or sedimentation programs (during and after construction), and surface water management controls.

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**APPENDIX 5
MITIGATION PLAN REQUIREMENTS**

1. Where it is determined by the City that compensatory mitigation is required or appropriate, a mitigation plan shall be prepared. The purpose of the plan is to prescribe mitigation to compensate for impacts to the affected sensitive area functions, values and acreage as a result of the proposed action. This plan shall consider the chemical, physical, and biological impacts on the critical area system using a recognized assessment or evaluation methodology and/or best professional judgment.

2. The mitigation plan shall be prepared in two phases – a conceptual phase and a detailed phase.

a. Conceptual Plan - Standards and Criteria. The applicant shall prepare a conceptual mitigation plan for submission to the Department at a pre-mitigation conference. The conceptual mitigation plan shall include:

- i. General goals of the mitigation plan;
- ii. A review of alternative actions that would avoid or lessen the impacts on the wetland;
- iii. A review of literature or experience to date in restoring or creating the type of wetland proposed;
- iv. Approximate site topography following construction;
- v. Location of proposed wetland compensation area;
- vi. General hydrologic patterns on the site prior to and following construction;
- vii. Nature of compensation, including wetland or habitat types (in-kind and out-of-kind), general plant selection and justification, approximate project sequencing and schedule, and approximate size of the new sensitive area buffer.
- viii. A conceptual maintenance plan; and
- ix. Conceptual monitoring and contingency plan.

b. Detailed Plan - Standards and Criteria. Following acceptance of the conceptual mitigation plan by the Department, the applicant shall submit a detailed mitigation plan prepared by a qualified consultant. Each detailed plan shall contain, at a minimum, the following seven components, and shall be consistent with applicable mitigation standards:

i. A clear statement of the objectives of the mitigation. The goals of the mitigation plan should be stated in terms of the new wetland functions and values compared to the functions and values of the original wetland. Objectives should include:

(a) Qualitative and quantitative standards for success of the project, including hydrologic characteristics (water depths, water quality, hydroperiod/hydrocycle characteristics, flood storage capacity); vegetative characteristics (community types, species composition, density, and spacing); faunal characteristics, and final topographic elevations.

(b) An ecological assessment of the wetlands values and wetland buffers that will be lost as a result of the activities, and of the replacement wetlands and buffers, including but not limited to the following:

- (i) Acreage of project;
- (ii) Existing functions and values;
- (iii) Sizes of wetlands, wetland buffers, and areas to be altered;
- (iv) Vegetative characteristics, including community type, areal coverage, species composition, and density;
- (v) Habitat type(s) to be enhanced, restored, or created; and

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(vi) Dates for beginning and completion of mitigation project, and sequence of construction activities.

(c) A statement of the location, elevation, and hydrology of the new site, including:

- (i) Relationship of the project to the watershed and existing water bodies;
- (ii) Topography of site using five foot contour intervals;
- (iii) Water level data, including depth and duration of seasonally high water table;
- (iv) Water flow patterns;
- (v) Grading, filling and excavation, including a description of imported soils;
- (vi) Irrigation requirements, if any;
- (vii) Water pollution mitigation measures during construction;
- (viii) Aerial coverage of planted areas to open water areas (if any open water is to

be present); and

(ix) Appropriate buffers.

(d) A planting plan, describing what will be planted where and when, including:

- (i) Soils and substrate characteristics;
- (ii) Specify substrate stockpiling techniques; and
- (iii) Planting instructions, including species, stock type and size, density or

spacing of plants, and water and nutrient requirements.

(e) A monitoring and maintenance plan, consistent with applicable requirements of this chapter.

- (i) Specify procedures for monitoring and site maintenance; and
- (ii) Submittal of periodic monitoring reports to the Department.

(f) A contingency plan, which addresses the potential need and responsibility to modify the mitigation program in response to changes, and consistent with requirements of this chapter.

(g) A detailed budget for implementation of the mitigation plan, including monitoring, maintenance and contingency phases.

(h) A guarantee, in the form of a bond or other security device in a form and amount acceptable to the City, assuring that the work will be performed as planned and approved, consistent with the requirements of this chapter.